Coastline
Community College

Strategic Technology Plan
2012 – 2017

Distance Learning & Technology Committee

Thursday, November 29, 2012

COASTLINE
COMMUNITY COLLEGE

Subject: Technology Plan
To: Coastliners and Coastline Constituents

Transformation of our college is inevitable and critical.   Today's workplace increasingly demands tech-savvy knowledge workers who are fully conversant with the acquisition and presentation of information using technology and workers who collaborate and work virtually with peers around the world.   This new and ever-changing environment comes as no surprise to a majority of Coastline students; many are digital natives and virtual learners, who are familiar with and use technology in everything they do.   Moreover, unlike many colleges, the progression to an ever-increasing world of ubiquitous persistent technology integrated into every aspect of daily life and learning has been a natural progression for Coastline.   Whereas many colleges experienced a major paradigm shift, Coastline with its experience as a *college without walls (*embracing technology) glided into the new technology-enabled era with a degree of ease. Today however, this in itself presents a major threat to the college.

Where we were once pioneering the way and complacent about being a technology-enabled outlier, we now find that many if not most colleges, have suddenly and aggressively moved into our domain.   Moreover, the rapid advancement of mobile computing, social networking, and other critical and emerging technologies is now placing Coastline in a position of catch-up!   We are now immersed in a crowded field where others have acted more aggressively.   Where we were once segmented along with just a few other institutions, we are now one of many in the same position. Even though we predicated many of the changes that would dramatically impact teaching and learning, and implemented numerous pilots and small programs, we have not acted with urgency in a unified manner.

Our new challenge ─ to innovate, to create, to transform, and to reinvent ─ is paramount.

If the College's mission of providing accessible, affordable, and high quality education is to be sustained, Coastline must leverage technology in new and creative ways, now and into the future.   As technology has become a fundamental component of the education landscape for all institutions, nationwide and worldwide, the strategic application of technology must be leveraged more effectively than ever before.   No longer is Coastline an outlier able to pick and choose when and how to use technology with little or no competition.   The National Education Technology Plan, *Transforming American Education – Learning Powered by Technology* calls for the application of advanced technologies used in our daily personal and professional lives to improve student learning nationwide at all levels of education.   We must act quickly, in a decisive and aggressive manner.

We urge you to consider the vision for transforming the college's technology discussed in the plan.   We also urge you to embrace and champion the goals and objectives set forward to achieve the plan.   And most of all, we urge you to consider the urgency of our actions.

Sincerely,
Technology Plan Work Group

Acknowledgements

The Technology Committee and Technology Plan Work Group (members listed below) would like to thank everyone who contributed to this plan.   The initial document was crafted and refined through a collaborative process that involved focus group meetings with various departments, surveys of college constituency (faculty, classified staff, managers, and students), draft document reviews by constituency groups (e.g., Technology Committee, department and wing managers, academic department chairs, Academic and Classified Senate, and the Planning, Institutional Effectiveness and Accreditation Committee, College Council), and open forums discussions.

Strategic Technology Plan – 2012-2017 - Work Group
- Dan Jones, Executive Dean, Office of Learning & Information Technologies
- Ted Boehler, Ed.D., Dean of Instruction, Newport Education Center
- Dan Johnson, Ph.D., Co-Chair, Distance Learning & Technology Committee (Faculty Member)
- Anthony Maciel, Co-Chair, Distance Learning & Technology Committee (Interim Senior Director Information Technology)
- Cheryl Chapman, Faculty Member

Distance Learning & Technology Committee (DL&TC) - 2011-2012

Mandate	Members 2011-12	Meeting Schedule, etc.
To review Coastline's Distance Learning courses and curriculum in relation to issues of feasibility, production, facilities, technology, marketing, contract education, research, and student support services.	• Classified (ISD Rep - Sylvia Amito'elau) • Classified (DL Department - Tai James) • Classified (Deborah Tetnowski) • Classified (Mark Worden) • Counselor (Helen McClure) • Dean, CTE (Ted Boehler) • Dean, Distance Learning (Vince Rodriguez) • Dean, Military or Designee (Janell Keough) • Dean, ISD or Designee (Dan Jones) • Faculty (Curriculum Distance Learning Rep. - Cheryl Chapman) • Faculty (Senate - Bob Covert) • Faculty (Senate - Dan Johnson) • ISD (Bob Nash) • IT Director (Co-Chair - Anthony Maciel) • Librarian (Cheryl Stewart) • Student (ASG - Jesus Becerra)	September – November & February – May 3rd Thursday - 3-5 pm **Location** College Center **Co-chairs** Dan Johnson - 241-1398 Anthony Maciel - 241-6225 **Committee Support** Karen McLucas - 241-6140

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Executive Summary

A Vision for the Future

Coastline Community College's *2011-2017 Strategic Technology Plan* (STP) was developed to contextualize Coastline's vision of technology in relationship to its overall vision, mission, and Master Plan.   The plan presents a dynamic approach to evaluating, adopting, and implementing new and emerging technology both from an intrinsic and extrinsic value proposition supporting the notion that as technology advancements occur, perspectives, values, theories, and methodologies radically and rapidly change.   There is little doubt that unknown or unexpected technologies will change education in ways unimagined over the next five to ten years.   As a result, this plan does not attempt to determine everything that should be accomplished in each department in an incremental fashion; rather, the plan presents a conceptual map with targeted technologies and systems that need to be evaluated, implemented, and/or prepared for now.   The overarching goal of this plan is to ensure Coastline's sustained success in meeting the college, district, state, and national "*student success agenda.*"

The Strategic Technology Plan for Coastline Community College is intended to provide an effective framework for the strategic implementation of technology at the College. This plan will update prior planning initiatives and documents based on the college and District's master plans.   It is recognized and acknowledged that for this plan to be relevant and successful, and remain so, it must continuously solicit and incorporate feedback from college and district-wide constituencies as well as a broader college community spanning local, regional, national, and international constituencies, stakeholders, knowledge leaders, and business and government leaders.   It is only by leveraging this collective insight, knowledge, and experience that Coastline will be able to achieve this goal.   Given the scope of this need, a pragmatic and tactical approach is necessary.   Development will be through an iterative process tied to existing college, district, and statewide processes.   The following chart provides a conceptual map of the process.
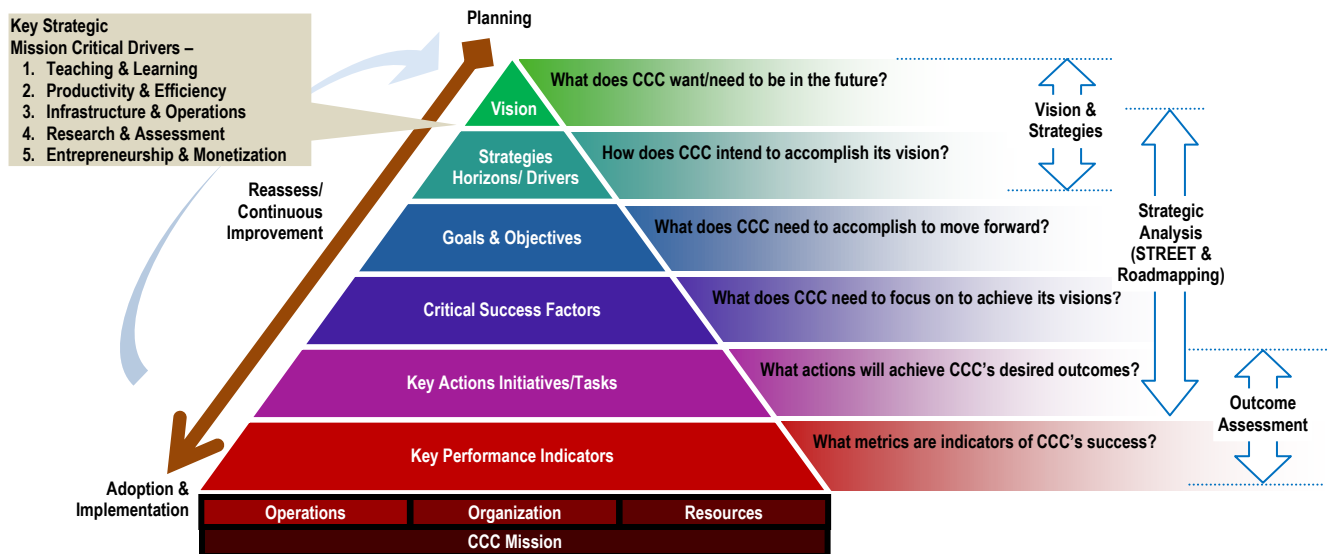
Figure A – Strategic Technology Planning Process

The Strategic Technology Plan Development Process Cycle will consist of *seven* steps followed by implementation and evaluation.   However, since this is the inauguration of a new planning process, additional *pre* and *post* development activities will be required to synchronize the new process with past practices and available information. The steps of the process are described in the following.   A timeline for launching the planning cycle and process is illustrated in figure B.

- **PHASE 1 – Align Goals & Strategies** ─ Align Coastline's strategic goals and initiatives with the District's *Vision 2020* goals, the state's student success agenda, and the goals of the National Strategic Technology Plan.
- **PHASE 2 – Gather Data** ─ Comprehensive inventory of all internal technologies and systems will be developed.
- **PHASE 3 – Examine Internal & External Issues** ─ *E*xternal assessment of academic institutions recognized as leaders in use of innovative technologies.   A secondary, but critical part of this phase will be an assessment of internal unmet technology needs identified by departments and shared governance groups.
- **PHASE 4 – Develop & Recommend Strategies** ─ Identify – (1) gaps between CCC and its peers, (2) gaps between where CCC is now and where it wants to be, and (3) opportunities for technology investment.   .
- **PHASE 5 – Recommend Roadmaps/Action Plans** ─ For each identified technology goal develop roadmaps that assess and identify (1) required financial resources, (2) staff competencies, and (3) facilities and/or infrastructure requirements.   .
- **PHASE 6 – Update Strategic Technology Plan Overview** ─ Develop plan at the end of each three year cycle.
- **PHASE 7 – Measure Success/Restart Process** ─ Identify and measure key indicators that will demonstrate success or failure.
- *PHASE 8 – Implementation & Evaluation* ─ Based on success or failure of implementation initiatives, the process will continually recycle and refresh.

Phase	Activity/Process	2011-2012			2012-2013			2013-2014			2014-2015		
		Fall	Spring	Summer	Fall	Spring	Summer	Fall	Spring	Summer	Fall	Spring	Summer
	Draft STP Completed & Planning Process Ratified												
Phase 1	Align CCC Goals & Strategies												
Phase 2	Gather Data												
Phase 3	Examine Internal & External Issues												
Phase 4	Develop & Recommend Strategies												
Phase 5	Develop & Recommend Key Roadmaps/Action Plans												
Phase 6	Update STP Overview (Website)												
Phase 7	Measure Success/Restart Process												
Phase 8	*Implementation & Evaluation*												

◆ *Review & Approval (President/Cabinet/College Council)* ➤ Technology Committee Action/Process
◯ *Interim STP Completed* ➤ Department/Wing/Constituency Action/Process/Review
◯ *STP Cycle and Full Report Completed/Available* ➤ PIEAC Action/Process/Review

Figure B – Strategic Technology Planning (STP) & Approval Cycle

Ongoing Development Review & Development

Recognizing that this plan and the related processes will result in a living *strategic technology* repository, planning framework, and roadmap process this document is a *snap-shot* of the state-of-technology.   It is not an end-goal to be achieved and then restarted and accomplished again and again.   Rather, it is an ongoing process that needs to be constantly reviewed, validated, and refreshed.   The plan is designed to be a growing repository of knowledge, a repository that becomes increasingly important in proactively planning and implementing new systems. To that end, key in this process is the establishment of a website and/or technology portal, where the Technology Committee and interested constituencies will continually publish, update, report, and discuss all things regarding technology planning, acquisition, achievement, training, goals, and initiatives.   This *Strategic Technology Plan* will be available for ongoing review and comment via the College Strategic Technology Plan website (http://technology.coastlinelive.com). Reviews and forums to update, refine, and expand the document are also part of the overall planning process.

Technology Vision

Coastline is a recognized leader in the design, development, and use of innovative technology-based teaching and learning practices, processes, and systems for anytime anywhere learning to achieve and sustain outstanding student success.

Technology Mission

Coastline uses technology in innovative and creative ways to enhance the learning environment and success of traditional and nontraditional students anytime anywhere while providing state-of-the-art support and services to faculty and staff.   Coastline is a leader and champion of continuous evaluation and testing of new and emerging technology and is willing to rapidly transform programs, processes, and practices to improve student success through the innovation and application of new technology.

Aligning Technology Goals

In 2011, the Coast Community College District (CCCD) completed the development of a ten-year vision and five-year master plan entitled the *Vision 2020 – Educational Master Plan*. This plan is intended to be an overarching framework for the District.   It seeks to promote the success of students while maintaining the vitality of the colleges in the District. This in turn, was the basis for the concurrent development of Coastline's *2011-2017 Education Master Plan*, which followed Coastline's 2008-2011 Master Plan.   In the new CCC plan, the District's strategic themes (goals) were used as a framework for developing the College's goals, initiatives, and key performance indicators.

The following table illustrates an alignment of National and State goals with *Coastline initiatives*.   Once again, it is clear that many of the concepts are broad and multiple linkages are possible.   In fact, it would not be difficult to draw a uniform linage among all elements with the exception of "*Entrepreneurship*," since the state has numerous restrictive regulations.

National Education Technology Plan	California Student Success Task Force – Critical Factors	Coastline Strategic Initiatives
1. Learning – Engage and Empower	1. Basic Skills 2. Student Success Initiatives 3. Certificate/Degree 4. Transfer	1. Enrollment Management 2. High Quality Courses, Programs, and Services 3. Integrated Planning 4. Innovation
2. Assessment – Measure What Matters	1. Basic Skills 2. Student Success Initiatives 3. Certificate/Degree 4. Transfer	1. Enrollment Management 2. High Quality Courses, Programs, and Services 3. Integrated Planning 4. Innovation
3. Teaching – Prepare and Connect	1. Basic Skills 2. Student Success Initiatives 3. Certificate/Degree 4. Transfer	1. Enrollment Management 2. High Quality Courses, Programs, and Services 4. Innovation
4. Infrastructure – Access and Enable	1. Basic Skills 2. Student Success Initiatives 3. Certificate/Degree 4. Transfer	1. Enrollment Management 2. High Quality Courses, Programs, and Services 3. Integrated Planning 4. Innovation 5. Entrepreneurship
5. Productivity – Redesign and Transform	1. Basic Skills 2. Student Success Initiatives 3. Certificate/Degree 4. Transfer	1. Enrollment Management 2. High Quality Courses, Programs, and Services 3. Integrated Planning 4. Innovation 5. Entrepreneurship
6. R&D – Innovate and Scale	1. Basic Skills 2. Student Success Initiatives 3. Certificate/Degree 4. Transfer	1. Enrollment Management 2. High Quality Courses, Programs, and Services 3. Integrated Planning 4. Innovation 5. Entrepreneurship

Table A – Alignment of the National Education Technology Plan *Strategic Issues*, California Student Success Task Force *Critical Factors* with Coastline's Strategic Initiatives

Based on the committee's review and conceptual compatibility with the planning process, the College's *Strategic Technology Plan* goals will be structured in accordance with the following *Strategic Areas* derived from various national, state, and college planning documents:

1. Innovation & Productivity
2. Teaching & Learning
3. Infrastructure & Operations
4. Research & Assessment
5. Entrepreneurship & Monetization

Strategic Planning Consideration

Assumptions

Numerous assumptions were necessary for the creation of this strategic plan and planning process.   Even though some or all may ultimately miss the mark, it is critical to have a rationale to move forward.   These assumptions represent an attempt to predict the future of technology and academia and the changing global environment.   They are based on projections by recognized futurists, technology research firms/organizations, and recognized best practices trends.   These assumptions also establish a context and starting point for future planning.   They offer readers of this plan added perspective in understanding organizational and environmental challenges and insight into why particular approaches were selected over alternatives.

Budget Environment

New and emerging technologies offering exciting capabilities are increasing pressure on technology budgets in colleges nationwide.   Unfortunately, this is at a time when the overall college budget is shrinking and all departments are being challenged to do more and more with less.   Hard choices are necessary to analyze needs and prioritize key initiatives.   As a result, all options to control costs and/or generate revenue must be exploited.   Evaluating core technology efficiencies through TCO and ROI analysis are essential.

Funding

While this Technology Plan establishes many goals and objectives, it is understood that successful outcomes are contingent upon the availability of appropriate funding and staffing levels.   Matching needs with resources is an essential component of any plan. Once the plan is approved and components prioritized the Budget Committee will evaluate funding options.

Learning and Information Technology (L&IT)

Technology systems, practices, tools, and processes are changing rapidly so adapting to, and supporting new technologies poses a challenge for the traditional L&IT paradigm.   It is also critical to understand that *consumer choice* and/or *preference* in selection and implementation technology is a key driver.   This creates a dilemma for many technologists, since the best products, *technologically*, are not always the best fit or choice for an organization.   Most visible among the numerous challenges we face is the transformation necessary to adapt to mobile technologies and social networking now viewed as mission critical.   Moreover, all technology is expected to be accessible and available from anywhere at all times and any downtime is unacceptable.   This always-on view of the network and related systems present new unmet 24/7 challenges.

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Organizational Structure

Consolidation of Instructional Systems Development and Information Technology at Coastline into the Office of Learning and Information Technologies offers a unique opportunity for Coastline to improve services in a wide range of areas.   At present, the responsibility for managing technology is divided between a centralized district IT organization and L&IT organizations at each college in the district. This arrangement has led to some redundancies/duplication and divergence of services offered by each college to students and staff.   Nevertheless, there is a strong degree of coordination regarding core business functions, e.g., ERP systems, telephony, and internet/network connectivity. Each of the colleges also manage Learning Technology support and services differently (e.g., course development and support, media services, instructional design, software development and training, web support and services, and Learning Management Systems support).   Currently, reorganization of IT services is being evaluated by the district. Consolidation of some IT services and activities is anticipated to reduce infrastructure redundancies, improve efficiencies, and leverage limited resources.

Regardless of what is decided, it's critical for Coastline's OL&IT to demonstrate an understanding of the business and academic needs of the institution, and provide alignment and support of the mission, vision, and strategic goals.   To accomplish this goal it needs to move from being a management organization into a service delivery organization.   It must establish a strong bias towards customer satisfaction that includes both quantitative and qualitative metrics.   This is critical to ensuring that information and learning technologies are effective in supporting the College's ongoing transformation and providing needed support.

Students

Today's students are no longer the people our educational system was designed to teach. They think and process information fundamentally differently from their predecessors and most importantly, the content and practices of the past are out of sync with the needs of this new generation.   This new generation of students has a different approach to learning, collaboration, and technology.   They are the first to adopt new technologies and expect to find an infrastructure capable of supporting this technology when they attend college.   Moreover, they expect their instructors and the college to use this technology for all teaching and student support services.

New Learning Paradigms

The knowledge worker of the 21st century can no longer rely on the way learning was delivered in the 20th century or the previous thousand years.   In fact, traditional education has seen few innovations since the inception of universities and schools.   It's clear that learning can no longer be divided into a place and time to acquire knowledge (school) and a place and time to apply the knowledge acquired (the workplace) or based on a just-in-case curricular design. Instead, learning has become more than ever a continuum or cycle of school, on-the-job-experience, training, and social experiences in an iterative fashion through interactions with others around the world focusing on continuous lifelong learning and collaboration.   To address the needs and challenges of lifelong learning, colleges must find ever new and innovative ways to use technology to provide learning by enabling and enhancing student success through speed, flexibility and individualization.   Increasingly, colleges are taking steps to enhance technical literacy and create a culture that encourages faculty to use computers, smart devices, and other innovative tools in their curricula. Information literacy is another topical area. While many students may be device-savvy, they may not necessarily be information-savvy. Students today, having for the most part grown up with technology, possess more technical abilities with computers and software, yet many have not learned how to use technology for academic purposes.

Key Implications

1. The pace of change is accelerating.
2. National and state mandates to radically expand the number of citizens with postsecondary credentials.
3. Competition among states to build innovation-based knowledge economies, relying on higher education as the primary provider of innovation and highly skilled human capital.
4. Learning systems and approaches are becoming more personalized, collaborative/social, and self-organizing.
5. Drive toward increased sophistication of technology and integrated digital solutions.
6. eLearning will increasingly depend on:
   - Distributed Cloud Computing
   - Enhanced Smart Mobile Technology
   - Collaborative Intelligent Filtering
   - 3-D Visualization and Interaction
7. Rising financial pressures on institutions are being passed on to students.
8. Professors currently favor textbooks but believe digital solutions will improve learning.

Key Emerging Technologies

Thirty-two key emerging technologies were identified in our review of the literature and analysis of exemplary best practices (Table 3).   Of these, many require significant expenditures and others do not appear to be ready for full scale implementation because of high cost and/or continuing technical challenges.   Nevertheless, twenty-one appear to be within the college's ability and resources and would provide significant benefit if implemented. Of these, only three technologies (marked with red arrow ▬▶) align to three of the *Strategic Areas* identified in this plan and can be implemented in one year, e.g., (1) *Collaborative Learning*, (2) *Social Networks*, and (3) *Tablet Computing.*   Ten others align to at least two *Strategic Areas*.   Considering technologies that can be implemented in one or two years, thirteen align to three or more *Strategic Areas*.   Of these, three items align to four areas (marked with gold arrow ▬▶).

The following table (Table 3) maps all of the *key emerging technologies* predicted to impact teaching and learning in the coming years to the *Strategic Areas* identified for this plan.   Many of these technologies have been discussed for years while others have just emerged as new concepts.   Those items predicted to impact the environment in 1-year and 2-years are marked as indicated.   Items indicated as key priority (College initiatives) are marked with an 🔺.   Items that have been piloted and/or partially implemented are marked with a ♦.   Items marked with a ★ have been fully implemented. Items highlighted in green can be implemented with moderate or no acquisition costs and limited resources (staff and training).

Emerging Technologies/Processes	Innovation & Productivity	Teaching & Learning	Infrastructure & Operations	Research & Assessment	Entrepreneurship & Monetization
1. Ambient Web					
2. Augmented Reality					
3. Backchannel Communication ↑		1			
4. Cloud Based ♦↑		1	1		2
5. Collaborative Learning ♦↑	1	1	1		
6. Contextual User Experience ♦	1	1			
7. Curation					
8. Electronic Books/E-books ♦↑	2	1			2
9. E-portfolios↑	1	1			
10. Game-Based Learning ♦	2	1			2
11. Gesture-Based Computing	2	1			
12. Intelligent Tutor		2			
13. Internet of Things					
14. Just-in-time learning Apps	2	2			2
15. Learning Analytics ♦↑		2	1	2	2
16. Learning Apps↑	2	1	1		1
17. Lecture Capture↑	1	1	2		
18. Mashups		1			
19. Mobile Apps ♦↑	1	2	1		2
20. OpenSource ♦↑	1	1			
21. Personal Learning Space	2	1			
22. Semantic Web					
23. Smart Systems					
24. Social Networks ♦	1	1	1		
25. Speech Recognition ♦		2			
26. Speech to Text ♦	1	1			
27. Tablet Computing ♦↑			1	1	1
28. Telepresence	1	2	1		
29. Video-bookmarking↑	2	2			2
30. Virtual Reality/Worlds ♦	2	1			2
31. Virtualization ♦↑	2	1	1		
32. Visual Recognition			2		

Table 3a – Strategic Technology Areas Mapped to Key Emerging Technologies

Critical Drivers

The District's Strategic Themes are key critical drivers that will determine the success or failure of the College's strategic technology plan. They include the following:

1. Student Success
2. Basic Skills
3. Science, Technology, Engineering, Arts, Mathematics, and Medicine (STEAM2)
4. Career and Technical Education
5. Global/International Education
6. Diversity

Strategic Technology Plan Initiatives

Based on the committee's review of various key drivers at the national, state, district, and college level*,* the College's *Strategic Technology Plan goals* were structured in accordance with the following *Strategic Areas*:

1. Innovation & Productivity
   - 12 Terminal Initiatives/Goals
     - 83 Enabling Objectives/Activities
2. Teaching & Learning
   - 18 Terminal Initiatives/Goals
     - 135 Enabling Objectives/Activities
3. Infrastructure & Operations
   - 30 Terminal Initiatives/Goals
     - 240 Enabling Objectives/Activities
4. Research & Assessment
   - 6 Terminal Initiatives/Goals
     - 43 Enabling Objectives/Activities
5. Entrepreneurship & Monetization
   - 4 Terminal Initiatives/Goals
     - 20 Enabling Objectives/Activities

Total: 71 Initiatives & 521 Objectives

Summary & Recommendations – A Bold Plan

Experience has demonstrated time and time again that early adoption of emerging technologies gives organization/corporations and academic institution a significant competitive edge and establish a culture consistent with this perspective.   This is the domain in which Coastline was founded.   Today however, that is no longer true. Coastline, like many of its competitors (private, public, and for-profit) finds itself in a crowded highly competitive domain and must rekindle its sprit of innovation and creativity to set itself apart once again.   This is crucial not only to remain on the leading edge (or regain that advantage), but because technology finds its way into the classroom and/or workplace, with or without planning.   If Coastline follows a reactive, *as needed* approach in adopting new technologies, it will increasingly runs the risk of making costly, narrowly defined and unsupported decisions, rather than strategic and tactical decisions that align with National, State, District, and College goals.

To achieve this vision, Coastline must embrace and implement a ***Bold Plan of Action****.* It must be *decisive* and *revolutionary*.   It cannot be iterative or tentative, that would only maintain the status quo at best and at worst make Coastline insignificant among thousands of other institutions of higher education.

Bold Plan of Action

To accomplish this vision the following is recommended:

1. Adopt **ONE** major collegewide integrated technology initiative
2. Require all Wings, Departments, and Programs to develop 1-3 initiatives to enhance, infuse, accomplish, and sustain this recommendation over the next 3 to 5 years.
3. Insure that adequate funding ($$) and priority/urgency is established (and enforced) collegewide to insure success
4. Obtain unqualified support from all governance/stakeholder groups (Faculty Senate, ASG, Classified Senate, Managers, District, Foundation, external constituencies, etc.) ratify and support achievement of the Bold Plan (integrated technology initiative).
5. Align desired/needed activities and expenditures at all levels

6. Align all department and program Tactical Technology Goals/Initiatives with Bold Plan
    a. Equipment replacement
    b. Infrastructure/facility upgrades/modernization
    c. New/revised   programs

Bold Plan - Example

Establish/adopt ***Ubiquitous Untethered Common Learning Environment*** with all collateral systems and support services (e.g, *MS Surface* or comparable).

Implication
1. Universal requirement for all Coastline students, faculty, and staff to have a standardized TouchPad systems/environment with full mobile integration and capability.
2. Integrate use in all classes (via support from faculty mentors, OL&IT, & DL).
3. Adopt and package required OCW/OER content (textbooks/ebooks/online) for 10 or more core courses (faculty selected & peer reviewed). Purchase of a common TouchPad with _common OER_ and _custom publisher content_ offers a significant saving for students versus rental or purchase of textbooks.

Potential Benefits
1. Instant response capability inside & beyond the classroom.
2. Interactive lectures to desktop in class or beyond (synchronous &/or asynchronous).
3. Podcast/Vodcasting casting.
4. PLS/CLS…common personal &/or collaborative learning space.
5. Standardized platform for Seaport content delivery.
6. Common eReader.
7. Flipped blended &/or hybrid learning classes.
8. Facilitate ePortfolio implementation.
9. Positive ID option/capability.
10. Streamlined technical support, e.g., common platform.
11. Mobile integration.
12. Backchannel Communication and/or Google Jockeying.
13. Improved and consistent course quality.

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Introduction — Visioning for the Future

Coastline Community College's _2011-2017 Strategic Technology Plan_ (STP) was developed to contextualize Coastline's vision of technology in relationship to its overall vision, mission, and Master Plan.   In this context, the STP reflects ongoing technology changes, exemplary practices in higher education, perspectives of constituencies at all levels, and the impact of internal and external environmental pressures.   This plan is especially interested in offering a roadmap and ongoing roadmapping process for the future, one that embraces ubiquitous continuous improvement through the adoption and application of new and emerging technologies for teaching and learning and quality and productivity, and one that is responsive to the dynamic challenges facing higher education — challenges requiring new approaches and ways of addressing technology, globalization, and competition in and out of the classroom.

This plan presents a dynamic approach to evaluating, adopting, and implementing new and emerging technology both from an intrinsic and extrinsic value proposition supporting the notion that as technology advancements occur, perspectives, values, theories, and methodologies radically and rapidly change.   There is little doubt that unknown or unexpected technologies will change education in ways unimagined over the next five to ten years.   A thorough examination of learning and information technology practices, processes, and systems must be ongoing to ensure that Coastline is ready for the inevitable disruption and leaps in innovation this brings.   As a result, this plan presents a vision and a planning process for the next five years and beyond. This plan does not attempt to determine everything that should be accomplished in each department in an incremental fashion; rather, the plan presents a conceptual map with targeted technologies and systems that need to be evaluated, implemented, and/or prepared for now.   The overarching goal of this plan is to ensure Coastline's sustained success in meeting the college, district, state, and national "_student success agenda._"

Background — Achievement though Innovation

For 36 years, technology has been a key driver of *teaching and learning* and *student access and success* at Coastline Community College.   Founded as a *college without walls*, alternative and traditional learning through technology has long been deemed by the institution's leaders to be compatible with the needs and goals of the District and the nation. Coastline's faculty, staff, and students embraced this emphasis.   As a result, the instructional environment at Coastline, since its inception, has been driven by learning and information technology coupled with innovation and creativity.   Technology-mediated instruction and innovation offers Coastline students more than mere interaction with software and hardware (computers, television, and mobile devices), it provides students additional time for meaningful contact with peers, instructors, and the community, enabling them to work and learn while taking a proactive role in their education.

Two traits have characterized Coastline since it was founded in 1976. One is steadfastness of purpose. Coastline has remained true to its founders' motto – *The community is our campus; its citizens are our students*. The other constant is a commitment to change as an institutional dynamic. There is a steadfast determination to approach problems creatively and to view obstacles as opportunities.   The College is proud to be one of 112 comprehensive community colleges in California, but is also proud and protective of its unique characteristics and *non-traditional* methods of responding quickly to the changing needs and circumstances of students, community, and the larger world.

Coastline Community College must continue to leverage technology in creative and innovative ways, now and into the future, if the College's mission of providing accessible, affordable, and high quality education is to be sustained.   As technology has become a fundamental component of the education landscape for all institutions nationwide and worldwide, the strategic application of technology must be leveraged more effectively than ever before.   No longer is Coastline an outlier able to pick and choose when and how to use technology with little or no competition.

Coastline's mission (***Coastline Community College promotes academic excellence and student success for today's global students through accessible, flexible, innovative education that leads to the attainment of associate degrees, transfers, certificates, basic skills readiness for college, and career and technical education***) *and vision (**Creating Opportunities for Student Success**)* reflect the college's intent to serve a diverse student population of individuals throughout Orange County, across California, and around the world.   These include high school students, traditional-aged college students, people working over 30 hours per week, parents, older returning students, military personnel, veterans, incarcerated students, intellectually disabled students, international students, and others who cannot or prefer not to pursue their educational goals in traditional ways.

Our mission defines Coastline's broad educational purposes (academic excellence and accessible, flexible, innovative education that leads to associate degrees, transfers, certificates, and basic skills).   It defines our intended student population (today's global students, which includes non-U.S. national international students, international students, contract and non-contract students studying from locations across the globe through distance education, and students of many ethnicities studying on campus).   The mission statement also clearly reflects that we are committed to student learning and success.

The fact that Coastline's motto is *Tomorrow's College Today* is clear indication that Coastline does not set out to reproduce what most colleges are doing.   Coastline strives to create and offer innovative programs and services through multiple modalities as well as new and emerging technologies that serve niche markets and underserved student populations.   Innovative and creative use of technology with a strong instructional design perspective is at the heart of our institutional DNA and it colors everything we do.

Some examples of Coastline's unique programs designed to serve our unique student population are:

- **Distance Learning** – This program currently serves approximately 70% of Coastline's students (Website – http://dl.coastline.edu/).
- **Military Programs** – These programs serve over 4,000 active military personnel, spouses, and veterans every semester, worldwide (Website – http://military.coastline.edu/).
- **Office of Learning and Information Technologies** (OL&IT - formerly ISD) –   Under the marketing name *Coast Learning Systems*, this unit produces and distributes high quality courses and courseware for use by Coastline and for lease by other colleges worldwide (Websites – Coast Learning Systems – http://CoastlineLearning.org; Faculty Support – http://help.wp.coastlinelive.com/).
- **STAR** – This fast-track program allows students to earn an Associate's degree in 3.5 semesters (Website – http://www.coastline.edu/programs/STAR/page.cfm?LinkID=717).
- **EBUS –** Coastline's Education Bound United States program serves Chinese high school students interested in attending college in the U.S. (Website – http://www.coastline.edu/ebus/page.cfm?LinkID=1407).
- **Acquired Brain Injury (ABI)** program – a world-renowned program designed to provide structured cognitive retraining for adults who have sustained a brain injury due to traumatic or non-traumatic injuries (Website – http://www.coastline.edu/departments/page.cfm?LinkID=418).
- **Early College High School** – A program that allows students to earn both a high school diploma and an Associate in Arts degree in just five years (Webpage – http://www.coastline.edu/echs/page.cfm?LinkID=922).
- **Work-Based Learning** – Through this program, Coastline students turn on-the-job learning and experience into college credit that can help compress the time required to earn a certificate or Associate's degree.
- **Orange County One Stop Centers** – In partnership with the Orange County Workforce Investment Board (OC-WIB), Coastline operates the One-Stop Centers to meet the needs of the employers and job seekers throughout the region. One Stop Centers Web Page.

Key words in Coastline's mission statement that reflect our unique purpose, character, and student population include *flexible*, *innovative,* and *global.* Through its distributed learning centers and distance learning programs, Coastline serves its students with programs and services that are *flexible* and convenient, offering alternative pathways to those who might not otherwise be able to attain their educational goals. Coastline has also built a reputation for *innovative* programs such as our Distance Learning and Military Programs and Coast Learning Systems, which have become models emulated by other colleges across the nation.

Section I – Strategic Technology <u>Planning</u>

Talking the Talk

Technology – A Definition

Technology means different things to different departments and people.   There is little doubt that different professions and areas of expertise, e.g., Psychology, Chemistry, Physics, Education, Computer Science, and Biology envision technology different from the general population and each other.   Wikipedia defines technology as follows – *<u>Technology</u> is the making, modification, usage, and knowledge of tools, machines, techniques, crafts, systems, methods of organization, in order to solve a problem, improve a preexisting solution to a problem, achieve a goal or perform a specific function. It can also refer to the collection of such tools, machinery, modifications, arrangements and procedures. Technologies significantly affect human's as well as other animal species' ability to control and adapt to their natural environments.*   For the purposes of this plan, we define technology in more narrow terms, whereas *Technology* herein will refer to information, instruction, communication, media (audio/visual), and research hardware, software, processes and systems used to teach, retrieve, share, analyze, track, store, and/or create teaching and learning materials for students and support the wide range of services intrinsic in college-wide operations.

Strategic Technology Plan – A Definition

A strategic technology plan serves as an extension to an organization's overall strategic plan, detailing the technical devices, applications, skills, and processes that empower an organization to achieve its goals (model illustrated below). Plans provide not only a vision of where the organization is going, but how technology will be used to get there. Strategic technology plans generally include desired customer outcomes, technology forecasting and schedule projections, technology maturation requirements and planning, and technology insertion points.   Most importantly, Strategic Technology Planning is defined as the process of planning the evolution of a program or system to achieve its future vision.   This is the key component of the overall definition embraced by this plan.
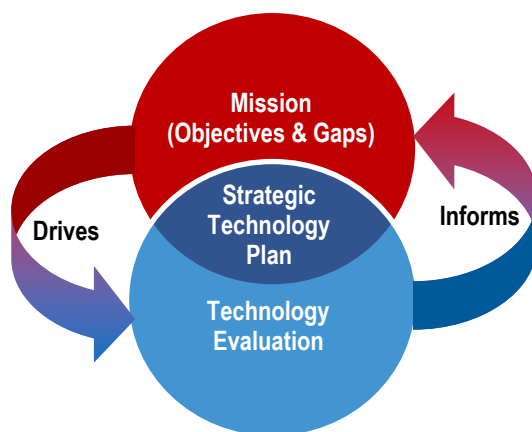

Figure 1 – Strategic Technology Plan Model

Purpose

The purpose of the Coastline Community College's (CCC) Strategic Technology Plan (STP) for Fiscal Years (FY) 2012–2017 is to establish a college-wide vision, a direction, and priorities for CCC's investments in teaching and learning, operational efficiency and productivity, and information and infrastructure management so that they promote the achievement of CCC's mission. This plan describes how STP strategies, goals, and objectives align with the mission and vision. This STP also identifies the implications outlined in CCC's *Educational Master Plan* and integrates them into implementable objectives associated with key performance indicators (KPI).

Numerous drivers—both internal and external to the College—have influenced the contents of this plan.   Internal instructional and non-instructional technology requirements, district requirements, and requirements mandated by state and federal agencies are included in these drivers.   The Strategic Technology Plan considers both CCC's current environment and future strategic objectives. The plan provides CCC with a set of strategic guidelines for modernization and a high-level roadmap of objectives to support the College's mission.   It provides the strategic plan needed to develop the details required to execute and implement the plan over the next 5 years.

The following outcomes were identified as critical challenges for CCC to achieve its Strategic Technology Plan goals. As a result, consideration is inherent in all recommendations and structure of the plan.

1. **Align technology goals** – Align the evaluation, acquisition, and application of teaching, learning, and infrastructure technology to the College's and District's mission, vision and master planning goals and objectives.
2. **Create initiatives framework –** Define a framework for assessment and implementation for all technology initiatives undertaken by the college for the next 5 -10 years.
3. **Data-driven decision making –** Establish and support well-defined and disciplined technology-based processes for information capture, stewardship, and quality and accuracy assurance for analysis and decision making at all levels.
4. **Empower employee achievement –** Empower employees by showing how their efforts directly support accomplishment of Coastline's strategic technology goals.
5. **Ensure financial resources –** Ensure limited financial resources are used in a manner that effectively serves the college's mission, vision, and goals.   Allocate sufficient resources to support technology initiatives with skilled personnel, funding, and time.
6. **Establish dynamic process cycle –** Provide for dynamic and systematic renewal process for technology planning, assessment, acquisition, evaluation, implementation, and training.
7. **Inspire openness to change –** Encourage and build an environment that embraces openness and change and the willingness to keep things that work and get rid of those that don't - whether it is a legacy software application, broken business process or failing project - reallocating resources to better investments.
8. **Instill technology culture –** Develop a culture where achievement of the strategic technology vision is woven into the fabric of each employee's day to day function.   Ensure training and support that enables employees and students to adopt new technologies.
9. **Provide strategic direction –** Provide strategic direction to ensure Coastline's continued leadership in providing technology-based teaching and learning.   Provide active and visible executive management support.

The Process

The Strategic Technology Plan for Coastline Community College is intended to provide an effective framework for the strategic implementation of technology at the College. This plan will update prior planning initiatives and documents based on the college and District's master plans.   It is recognized and acknowledged that for this plan to be relevant and successful, and remain so, it must continuously solicit and incorporate feedback from college and

district-wide constituencies as well as a broader college community spanning local, regional, national, and international constituencies, stakeholders, knowledge leaders, and business and government leaders.   It is only by leveraging this collective insight, knowledge, and experience that Coastline will be able to achieve this goal.   Given the scope of this need, a pragmatic and tactical approach is necessary.   Development will be through an iterative process tied to existing (and evolving) college, district, and statewide planning, reporting, and evaluation processes. In addition, the Technology Committee, in collaboration with constituency groups will continue to collect and analyze relevant information for continuous improvement of the plan and related processes.   The following chart provides a conceptual map of the process.
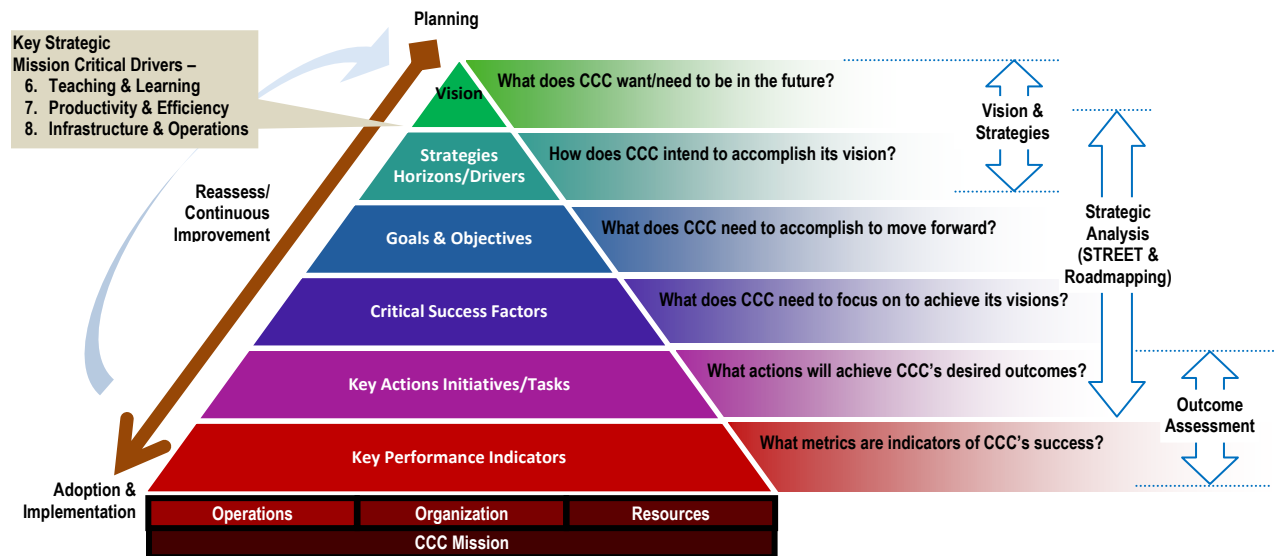
Figure 2 – Strategic Technology Planning Process

The Technology Committee *Strategic Technology Plan* Taskforce identified two approaches to use in developing a common set of issues or steps associated with the key activities and best practices associated with strategic technology planning. Both, as well as others will be used in this plan, since an integrated process offers the most flexibility and reliability.   The first method, referred to as **STREET**, developed by *Gartner Research, Inc.*, includes analysis and development of the following as key steps – scope, track, rank, evaluate, evangelize and transfer. STREET provides a framework for discussing best practices at each stage of the process.   The second approach, **Technology *Roadmap,*** is a plan that matches short-term and long-term goals with specific technology solutions to help meet those goals. Developing a roadmap generally has three major uses. It helps reach a consensus about a set of needs and the technologies required to satisfy those needs; it provides a mechanism to help forecast technology developments and it provides a framework to help plan and coordinate technology developments.   As noted, these approaches have common desired outcomes, e.g., technology planning, but are designed to achieve them differently. Our goal herein, is to use the STREET process to help drive the eventual technology roadmapping process in a complementary fashion.

STREET – The components of STREET, as interpreted and used in this process are as follows:

1. **Scope –** Provide focus and scope for technology expenditures/investments through an understanding of College and/or, District goals and objectives and higher education direction and challenges. Other activities include competitive analysis, visioning and scenario building, as well as gathering requests from departmental units and organizational stakeholders for assistance in evaluating technology or addressing problems and opportunities.
2. **Track –** Scan for new technology opportunities that impact teaching and learning and organizational efficiency and productivity and capture the results in a format that lends itself to further decision making.

3. **Rank –** Select the subset of technologies, initiatives and project ideas that look most likely to bring significant benefit to the College and/or District. Ranking involves balancing resources between and within two sets of activities – supporting organizational units and/or programs and management requests, and identifying and driving forward strategic technologies proactively, such as a head of department and/or program requests. Techniques include technology radar screens, balanced scorecards and hype cycles that examine the relative costs, benefits and risks of the technologies recommended.   It should be noted that this process largely has not been completed at the time.   Moreover, priorities continuously need to be ratified before limited resources are invested.   As a result, this plan's primary purpose is to outline areas of interest and promise while establishing an ongoing process and timeline for completing planning and updates.   Based on approval of the plan and ranking of departments by key initiatives, focused analysis can be completed.

4. **Evaluate –** Investigate areas where insufficient knowledge of the technology or its impact is preventing a final determination of whether to deploy the technology operationally. Activities include laboratory and paper investigations, prototyping and pilots. The result of the evaluation is a decision to take one of four courses:
   - Proceed to operational deployment
   - Revisit the evaluation in a revised form (for example, with a different application or alternative product)
   - Return the technology to the tracking stage until it matures further
   - Remove the technology from the portfolio being tracked.

5. **Evangelize** – Influence those in a position to bring recommended new and emerging technology to realization, e.g., full and successful implementation. Marketing, educating, networking and inspiring others to embrace new technologies are a core part of achieving this technology plan.   As a result, this effort will continue throughout the life cycle, but since its importance is most apparent following the evaluation phase, it is critical to gain adequate high level support to ensure that full adoption and implementation is achieved. Technology advocates/champions, stakeholders, and managers must be proactive in overcoming organizational resistance to a new technology, applications and/or process.

6. **Transfer –** Transfer knowledge and responsibility to those who will ultimately develop and use operational system/processes. In most cases, the only way technology transfer/implementation initiatives succeed is as knowledge transfer through people — that is, having knowledgeable staff work alongside those who need to learn the skills. The aim is to help create and support self-sufficient project teams with a high likelihood of success, and then to move on to another initiative.

Technology Roadmapping – A *Technology Roadmapping* process is critical since technology acquisition decisions are seldom straight forward.   When considering new and emerging technology, it is often unclear as to which alternative to pursue, how quickly the technology is needed, or when there is a need to coordinate the development of multiple technologies.   The *Technology Roadmapping* process will consist of three phases — preliminary activity, development of the technology roadmap, and follow-up activity.

1. Preliminary activity will include:
   - Clarifying of essential conditions.
   - Providing leadership/sponsorship.
   - Defining the scope and boundaries for the technology roadmap.
2. Development of the roadmap will include:
   - Identification of the "products and/or initiatives" that will be the focus of the roadmap.
   - Articulation of the critical system requirements and their targets.
   - Specifications for the major technology areas.
   - Identification of the technology drivers and their targets.
   - Identification of technology alternatives and their time lines.
   - Recommendations clarifying the technology alternatives that should be pursued.
   - Creation of an interim technology roadmap report.
3. Follow-up activity to ratify the report and determine final outcomes includes:

- Critique and validation of the roadmap.
- Development of an implementation plan when appropriate.
- Review and update.

Creating this Strategic Technology Plan, the recommended planning process, and a process for prioritizing potentially high-impact emerging technologies will enable the College to remain competitive and sustain its innovative and creative programs.   Experience has demonstrated that time and time again, early adoption of emerging technologies gives an academic institution a significant competitive edge. As a result, Coastline, like many of its competitors needs to embrace a formal procedure that paves the way for the introduction and implementation of new technologies.   This is crucial not only to remain on the leading edge, but because technology finds its way into the classroom and/or workplace, with or without planning.   If the College follows a reactive, *as needed* approach in adopting new technologies, it runs the risk of making costly, narrowly defined and unsupported decisions, rather than tactical decisions that align with the District's and College's strategic strategy and goals.   Benefits Coastline will achieve by following a planned approach to adopting new technologies include:

1. **Strategic Opportunities –** Identifies strategic opportunities that combine technology *push* and demand *pull*.
2. **Prioritizing Options** – Analysis of alternative options, which ensures a process of more informed decision-making when selection of technologies is most likely to have a major positive impact on teaching and learning and overall operational effectiveness.
3. **Synchronized Decision-Making –** Coordinating all activities related to emerging technology across the College, enabling faculty, staff and departments to build on successes and avoid redundancies.
4. **Risk Assessment –** Educating staff to become skilled in the risk management associated with introducing new technologies, including stopping initiatives.

The Strategic Technology Plan Development Process Cycle will ultimately consist of *seven* steps followed by implementation and evaluation.   However, since this is the inauguration of a new planning process additional *pre* and *post* development activities will be required.   This is necessary to synchronize this new process with past practices and currently available information. The steps of the process are described in the following.   A timeline for launching the planning cycle and process is illustrated in figure 3 (displayed on page 15) and a model of the process is illustrated in figure 4 (displayed on page 16).

1. **PHASE 1 – Align Goals & Strategies** — The *first phase* of the new <u>*Strategic Technology Plan Development Process*</u> is alignment of Coastline College's strategic goals and initiatives with the District's *Vision 2020* goals, the state's student success agenda, and ultimately the goals of the National Strategic Technology Plan.   Out of this alignment, key strategic indicators and drivers will emerge.   These will serve as the structural foundation of the plan.
2. **PHASE 2 – Gather Data** — In *phase two*, a comprehensive inventory of all internal technologies and systems will be developed.   This information will serve as a master resource repository for future comparative assessment and analysis.
3. **PHASE 3 – Examine Internal & External Issues** — *Phase three* will consist of an external assessment of academic institutions recognized as leaders (e.g., winners of key nationally significant awards, grants, peer recognition, etc.) in the adoption and use of innovative technologies in an academic setting as well as a literature review of new and emerging technologies.   *Exemplary practices* and potential opportunities will be the key outcome of this assessment process.   This information will serve as a benchmark indicating both opportunities (future directions for investment) and threats the College faces.   A secondary, but critical part of this phase will be an assessment of internal unmet technology needs identified by departments and shared governance groups.
4. **PHASE 4 – Develop & Recommend Strategies** — *Phase four* will identify – (1) gaps between CCC and its peers, (2) gaps between where CCC is now and where it wants to be (e.g., unmet needs), and (3) opportunities for technology investment.   Based on this information desired goals and/or initiatives to achieve them will be identified/developed.

5. **PHASE 5 – Recommend Roadmaps/Action Plans** ─ *Phase five* will be the development of emerging technology roadmaps based on specific strategies identified.   For each identified technology goal and/or initiative a roadmap to success will be developed.   Each roadmap will assess and identify (1) required financial resources including acquisition, implementation, training and maintenance, (2) staff competencies necessary to implement and sustain recommended new technology/systems, and (3) facilities and/or infrastructure changes needed to accommodate and support new systems/technologies.   As part of this phase, based on identified needs, a gaps analysis will be necessary to resolve discrepancies and/or potential barriers to successful implementation.   In addition, identification of the steps and/or resources necessary to eliminate these barriers and ensure sustained long-term success is critical.

6. **PHASE 6 – Update Strategic Technology Plan Overview** ─ A complete Strategic Technology Plan will be compiled and distributed at the end of each three year cycle.   The plan will include an overview of all accomplishment and milestones completed and planned including problems encountered, benefits derived, costs incurred, saving and/or efficiencies realized.   Key goals, performance indicators, and strategic drivers and objectives for the next planning period will be articulated.   Most importantly, any adjustments to the technology planning processes will be documented and ratified via the shared governance process.

7. **PHASE 7 – Measure Success/Restart Process** ─ In *phase seven* key indicators that will demonstrate success or failure of implemented goals and/or initiatives will be identified and tested to the degree possible.

8. *PHASE 8 – Implementation & Evaluation* ─ *Phase seven* is <u>not</u> part of the planning model per se. Nevertheless, results of implementation and evaluation will have everything to do with future and ongoing technology planning and assessment.   As such, based on success or failure of implementation initiatives and new challenges, the process will continually recycle and refresh.
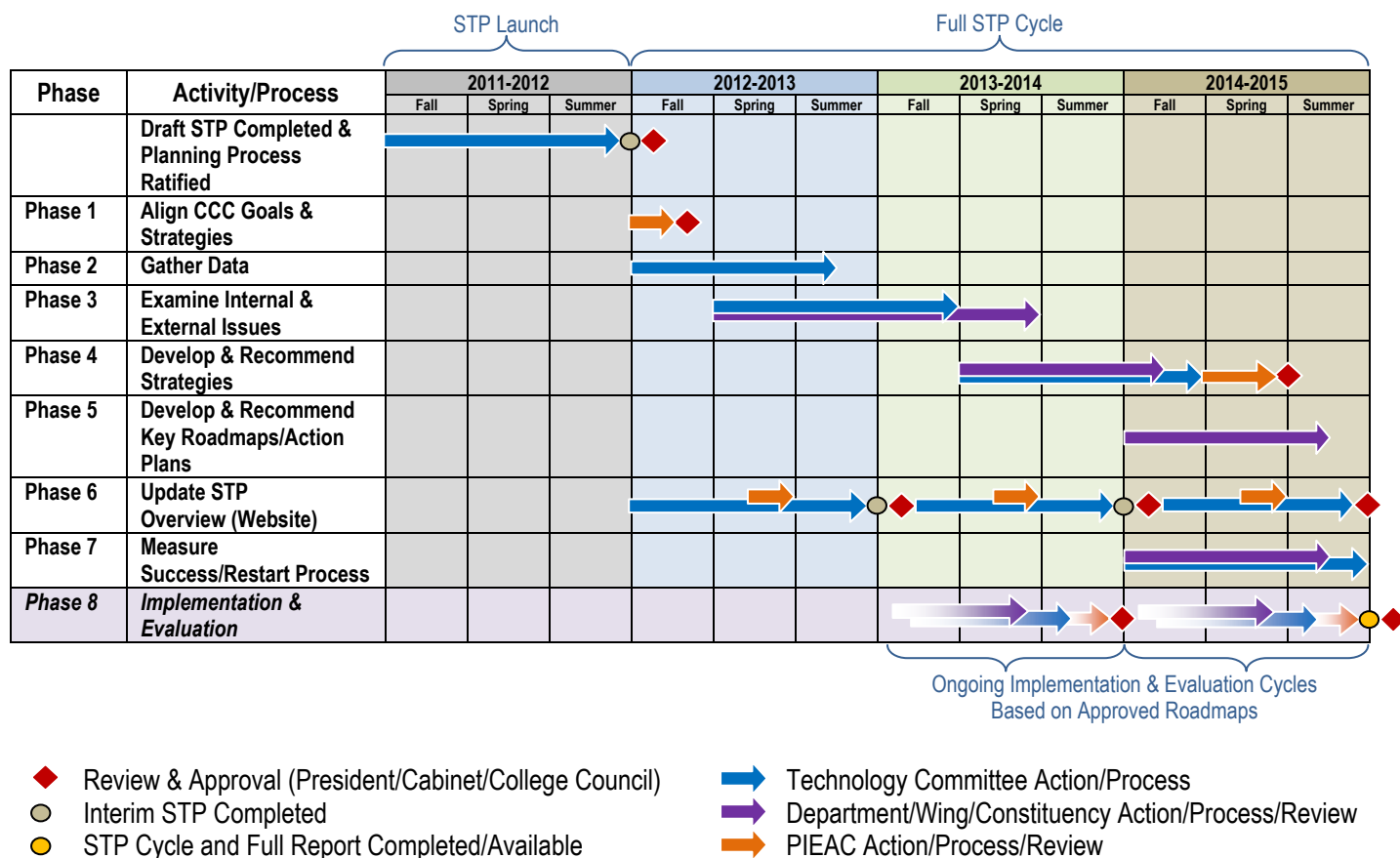
Figure 3 – Strategic Technology Planning (STP) & Approval Cycle
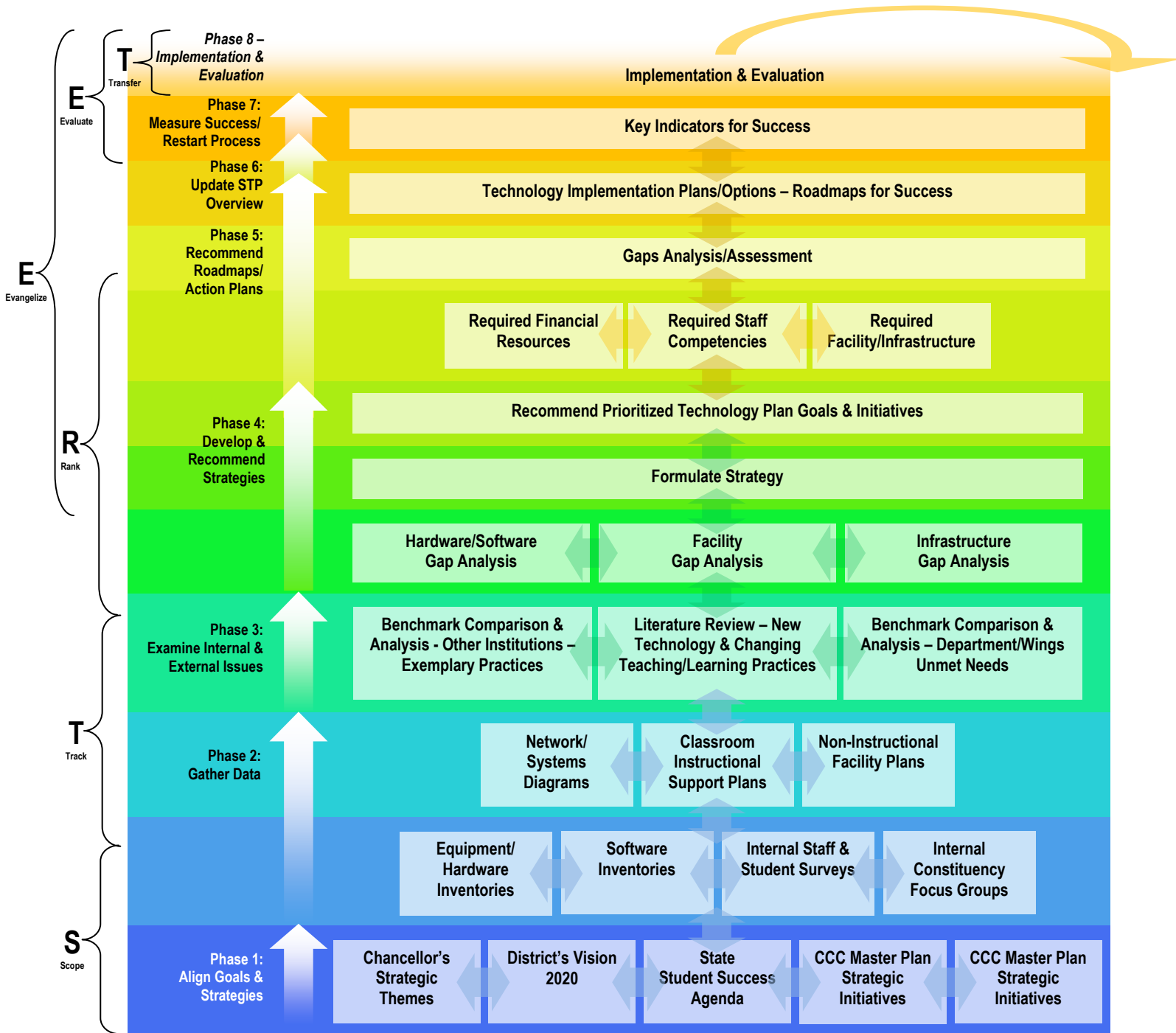
Figure 4 – Strategic Technology Planning Model - Phases

Since completion of the planning cycle as envisioned has not taken place a preliminary plan with goals and initiatives based on past (technology visioning) department budget requests, literature reviews, and preliminary benchmarking assessments is provided herein to launch the process.   This preliminary plan is not intended as a substitute for the full planning process, but as a starting point to challenge and engage departments, constituencies, and knowledge leaders throughout the College to participate in the process.   Moreover, this preliminary plan will serve as a notice that change is inevitable, with or without planning and participation of key knowledge leaders.   Technology, competitors, and students are changing and so must the college to remain relevant.

Design/Layout of the Plan

The Strategic Technology Plan is divided into three principle sections.   Each of these sections is highly interrelated in that each provides guidance for the sections below and support for the sections above. The first section, Strategic Technology Planning provides an overview of the planning process and a mapping from District and College master plans to this Strategic Technology Plan. The second section, Strategic Planning Environment reviews the internal and externals factors impacting strategic planning and implementations.   The third section, Strategic Technology Plan Initiatives details the goals and objectives identified that directly support the College's strategic Mission and Vision. Each strategic technology goal is listed within the Strategic Area where it will have the most impact; however, all will impact and support more than one area.

Survey Results

In 2011 the Technology Committee conducted a survey of all constituencies including Students, Full and Part Time Instructors, Managers, and Classified Staff at Coastline Community College.   A total of 790 responses were received from students (14% of students asked to respond), 90 from faculty (21% of faculty asked to respond), 20 from management (67% of managers asked to respond), and 68 classified staff (77% of classified staff asked to respond). A comparison of those who teach in the classroom and those who do not indicates that only 18% of Instructors teach exclusively in the classroom.   Whereas, responses from students indicated that 50% of students take some or all of their classes online.   When students where asked, "How tech-savvy are you with computers and other technology?," 39% indicated that they are power users, 57% felt they were competent, and only 4% indicated they barely get by.   To see the entire survey refer to *Appendix II*.

Ongoing Development Review & Development

Recognizing that this plan and the related processes will result in a living *strategic technology* repository, planning framework, and roadmap process (e.g., process for collection, analysis, monitoring, and implementation of technology) this document (the plan) is at best a cursory *snap-shot* of the state-of-technology (regarding where we are and where we want to go).   It is not an end-goal to be achieved and then restarted and accomplished again and again. Rather, it is an ongoing process that needs to be constantly reviewed, validated, and refreshed.   The plan is designed to be a growing repository of knowledge, a repository that becomes increasingly important in proactively planning and implementing new systems. To that end, key in this process is the establishment of a website and/or technology dashboard and portal, where the Technology Committee and interested constituencies will continually publish, update, report, and discuss all things regarding technology planning, acquisition, achievement, training, goals, initiatives, etc. The intent is to create a shared resource, or window on technology, for the college regarding technology improvement. Moreover, since the site will be designed to encourage collaboration and feedback, the desire is to involve all willing participants in the planning process, and support the culture of strategic technology planning and innovation for which Coastline is known.

This *Strategic Technology Plan* will be available for ongoing review and comment via the College Strategic Technology Plan development website (http://technology.coastlinelive.com).   Subsequent reviews and forums to update, refine, and expand the document are part and parcel of the overall plan and processes presented herein. Ongoing open forums and collaborative opportunities to be part of the development process will be publicized through email and the college website to all constituencies.   Transparency and broad collaboration is desired to discuss new concepts and themes and incorporate new concepts and recommendation.

The ongoing principles that will be employed to continually develop and sustain this technology development process follow:

- o **Communicate** – Communicate though multiple channels
- o **Compare** – Examine gaps between internal and exemplary practices
- o **Data Driven** – Constantly measure, re-measure and improve
- o **Explore** – Surveillance of new and emerging technologies and/or completive outliers is critical
- o **Innovate** – Look for opportunities to leverage new and emerging technologies, systems, and/or practices
- o **Responsive** – Provide proactive and timely solutions/services
- o **Seek Consensus** – Consider all internal and external stakeholders
- o **Share** – Building on success is efficient for Coastline and others
- o **Transparency** – Provide open and honest process

Technology Vision

Coastline is a recognized leader in the design, development, and use of innovative technology-based teaching and learning practices, processes, and systems for anytime anywhere learning to achieve and sustain outstanding student success.

Technology Mission

Coastline uses technology in innovative and creative ways to enhance the learning environment and success of traditional and nontraditional students anytime anywhere while providing state-of-the-art support and services to faculty and staff. Coastline is a leader and champion of continuous evaluation and testing of new and emerging technology and is willing to rapidly transform programs, processes, and practices to improve student success through the innovation and application of new technology.

Aligning Technology Goals

In 2011, the Coast Community College District (CCCD) completed the development of a ten-year vision and five-year master plan entitled the *Vision 2020 – Educational Master Plan*. This plan is intended to be an overarching framework for the District. It seeks to promote the success of students while maintaining the vitality of the colleges in the District. This in turn, was the basis for the concurrent development of Coastline's *2011-2017 Education Master Plan*, which followed Coastline's 2008-2011 Master Plan. In the new CCC plan, the District's strategic themes (goals) were used as a framework for developing the College's goals, initiatives, and key performance indicators.

The District's *Strategic Themes* are:

1. *Student Success* **–** Promote student success through personal, career and academic development.
2. *Basic Skills* **–** Ensure that students have or are helped to acquire adequate levels of math, language and other skills necessary to be successful in programs offered by the Coast Colleges.
3. *Science, Technology, Engineering, Mathematics, and Medicine* **–** Promote student success in STEM²-related fields by collaborating to create an overall integrated strategy in support of enhanced STEM²-related certificates and degrees.
4. *Career and Technical Education* **–** Perform a leadership role in developing the region's workforce of the future.
5. *Global/International Education* **–** Join forces and collectively become one of the nation's community college leaders in promoting Global/International Education.
6. *Diversity* **–** Encourage and support diversity—social, ethnic, racial, talent and economic—and recruit and enlist qualified faculty and staff who will contribute diversity based on their personal and employment experience.

Coastline's 2011-2017 Education Master Plan goals are:

1. Coastline will make learner success its core focus.
2. Coastline will increase student access, and improve persistence, retention, and completion with a particular focus on basic skills.
3. Coastline will continue to create and nurture innovative programs, services and technology solutions that respond to the needs and expectations of its learning community.
4. Coastline will strengthen and expand its entrepreneurial, grant development and collaborative activities through partnerships with business and industry, government agencies, educational institutions, and the public to enhance the college's capabilities and opportunities for students.
5. Utilizing participatory governance processes, Coastline will improve its collection, analysis and use of data to enhance teaching, learning and institutional effectiveness.
6. Coastline will purposefully advance and sustain the college's capacity for student success through the efficient use of resources, as well as expanded, diverse and responsive programs and services.

From the six goals noted above, Coastline identified the following five _Strategic Initiatives_ as priorities for implementation to meet the Educational Master Plan Goals.

Coastline's Strategic Initiatives, based on Education Master Plan Goals for 2011-2017 are:

1. **Enrollment Management Initiative –** CCC will develop and implement a mission-focused, comprehensive, and integrated enrollment management plan that facilitates student success.
2. **High Quality Course, Programs, and Services Initiative –** CCC will expand, implement, and assess the Quality Rubric for all on-line and face to face classes, student support services, and programs.
3. **Integrated Planning Initiative** _(including the use of evidence-informed decision making)_ – CCC will implement, assess, and modify accordingly, the revised Planning and Institutional framework.
4. **Innovation Initiative –** CCC will develop and implement new innovations to support teaching, learning, and College operations.
5. **Entrepreneurship Initiative –** CCC will expand entrepreneurial efforts to augment general fund budget and support programs/services for students, professional development for faculty/staff, and fund new innovations.

The following table (Table 1) illustrates an alignment of these _themes_, _goals_, and _initiatives_.   As a result, it is clear that many of the concepts are broad and multiple linkages are possible.   In contrast, others are so specific that few things apply.   The chart below clearly indicates that the College's strategic initiatives will serve as drivers for higher level themes and goals.

District Strategic Themes	Coastline Education Master Plan Goals	Coastline Strategic Initiatives
1. Student Success	1. Learner success core focus 5. Improve collection, analysis and use of data to enhance teaching and institutional effectiveness 6. Sustain the capacity for students through efficient use of resources	1. Enrollment Management 2. High Quality Course, Programs, and Services 3. Integrated Planning 4. Innovation
2. Basic Skills	2. Increase student access; focus on basic skills	1. Enrollment Management 2. High Quality Courses, Programs, and Services 4. Innovation
3. Science, Technology, Engineering, Mathematics, and Medicine	3. Create and nurture innovative programs	1. Enrollment Management 2. High Quality Courses, Programs, and Services 4. Innovation
4. Career and Technical Education	3. Create and nurture innovative programs 4. Expand entrepreneurial and grant activities through partnerships	1. Enrollment Management 2. High Quality Courses, Programs, and Services 4. Innovation 5. Entrepreneurship
5. Global/International Education	4. Expand entrepreneurial and grant activities through partnerships	1. Enrollment Management 4. Innovation 5. Entrepreneurship
6. Diversity	2. Increase student access; focus on basic skills	1. Enrollment Management 3. Integrated Planning

Table 1 – Alignment of District's Strategic Themes with Coastline's *Master Plan* Goals & Strategic Initiatives

State Issues - Following are critical factors identified by the *Student Success Task Force* in its report *Advancing Student Success in California Community Colleges:*

- **Basic Skills** (improve the education of basic skills students)
- **Student Success Initiatives** (incentivize successful student behaviors; strengthen support for entering students; and, revitalize and re-envision professional development)
- **Certificate/Degree** (increase College and Career Readiness)
- **Transfer (**align course offerings to meet student needs and develop and support a longitudinal student record system)

District Issues - District's key issues are addressed in the themes set forward in its *Vision 2020 – Educational Master Plan. Nevertheless two* overarching issues are center stage – (1) the statewide *student success agenda* and (2) the ongoing *budget crisis* impacting education at all levels in California. Both issues are having profound and lasting impact on the college and its students.

National Issues - Following are critical factors identified by the U.S. Department of Education in its *National Education Plan 2010 – Transforming American Education – Learning Powered by Technology* which calls for applying the advanced technologies used in our daily lives (professional and personal) to education at all levels to improve student learning through acceleration, scaling of effective practices, and adoption and application of data-driven decision making for continuous improvement. It presents five goals with recommendations for schools, districts, states, and other stakeholders to embrace. Each goal addresses one of the five essential components of *learning powered by technology* – Learning, Assessment, Teaching, Infrastructure, and Productivity. One additional goal and/or issues consistent with the committee's vision was discussed in the plan and will be included in our factors, e.g., R&D – Innovation and Scaling.

National Education Technology Plan 2010 – Goals

1. **Learning – Engage and Empower** – Leveraging state-of-the-art technologies to empowering learning experiences for all learners by focusing on what and how we teach to match what people need to know, how they learn, where and when they will learn, and who needs to learn.
2. **Assessment – Measure What Matters** – Establish new and better ways to measure what matters when

there is still time to improve student performance
3. **Teaching – Prepare and Connect** – Leveraging technology to help build the capacity of instructors and support staff to shift to an environment/practice of connected teaching.
4. **Infrastructure – Access and Enable** – Establish comprehensive infrastructure for learning that provides every student and educator and level of the College with the resources needed when and where they are needed.
5. **Productivity – Redesign and Transform** – Continuously rethink assumptions and redesign systems and processes to improve teaching and learning, productivity, and infrastructure.
6. **R&D – Innovate and Scale** – Develop and/or ensure equitable access to innovative technology-based teaching and learning systems/infrastructure and processes that provide effective learning experiences and assessments for all students.

The following table illustrates an alignment of National and State goals with *Coastline initiatives*.   Once again, it is clear that many of the concepts are broad and multiple linkages are possible.   In fact, it would not be difficult to draw a uniform linage among all elements with the exception of "*Entrepreneurship*," since the state has numerous restrictive regulations.

National Education Technology Plan	California *Student Success Task Force – Critical Factors*	Coastline Strategic Initiatives
1. Learning – Engage and Empower	1. Basic Skills 2. Student Success Initiatives 3. Certificate/Degree 4. Transfer	1. Enrollment Management 2. High Quality Courses, Programs, and Services 3. Integrated Planning 4. Innovation
2. Assessment – Measure What Matters	1. Basic Skills 2. Student Success Initiatives 3. Certificate/Degree 4. Transfer	1. Enrollment Management 2. High Quality Courses, Programs, and Services 3. Integrated Planning 4. Innovation
3. Teaching – Prepare and Connect	1. Basic Skills 2. Student Success Initiatives 3. Certificate/Degree 4. Transfer	1. Enrollment Management 2. High Quality Courses, Programs, and Services 4. Innovation
4. Infrastructure – Access and Enable	1. Basic Skills 2. Student Success Initiatives 3. Certificate/Degree 4. Transfer	1. Enrollment Management 2. High Quality Courses, Programs, and Services 3. Integrated Planning 4. Innovation 5. Entrepreneurship
5. Productivity – Redesign and Transform	1. Basic Skills 2. Student Success Initiatives 3. Certificate/Degree 4. Transfer	1. Enrollment Management 2. High Quality Courses, Programs, and Services 3. Integrated Planning 4. Innovation 5. Entrepreneurship
6. R&D – Innovate and Scale	1. Basic Skills 2. Student Success Initiatives 3. Certificate/Degree 4. Transfer	1. Enrollment Management 2. High Quality Courses, Programs, and Services 3. Integrated Planning 4. Innovation 5. Entrepreneurship

Table 2 – Alignment of the National Education Technology Plan *Strategic Issues*, California Student Success Task Force *Critical Factors* with Coastline's Strategic Initiatives

Based on the committees review and conceptual compatibility of the *STREET Planning Steps,* the College's *Strategic Technology Plan goals* will be structured in accordance with the following key drivers derived from various national, state, and college planning documents:
1. Innovation & Productivity
2. Teaching & Learning
3. Infrastructure & Operations
4. Research & Assessment
5. Entrepreneurship & Monetization

Section II – Strategic Planning Consideration

Assumptions

Numerous assumptions were necessary for the creation of this strategic plan.   Even though some or all may ultimately miss the mark, it is critical to have a rationale to move forward.   To do less would stagnate progress toward development and implementation of any strategic technology plan now or in the future.   These assumptions represent an attempt to predict the future of technology and academia and the changing global environment.   They are based on projections by recognized futurists, technology research firms/organizations, and recognized best practices trends.   These assumptions also establish a context and starting point for future planning.   Finally, they offer readers of this plan added perspective in understanding organizational and environmental challenges and insight into why particular approaches were selected over alternatives.

Budget Environment

New and emerging technologies offering exciting capabilities are increasing pressure on technology budgets in colleges nationwide.   Unfortunately, this is at a time when the overall college budget (state-wide and nationally) is shrinking and all departments are being challenged to do more and more with less.   Hard choices are necessary to analyze needs and prioritize key initiatives.   As a result, all options to control costs and/or generate revenue must be exploited.

Many institutions are starting to adopt practices from private enterprises, such as strategic planning that integrates technology as a key component.   Cloud computing and virtualizations are approaches that can lower L&IT costs and are a key topic of interest among most institutions.   Colleges are also developing long-term financial strategies to ensure that technology is incorporated into the budget.   Leasing equipment is becoming more and more common as a way to manage L&IT costs.   Leasing is being used effectively to ensure that the allocation of funds for new technology and upgrades is consistent.   Implementation of Green L&IT initiatives for the College may also help reduce costs and minimize the College's impact on the environment.

Military and Contract Education will continue to offer the College some financial flexibility.   New opportunities resulting from international education, state rule changes, and collaborative learning initiatives may offer additional opinions for revenue generation in the future.   Seaport commercialization and Coast Learning Systems courses will continue to be a potential source of revenue, but this needs to expand.

Evaluating core technology efficiencies through TCO/ROI analysis is a key factor in planning—particularly in the areas of security, storage, communications, and ERP systems.

Funding

While this Technology Plan establishes many goals and objectives, it is understood that successful outcomes are contingent upon the availability of appropriate funding and staffing levels.   Matching needs with resources is an essential component of any plan.

Funding for initiatives and projects identified in this Plan will come from a wide range of sources, including the district (general funds), state (one-time initiatives), CCC special project funding, federal and state grants, and the College's end-of-year resources.   Even though this funding is considerable, based on history and need, there is an expectation that need will continue to outpace resources.   In addition, since this is a multi-year plan, initiatives and related expenditures will be proposed over the next five years.   Unfortunately, it will be difficult in most cases to commit to multi-year resources since this would limit the college's options at a time when the budget is shrinking.

This creates a challenge since one of the key expenditures requested each year is funding for replacement of equipment used by students and faculty in computer and science labs.   Despite severe limitations over the last three years significant expenditure have been made to upgrade and sustain teaching and learning technology.

Each year a detailed Technology Expenditure Plan with recommendations from various wings and departments, and the Technology Committee and Distance Learning Committee is finalized and submitted to the Planning Committee for review and approval.   Once the plan is approved and components prioritized the Budget Committee will evaluate funding options.

Learning and Information Technology

Technology systems, practices, tools, and processes are changing rapidly; in fact, change is certain but progress is not, so adapting to and supporting new technologies will pose a management challenge for the traditional L&IT paradigm.   It is also critical to understand that *consumer choice* and/or *preference* in selection and implementation technology is a key driver for success.   This creates a dilemma for many technologists, since the best products, *technologically*, are not always the best fit or choice for an organization.   This cannot be stressed enough!   It is frequently validated in research, practice, and the consumer world.   Most visible among the numerous challenges we face is the transformation necessary to adapt to mobile technologies and social networking (which are increasingly complementary).   As costs and features continue to surpass a desirable threshold consumer choice is driving change.   Mobile and wireless computing is growing and will eventually displace many desktop computers. Suffice it to say, supporting a reliable and available network infrastructure for mobile access is suddenly mission critical.   As such, both wired and wireless network access is viewed as a basic utility like the telephone and electricity. It is expected to be accessible and available from anywhere at all times.   Any downtime is unacceptable. This always-on view of the network is most visible in convergence of network and voice communications.

Traditional telephone and collaboration technologies are becoming highly integrated and dependent on network availability and stability.   Virtualization, grid, and cloud-based computing have the potential to create the same level of ubiquity within the computing infrastructure as the network. These technologies help to define a clear separation between the services delivered and the physical infrastructure used to deliver them.   In fact, the separation between service and infrastructure is the primary distinguishing characteristic of the Software as a Service (SaaS) movement.   As the market continues to mature, adapt, and become more targeted, many non-strategic in-house applications will have cost-effective SaaS alternatives beneficial to the College.   In order to reap these benefits, the College must adopt recommended industry standards where appropriate.   It will be incumbent on L&IT to recommend which services provide strategic advantages.

The physical safety of college campuses has always been a top priority for schools, but the prevalence in recent years of being always on has compelled educational institutions to make security a top IT issue.   Ensuring and improving physical safety, protecting student records and key campus data, providing asset tracking, increasing disaster recovery, and adding more security services to the network is critical.

Organizational Structure

Consolidation of Instructional Systems Development and Information Technology at Coastline into the Office of Learning and Information Technologies offers a unique opportunity for Coastline to improve services in a wide range of areas.   At present, the responsibility for managing technology is divided between a centralized district IT organization and L&IT organizations at each college (Coastline, Golden West, and Orange Coast) in the district. This arrangement has led to some redundancies/duplication (e-mail) and divergence of services (LMS, resource sharing) offered by each college to students and staff.   Nevertheless, there is a strong degree of coordination regarding core business functions, e.g., ERP systems (registration, HR, and Finance), telephony, and internet/network connectivity.   Each of the colleges also manage Learning Technology support and services differently (e.g., course development and support, media services, instructional design, software development and training, web support and services, and

Learning Management Systems support).   Currently, reorganization of IT services is being evaluated by the district. Consolidation of some IT services and activities is anticipated to reduce infrastructure redundancies, improve efficiencies, and leverage limited resources.   Limited resources (staffing and budget) will continue to require Coastline to make some difficult choices in that funding has never been adequate to establish a dependable replacement cycle for all technology and related systems.   Administrative technology and instructional support areas have been impacted the most.   Many areas have computer systems well past a normal replacement age.   In contrast, classroom and labs have remained reasonably current.   Over the last three years outsourcing has been viewed as an increasingly viable option when applied properly.   It has enabled the College to focus on core competencies thereby enabling employees to concentrate efforts on tasks of strategic value.   OL&IT recognizes that the growing adoption of the *Information Technology Infrastructure Library* (ITIL), e.g., best practice for IT Service Management, as a standard for IT Governance is a trend that many states and higher education institutions will increasingly embrace.   Therefore, it will be beneficial for OL&IT to develop an ITIL-aligned organizational structure with clearly defined processes that embrace ITIL.   Depending on the outcome of District consolidation initiatives this should be embraced as a key priority.

Regardless of what is decided, it's critical for Coastline's OL&IT to demonstrate an understanding of the business and academic needs of the institution, and provide alignment and support of the mission, vision, and strategic goals.   As such, OL&IT must become a strategic business partner, and demonstrate measurable value to justify ongoing cost to the college and all of its departments.   To accomplish this goal it needs to move from being a management organization into a service delivery organization.   Through this transformation, it must adopt a user-centric approach in the development and delivery of services.   It must establish a strong bias towards customer satisfaction that includes both quantitative and qualitative metrics.   This is critical to ensuring that information and learning technologies are effective in supporting the College's ongoing transformation and providing needed support.

Students

Today's students are no longer the people our educational system was designed to teach. They think and process information fundamentally differently from their predecessors and most importantly, the content and practices of the past are out of sync with the needs of this new generation.   This new generation of students has a different approach to learning, collaboration, and technology.   They are the first to adopt new technologies and expect to find an infrastructure capable of supporting this technology when they attend college.   Moreover, they expect their instructors and the college to use this technology for all teaching and student support services.

The rapid and persistent advances in technologies and changing social perspectives have also blurred the lines between traditional classroom and social learning creating an open and blended ambient learning environment that is anywhere anytime all of the time.   Traditional face-to-face lecture-based (unidirectional/one-to-many) delivery methodologies are being increasingly replaced and/or dramatically changed as a result of social networking, virtual worlds, simulations, serious games, and other collaborative mobile and/or cloud-based technologies.   Since these new students are always *connected* and/or *multitasking* wherever they go, they will have, and will continue to have, a growing expectation for high-quality synchronous and asynchronous services and support delivered directly to their personal mobile devices.   Nevertheless, all students (digital divide or generation-gap) will not have the required resources, so they will continue to expect access to high quality and high speed college-owned devices.   Still, a growing majority will expect to use their mobile device as their primary connection to the college's systems.

The education process continues to evolve from one-to-many (teacher to class) to collaborative learning (many to many and simultaneously one-to-one). Web 2.0 and social networking tools such as blogs and wikis, and online social gathering websites such as *Facebook*, are enhancing and facilitating new collaborative learning methodologies being used on progressive campuses today. The delivery of content has also evolved dramatically, as more and more instructors post class materials, including audio and/or video recordings of lectures, on YouTube, iTunes, or college portals/LMS.   Because students spend a large amount of time online, posting academic materials where students can download and interact with it in a location where they also seek entertainment and social interaction only makes sense.

Open source course-management systems such as Moodle and Sakai as well as a wide range of proprietary systems are being used to distribute more content and facilitate student collaboration.

The need to provide ubiquitous full connectivity to students anytime anywhere in supporting the social collaboration and learning paradigm and new business practices and process will remain a critical factor.   All of these changes will impact the future of teaching and learning both inside and outside the classroom. Virtual instructional delivery methodologies in the future will rely heavily on technology and virtualization.   In fact, future learning environments, will most likely increasingly become hybrid and/or online.   Immersive, mobile, collaborative, and semantic technologies and methodologies, such as virtual worlds, simulations, serious games, augmented reality, video-telepresence, instant response, lecture capture, video/audio-bookmarking, e-books/e-readers, knowledge-banks, and social networking/learning will change traditional teaching and learning in favor of anytime anywhere on-demand or facilitated learning.   Supporting the new social learning paradigm, the College will need to leverage information from a variety of sources. In an anytime learning environment, computing systems must be pervasive, understanding present and historical context, location, and student preferences to proactively support student needs and communicate appropriately.   These changes will dramatically improve learning options; nevertheless they will present new challenges.

As computing systems become more pervasive the sensitivity of the information contained within them greatly increases.   This is both a benefit and a challenge.   Maintenance and protection of personal privacy information presents a major risk and security challenge for the college and district.   This issue is not unique to education and many laws, policies, and processes exist to mitigate this challenge.   On the plus side, the ability to establish indicators of performance, progress, and success provides new opportunities for instructors, counselors, researchers, and instructional designers to work together to develop and improve systems and practices to ensure student success.

Higher-education content and entertainment long combined and offered as "edutainment" on television to a small but persistent audience has gone main stream.   They first took place on YouTube and iTunes where sites originally perceived as entertainment changed the games when users stated sharing content for learning and entertainment globally.   Today, savvy students, instructors, and colleges as well as business and government agencies are posting video and/or audio files that contain content with both educational and entertainment value creating an engaging learning environment open to virtually anyone. Computer gaming and virtual worlds are other emerging teaching and learning environments that many colleges have embraced.   Second Life, an interactive 3-d virtual world, offers an environment capable of supporting both synchronous and asynchronous collaboration for socializing, teaching, learning, and branding.

New Learning Paradigms

The knowledge worker of the 21st century can no longer rely on the way learning was delivered in the 20th century or the previous thousand years.   In fact, traditional education has seen few innovations since the inception of universities and schools.   Rapid scientific and technological innovation and change, growing in scope and speed over the past fifty years, has had a profound effect on learning needs, styles, and opportunities.   As a direct result, degrees are unlikely to last a career, ongoing training and retraining has become essential.   Many students may be preparing for technologies and practices (jobs) that do not exist, and more and more people need to work longer.

It's clear that learning can no longer be divided into a place and time to acquire knowledge (school) and a place and time to apply the knowledge acquired (the workplace).   Instead, learning has become more than ever a continuum or cycle of school, on-the-job-experience, training, and social experiences in an iterative fashion through interactions with others around the world.   To address the needs and challenges of lifelong learning, colleges must find ever new and innovative ways to use technology to provide learning by enabling and enhancing student success through speed, flexibility and individualization.   In a mediated-technology-based lifelong learning environment, digital literacy has become the critical prerequisites for access and participation. This is especially important for age groups who may not have grown up with information technology *(the digital immigrants)* as opposed to the younger generations *(the digital*

natives).

Increasingly, colleges are taking steps to enhance technical literacy and create a culture that encourages faculty to use computers, smart devices, and other innovative tools in their curricula. Information literacy is another topical area. While many students may be device-savvy, they may not necessarily be information-savvy. Students today, having for the most part grown up with technology, possess more technical abilities with computers and software, yet many have not learned how to use technology for academic purposes.

Key Implications

1.   The pace of change is accelerating:
     - We are preparing students for a future no longer predicable and increasingly indescribable.
     - Today's students are no longer the people our educational system was designed to teach.   They think and process information fundamentally differently from their predecessors.
     - Long range planning more than ever before deals with the future of present decisions not future decisions.
     - Increasingly, it will be what and how students learn, not what they know that counts.
2.   National and state mandates to radically expand the number of citizens with postsecondary credentials.
3.   Competition among states to build innovation-based knowledge economies, relying on higher education as the primary provider of innovation and highly skilled human capital.
4.   Learning systems and approaches are becoming more personalized, collaborative/social, and self-organizing.
5.   Drive toward increased sophistication of technology and integrated digital solutions.
     - Common/agnostic technology platforms
     - Increasing institutional support for digital solutions
     - Students are comfortable with technology while many professors/instructors have a need for ongoing and persistent assistance with course development
6.   eLearning will increasingly depend on:
     - Distributed (Cloud) Computing
     - Enhanced Smart Mobile Technology
     - Collaborative Intelligent Filtering
     - 3-D Visualization and Interaction
7.   Rising financial pressures on institutions are being passed on to students:
     - Higher education's share of total state spending has declined significantly
     - Cost to educate a student has increased by more than 25% over the last 30 years
8.   Professors currently favor textbooks but believe digital solutions will improve learning:
     - Instructors/professors believe that increased use of technology in the classroom will be the most significant change over the next 5 years
     - Instructors/professors expect digital content to improve learning and increasingly expect:
       o   integration of online library references
       o   digital content to improve pedagogy
       o   digital content and technology to improve teaching process
     - Instructors/professors have limited access to funding for development of digital tools and content

Key Emerging Technologies:

The following table maps *key emerging technologies* predicted to impact teaching and learning in the coming years to the *Strategic Areas* identified for this plan.   Many of these issues have been discussed for many years while others have just emerged as new concepts.   Those items predicted to impact the environment in 1-year, 2-years, 3 years, 4 years, 5 years or over 6 years are marked as indicated.   Items indicated as key priority (College initiatives) are marked

with an ↑.   Items that have been <u>piloted</u> and/or <u>partially</u> implement are marked with a ♦.   Items marked with a ★ have been fully <u>implemented</u>.

Emerging Technologies/Processes	Innovation & Productivity	Teaching & Learning	Infrastructure & Operations	Research & Assessment	Entrepreneurship & Monetization
1. Ambient Web	5			5	
2. Augmented Reality	3	3			3
3. Backchannel Communication ↑		1			
4. Cloud Based ♦↑		1	1		2
5. Collaborative Learning ♦↑	1	1	1		
6. Contextual User Experience ♦	1	1			
7. Curation	4	6			
8. Electronic Books/E-books ♦↑	2	1			2
9. E-portfolios↑	1	1			
10. Game-Based Learning ♦	2	1			2
11. Gesture-Based Computing	2	1			
12. Intelligent Tutor	3	2			
13. Internet of Things	4	6	6		
14. Just-in-time learning Apps	2	2			2
15. Learning Analytics ♦↑	3	2	1	2	2
16. Learning Apps↑	2	1	1		1
17. Lecture Capture↑	1	1	2		
18. Mashups	3	1		3	
19. Mobile Apps ♦↑	1	2	1	3	2
20. OpenSource ♦↑	1	1			
21. Personal Learning Space	2	1			
22. Semantic Web	6	6	6	6	
23. Smart Systems		4	4	4	
24. Social Networks ♦	1	1	1		
25. Speech Recognition ♦	3	2			3
26. Speech to Text ♦	1	1			
27. Tablet Computing ♦↑			1	1	1
28. Telepresence	1	2	1		
29. Video-bookmarking↑	2	2			2
30. Virtual Reality/Worlds ♦	2	1			2
31. Virtualization ♦↑	2	1	1		
32. Visual Recognition	3		2	3	3

Table 3 – Strategic Technology Areas Mapped to Key Emerging Technologies

Other Significant Technologies

Technologies - Hardware Systems

- 3-D Television
- E-readers
- Flip Camcorders
- Grid Computing (concurrent application of the processing and data storage resources of many computers)

- Lecture capture & posting, automated web-based system
- Mobile Devices
- Note Taking, automated interactive web-based
- Response System/Clickers – Automated interactive response systems

Technologies – Software (category/process)

- Authoring Tools (*SoftChalk, Raptivity*, etc.)
- Blogs
- Content Management System*
- Dashboards/ Data Visualization*
- Deeplinking
- E-books
- E-portfolios

- Google Apps (cloud/web based productivity software)
- Google Earth (virtual globe, map and geographical information program)

- LMS, OpenSourse (*Moodle, Sakai…*)
- Microblogging (*Twitter*)
- Podcasting & Vodcasting
- *QR Codes* (Quick Response Code)
- Reference management software (open-source *Zotero*)
- Virtual World (*Second Life*)
- *VoiceThread* - web-based application that allows users to post and tag media with images, videos, documents, and presentations at the center of an asynchronous conversation.
- Wikis (*Wikipedia*)

Learning Practices/Process/Concepts

- Active Learning
- Backchannel Communication

- Citizen Journalism
- Collaborative Annotation
- Collaborative Editing

- Digital Storytelling
- Distributive Learning (distribute in location and/or phased learning over time)
- Google Jockeying (simultaneous searching and display in a presentation/class for resources mentioned by the presenter)
- Image Sharing (*Flickr, SlideShare*, etc.)
- Knowledge Navigation
- Learner-Centered Education
- Learning Object

- Lifelong Learning
- Live Question Tool (post and respond to questions real-time)
- Mobile Learning
- Open content
- Open Courseware (OCW) & Open Education Resources (OER)
- Open Journaling
- Personal Learning Environments

- Simulations, Interactive

- Social Networking/Community (*Facebook, Ning*)
- Social Utility (*Facebook*)
- Student Learning Outcomes (SLO)
- Technology Mediated Learning

Technology Protocol/Regulation/Law

- 508, Accessibility Regulations
- *Copyleft*
- *Creative Commons*
- IEEE Learning Object Metadata
- *IMS* Common Cartridge Specification
- *IMS* Content Packaging
- *IMS* Question & Test Interoperability

- IMS Tools Interoperability
- Intellectual Property
- Metadata terms/meta tagging (*Dublin Core*)
- RSS & RDF
- Sharable Content Object Reference Model (SCORM)
- W3C Accessibility/Bobby

Technology-based Concept/System

- Alternate Reality Games (ARG)
- Ambient Web
- Augmented Reality (Wii)
- Collaboration system, Interactive
- College Portal

- Push Content (RSS…)
- Remote Instrumentation
- Screencasting
- Self Publishing (*Lulu, Flatworld*, etc.)
- Semantic Web

- Cyber-infrastructure
- Digital Repositories/dynamic databases/Dynamic resource databases and repositories
- Distributed Computing
- Game-based learning (serious games for learning)
- Geolocation (identification of the real-world geographic location)
- Gesture Control/Gesture-based computing
- Haptics (tactile control/interaction of computers)

- Instant Messaging
- Interactive Polling, Testing, and Evaluation
- Lecture Capture
- Location-Aware Applications
- Middleware
- Multi-Touch Interfaces
- Next generation presentation tools (*Prezi, Zoho Show, Sliderocket, Google Docs Presentations*, *280 Slides,* etc.)
- Open systems

- Smart Cards
- Smart Classrooms

- Social Bookmarking
- Social Networking
- Synchronous Communication, desktop web-based (*Skype* - VoIP service)
- Telepresence
- *Ustream* - network of diverse channels providing a platform for lifecasting and live video streaming
- Video & Audio Sharing Network (*YouTube*)
- Video & Audio Streaming
- Video bookmarking
- Videoblogging
- Virtual Meetings
- Virtual Realty
- Virtualization

- *YouTube University* & *iTunes U* (allows colleges to distribute world-class educational content worldwide)

Critical Drivers

The District's Strategic Themes are key critical drivers that will determine the success or failure of the College's strategic technology plan.   The following discussion of the District's themes and potential initiatives in support of these themes will shape the College's Strategic Plan over the next five years and into the future.

Critical Driver 1 – Student Success

Promote student success through personal, career, and academic development.   Establish relevant learning outcomes, offering continual innovation in traditional and non-traditional technology-based teaching and learning methods and curriculum.   Provide equitable and convenient access to all students working to ensure ongoing support for learning and student services. This long standing practice is reinforced by systems of communication and services that embrace traditional and innovative modalities, a combination of traditional and innovative services that have proven to be essential for CCC's large Distance Learning, Military, and incarcerated student programs.

- Create real-time automated alert systems and processes to notify students, faculty, counselors, and/or administrators regarding both excelling and underperforming students.
- Deploy dynamic systems and processes to map student goals, desires, and pathways for success.
- Develop and implement comprehensive real-time systems and analytics to help monitor, track, and report student learning outcomes.
- Establish innovative traditional and non-traditional technology-based methods for students to demonstrate learning and for Coastline faculty and support staff to continuously improve systems and processes that support and sustain student learning.

Critical Driver 2 – Basic Skills

Ensure that students acquire appropriate levels of math, language, and other skills necessary to be successful in all programs.   Establishing relevant learning outcomes, offering continual innovation in application and use of technology to provide, enhance, and track student success in basic skills

- Design and develop integrated, evidence based, real-time systems to help monitor and track student learning

and success.
- Enhance student learning and success by indentifying barriers and implementing technology-based strategies and/or systems to overcome challenges faced by CCC's diverse and non-traditional students.
- Establish exemplary traditional and nontraditional technology-based systems for students to demonstrate learning and continuous improvement.
- Evaluate Freshman-Experience programs targeting Math and English completion using technology enhanced tools.
- Implement systems and processes to facilitate individualized support, such as peer mentoring, tutoring, or case management during, and after transitioning.
- Provide technology enhanced and/or supported accelerated courses/programs that provide transitional students the opportunity to quickly meet their goals.

Critical Driver 3 – Science, Technology, Engineering, Arts, Mathematics, and Medicine (STEAM²)

Promote student success in STEAM²-related fields by collaborating to create an integrated strategy in support of enhanced STEAM²-certificates and degrees.   Increase access to and quality of college-level and other accelerated coursework, as well as high-quality enrichment programs.   Foster a supportive environment that nurtures and celebrates excellence and innovation.   Academic professionals, peers, and students must work together to create a culture that expects excellence, encourages creativity, and rewards successes.
- Build bridges that help education professionals, peers, and students create a culture that expects excellence, encourages creativity, and rewards successes in STEAM².
- Demonstrate innovation in the area of technology-based open education resources to reduce costs and improve overall quality of instruction.
- Implement programs and processes to accelerate program and/or degree completion.   Recognize achievement of students completing a significant sequence of STEAM² classes.
- Increase access to and quality of college-level and accelerated coursework as well as high-quality enrichment programs. Provide multiple opportunities for students to gain actual experience, especially where the community benefits from student contributions.
- Maximize federal, state, local, and internally-developed resources to expand and/or enhance programs.
- Utilize innovative mediated-technology to offer programs online, virtually, and hybrid.

Critical Driver 4 – Career and Technical Education

Perform a leadership role in developing the region's workforce of the future.   Establish a wide range of programs specifically designed to prepare students to enter the workforce immediately upon completion. Map pathways for all programs with relevant stackable certification, Associate Degree, and Bachelor Degree for all programs.
- Advance workforce skills in priority sector for the state and/or region.
- Demonstrate innovation in the area of open education resources to reduce costs and enhance quality of instruction.
- Develop CTE programs that embrace innovations in the area of STEM² pathways.
- Engage industry partners in targeted sectors who will commit to on-going partnerships.
- Ensure innovation in connecting and integrating data among partners to ensure accountability for both workforce and teaching and learning outcomes.
- Ensure opportunities for all business and organizations, including those underrepresented in the community.
- Establish opportunities for internships, apprenticeships, and job placement.
- Implement programs and processes to accelerate program and/or degree completion.
- Maximize federal, state, local, and internally-developed resources.
- Utilize innovative mediated-technology to offer programs online, virtually, and hybrid.

Critical Driver 5 – Global/International Education

CCC's mission statement underscores its relationship to its diverse local community and the global community it serves through its various programs.   Founded as a *college without walls,* Coastline extended the classroom from day one into the community and around the world.   Reaching out through technology (e.g., first the newspapers and radio, then television and video and now on-line) CCC has developed and continues to sustain a national and global constituency. Today through innovative partnerships with private and public entities, CCC is once again leading the way in offering our students new opportunities and building relationships with new communities and new international students.

- Implement new and innovative partnerships to increase, expand, and/or sustain international teaching and learning initiatives/programs.
- Increase international student enrollment, enhance transfer experiences, and support the diverse educational pathways.
- Provide specialized programming to enhance, inform, and educate a global community.

Critical Driver 6 – Diversity

Encourage and support diversity (social, ethnic, racial, talent and economic).   Recruit and advance qualified faculty and staff who will contribute diversity initiatives based on their personal and employment experience.   The quality and diversity of our staff (faculty, administrators, and classified) must reflect the diversity of our district, county and state. This is critical for establishing and sustaining a culture rich in diversity capable of reaching out to all students and constituencies.   Ensure that training and growth opportunities are among the many benefits offered to employees at all levels.   CCC embraces this strategy to create one of the community's most diverse and favorable places to work.

- Be one of Orange County's best places to work for all social, ethnic, racial, talent and economic groups.
- Enhance student learning and success by indentifying barriers and implementing strategies to overcome challenges faced by our diverse and non-traditional students.
- Hire and retain a diverse workforce by proactively recruiting from all social, ethnic, racial, talent and economic groups.
- Provide cultural and specialized programming to enlighten and educate the community regarding CCC's sensitivity and commitment to diversity.
- Provide multiple opportunities for the College's diverse staff to gain practical experience and provide opportunities for upward mobility.

Section III – Strategic Technology Plan Initiatives

Strategic drivers are derived from strategies translated into actions to turn objectives into realities.   The College's Strategic Technology Plan *Key Drivers* are consistent with this concept and will serve as the framework for the initial plan.

Strategic Area I – Innovation & Productivity

Key Issues[1]

- Fiscal responsibility demands that students get more out of each dollar expended.
- Leveraging the power of technology to help create better and more effective processes, services, systems, and practices/ideas is crucial.
- Innovative technologies help motivate students to learn in positive ways that make a sustained, substantial, and positive influence on how they think, act, and feel.

Related Issues/Concerns

- All students use learning and information technology for recreation.
- Faculty and students believe that support for instructors will outpace many institutions' ability to provide support.
- Faculty use *static* tools in LMS, although students indicate that dynamic tools contribute most to their learning.

- Instructors' skills have the greatest positive impact on student engagement, interest, and understanding of subjects.
- Interactive features used least by faculty are among the key features that students indicated contribute most to their learning.
- Many institutions are adopting digital tools such as podcasts, blogs, wikis and virtual simulations and digital games to supplement classroom and online content, enhance collaboration and provide visual and real-world learning.
- New course-oriented software is making learning more convenient but not yielding breakthroughs in learning.

- No gender differences or major study differences exist in core technology use; however, in specialized areas, i.e., engineering, science, etc., majors possess higher skills.
- Students retain 10% of what they read but 30% of what they see; there is no surprise that students prefer graphics before text.
- Students want cutting-edge customized software that allows them to do things faster.
- Students want technology to increase customization, convenience and collaboration
- There is a disconnect between how students use technology for personal use and how they use it under the direction of a teacher.

Related Indicators[2]

National Education Technology Plan	California Community Colleges Student Success Task Force	District Strategic Themes	Coastline Strategic Initiatives

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[1] Derived in part from the *National Technology Education Plan, 2010*, U.S. Department of Education.
[2] Item numbers refer to key issue, theme, goal and/or initiative number in the specified document (See Table – 1 and 2).

1, 3, 4, 5	1, 2, 4	1, 2, 3, 6	2, 4

Benefits

- Access to distant experts and archives
- Develop learning experiences students can personalize
- Experiential, interactive and authentic learning, e.g., simulations of real-world activities
- Increased learning flexibility
- Personalized learning environments and/or tutors
- Provides alternative ways for students to stay connected
- Real-time engagement and collaboration
- Use knowledge-sharing among students
- Ways to support and design for active learning

Goals

1. **Cloud-based Computing** – Review and analyze new and emerging cloud-based computing options that will improve teaching and learning and productivity and functionality while reducing support and maintenance complexity, time, and costs.

Key Performance Indicator(s)	1. Number (#) of applications hosted in external cloud(s). 2. Dollar ($) savings from previous year due to use/implementation of cloud-based computing systems.

   a. **Cloud-based Programs & Services Needs Assessment/Analysis** – Identify, analyze, and categorize cloud-based programs and services that enrich learning, improve productivity, and/or improve efficiency of students, faculty, and staff.
   b. **Cloud-based Systems, Cost Effectiveness** – Determine cost effectiveness, usability, and sustainability over time of all new systems by comparing traditional desktop and cloud-based solutions.
   c. **Cloud-based Computing Roadmap/s** – Based on research and findings, develop strategic roadmap/s for acquisition and/or implementation (phased and/or ongoing) of cloud-based computing services.
   d. **Cloud Computing** – Implement/leverage cloud computing technologies, such as on-demand-capacity, to achieve scalability, cost efficiencies, and improved system utilization; tailor technology to business line needs through an appropriate blend of internal and external cloud platforms.

2. **Collaboration** – Evaluate, implement, and support systems and practices that enable innovative technology-based synchronous (real-time) and asynchronous collaboration in support of teaching and learning and productivity and efficiency.

Key Performance Indicator(s)	1. Number (#) of new initiatives implemented to leverage synchronous (real-time) and asynchronous collaboration in support of teaching and learning. 2. Number (#) of new initiatives implemented to leverage synchronous (real-time) and asynchronous collaboration to improve productivity and efficiency. 3. Dollar amount ($) invested in synchronous (real-time) and asynchronous collaboration technologies.

a. **Collaboration Programs & Services** – Identify, analyze, and categorize collaboration-based programs and services that enrich learning, improve productivity, and/or improve efficiency of students, faculty, and staff.
b. **Collaboration Roadmap/s** – Develop College-wide collaboration and communication roadmap wherein asynchronous and synchronous technology (systems and practices) are implemented to improve operational efficiencies, cost effectiveness, and/or student success.
c. **Tools, Communication & Collaboration** – Continually investigate new ways to use communication and collaboration tools to improve instructional technology and/or to more effectively deliver mediated learning resources/systems.
d. **Desktop Sharing/White boarding** – Implement technologies and products that allow remote sharing and collaboration thereby enabling individuals at diverse locations to actively participate in collaborative discussions as if they were all in the same conference room or classroom.

3. **Communication, Enhance** – Increase teaching and learning communications using emerging web, mobile, other innovative technologies inside and outside the classroom.

Key Performance Indicator(s)	1. Percent (%) of classes/sections using new and/or emerging communication technologies. 2. Number (#) of faculty adopting new and/or emerging communication technologies. 3. Percent (%) of classroom-based courses offering mobile access to learning resources, notes, lectures, etc. 4. Percent (%) of distance learning courses offering mobile access to learning resources, notes, lectures, etc.

a. **Communication Technologies & Processes** – Identify, analyze, and categorize new and emerging communications technologies and/or processes that enrich learning, improve productivity, and/or improve efficiency of students, faculty, and staff.
b. **Communication Technologies Roadmap/s** – Develop roadmap to implement and/or leverage new and emerging communications technologies and/or processes to improve operational efficiencies, cost effectiveness, and/or student success.
c. **Connectivity** – Investigate and deploy classroom to classroom connections using new and emerging technologies and/telepresence.
d. **Learning Space** – Prioritize and support the development of personal and/or individualized learning spaces to increase communication and access while improving student success.
e. **Learning Communities** – Maximize the effective use of learning communities (for communication and/or collaboration) using asynchronous and synchronous collaborative learning and teaching systems.
f. **Student Interaction** – Evaluate, implement, and support systems that enable technology-based synchronous (real-time) and asynchronous student interaction inside and outside the classroom.

4. **Course Access** – Continue the quest for convenience, effectiveness, and time compressed learning opportunities for students and college constituents.   Examine and develop methods/systems for improving anytime anywhere access to all course materials and resources.

Key Performance Indicator(s)	1. Number (#) of new initiatives implemented to improve anytime anywhere access. 2. Number (#) of faculty adopting new and/or emerging methods/systems for improving anytime anywhere access to course materials and resources.

a. **Alternative Access, Cost Effectiveness** – Determine cost effectiveness, usability, and sustainability of using new and emerging technologies, systems, and/or practices to improve student and/or faculty anytime anywhere access to all course materials and resources.
b. **Alternative Access Roadmap/s** – Based on research and findings, gathered in objectives "a." above, develop strategic roadmap for acquisition and/or implementation (phased and/or ongoing) of new and emerging alternative to improve anytime anywhere access.
c. **Desktop Video Conferencing** – Provide the ability for faculty, staff, and students to engage in remote videoconferencing thereby increasing anytime anywhere access, collaboration, connectivity, accessibility and efficiency while decreasing unnecessary travel, lost-time, and cost.
d. **Learning Environments, Customizable** – Explore and exploit the value and potential of customizable learning environments compatible with existing technology to improve anytime anywhere access and accessibility while improving student success.
e. **Self-help Online, Faculty** – Providing more self-help/online training for faculty enabling them to use current and new technology teaching and learning tools that support anytime anywhere access.
f. **Self-help Online, Students** – Providing more self-help/online training for students enabling more effective anytime anywhere access and/or use of college systems.

5. **E-Portfolios** – Evaluate and facilitate implementation of e-portfolios to encourage innovative teaching and learning practices resulting in enhanced student success.

Key Performance Indicator(s)	1. Number (#) of new faculty using e-portfolios to facilitate student learning and success.
	2. Percentage (%) of students that believe e-portfolios improve their learning experience.
	3. Difference in retention and success rates (%) for classes using e-portfolios and classes that do not.

a. **E-portfolio Plan Analysis**– Identify and analyze e-portfolio-based programs and services that enrich learning, and/or improve efficiency of students and faculty.
b. **E-portfolio, Cost Effectiveness** – Determine cost effectiveness, usability, and sustainability of using e-portfolio-based teaching and learning programs and services to improve/ensure student success.
c. **E-portfolio Roadmap** – Develop e-portfolio-based teaching and learning roadmap wherein systems and practices are implemented to improve student success, retention, and long-term goal actualization.
d. **E-portfolio Plan** – Develop phased implementation plan to deploy and integrate Seaport with the Open Source E-portfolio System *Mahara*.
e. **E-portfolio System** – Implement e-portfolio system for all CCC students and classes.
f. **E-portfolio Training** – Develop training plan to implement *Mahara E-portfolio System* training for all students, faculty, and staff.
g. **E-portfolios Support** – Support e-portfolio implementation and use to promote increased student success.
h. **Learning Environment** – Collaborate with partner colleges, businesses, and other agencies to provide a common instructional technology and life-long learning environment via *Mahara E-portfolio System* to support student transfer for a higher degree or direct entry into the job market.

6. **Innovative Teaching & Learning Tools/Systems** – Develop and/or adopt innovative technology-based teaching and learning tools that are effective inside and outside the traditional classroom, but most importantly, beyond the traditional paradigm of teaching and learning.

Key Performance Indicator(s)	1. Number (#) of new initiatives implemented that change the traditional

	paradigm of teaching and learning. 2. Student *satisfaction rate* (percent/%) with initiatives that change the traditional paradigm of teaching and learning.

a. **Innovative Teaching & Learning Tools/Systems Needs Assessment/Analysis** – Identify and analyze technology-based teaching and learning tools and services that enrich learning, and/or improve efficiency of students and faculty inside or beyond the traditional classroom, and/or the traditional paradigm of teaching and learning.

b. **Innovative Teaching & Learning Tools/Systems Cost Analysis** – Conduct a thorough cost analysis of promising new innovative technology-based teaching and learning tools, systems, and/or modules prior to development and/or acquisition.

c. **Innovative Teaching & Learning Tools/Systems Roadmap/s** – Develop roadmap to implement and/or leverage innovative technology-based teaching and learning tools and/or processes to improve operational student success inside or beyond the traditional classroom, and/or the traditional paradigm of teaching and learning.

d. **Innovative Teaching & Learning Tools/Systems Implementation** – Implement innovative teaching and learning tools/systems.

   1) **Animation Tools** – Design and develop and/or acquire rapid development *animation products* (2-d & 3-d), demonstrations, models, assets, etc., for use in products and courses.

   2) **Authoring, Interactive Content** – Design and develop and/or acquire authoring tools, templates, game engines, and frameworks for rapid interactive SCORM compliant learning objects and/or courses.

   3) **Automated Interactive Note Taking** – Develop and/or adopt automated interactive note taking and web posting systems for inside and outside the class application/support.

   4) **Captioning** – Develop process/system to automatically generate and place open captioning on videos for streaming, CD-ROMS, or POD/VOD casting.

   5) **Speech Recognition** – Design and develop and/or acquire *speech recognition tools* and/or systems for use in courses and/or collateral products to improve both usability and accessibility.

   6) **Instant Response** – Implement instant response systems and technology for synchronous and asynchronous use inside and outside the classroom compatible with mobile devices and/or facilitated via mobile devices.

   7) **Augmented Reality** – Leverage the capabilities of *augmented reality* to generate high student participation and enhance learning inside and outside the classroom resulting in improved student success.

e. **Interactive Learning, Quality** – Train faculty regarding the quantity, availability, development, and use of interactive simulations, game-based learning systems, learning objects repositories, mediated instruction, collaborative learning systems, and OpenSource content to improve overall student success and retention.

f. **Alternative Methodologies for the Delivery of Course Materials** – Provide options for the organization and delivery of digitized course materials through online repositories, such as *YouTube University, iTunesU*, etc., which may in turn enable the College to reach new student populations.

g. **Personal Computers, Reduce Cost** – Leverage college/district purchasing power to provide access to cost effective personal computing devices (hardware, software, mobile, and desktop) for all students and employees.

7. **Learning Experiences, Empowering** – Ensure that *all learners experience* and *all faculty use* engaging and empowering technology-driven learning systems/tools both inside and outside the classroom to provide high quality anywhere anytime teaching and learning.

Key Performance Indicator(s)	1. Number (#) of new initiatives implemented to improve the *student learning experience*. 2. Number (#) of faculty adopting new methods/systems for improving the *student learning experience*. 3. Student *satisfaction rate* (percent/%) with regarding to initiatives implemented to improve the *student learning experience*.

a. **Innovative Tools/Systems Needs Assessment/Analysis** – Identify and analyze technology-based teaching and learning tools and services that enrich learning, and/or improve each student's *learning experience*.

b. **Innovative Teaching & Learning Tools Cost Analysis** – Conduct a thorough cost analysis of promising new innovative technology-based tools that will improve each student's *learning experience* prior to development and/or acquisition.

c. **Innovative Teaching & Learning Tools Roadmap/s** – Develop a roadmap to implement and/or leverage innovative technology-based teaching and learning tools to improve each student's *learning experience*.

d. **Innovative Teaching & Learning Tools Roadmap/s** – Develop a roadmap to implement and/or leverage innovative technology-based teaching and learning tools to encourage and support faculty adoption and use of these tools to improve each student's *learning experience*.

e. **Innovation, Teaching & Learning Pilots** – Pilot promising instructional technology and/or interactive mediated learning resources/systems that improve the student learning experience.

f. **Content Collaboration/Support** – Implement collaborative content development and discussion boards (e.g., wiki, blog, FAQ, etc.) to assist and/or facilitate and support faculty development of new learning tools and instructional content that improves the student learning experience.

g. **Educational Direction** – Advocate and support the continuing quest for technology-based excellence in education that improves the student learning experience while leading to the facilitation of higher order critical thinking and skill sets.

8. **Learning Styles** – Proactively analyze and implement systems and processes to address/support diverse *faculty teaching styles* and *student learning styles*.

Key Performance Indicator(s)	1. Number (#) of new initiatives implemented to address/support diverse *faculty teaching styles*. 2. Number (#) of new initiatives implemented to address/support diverse *student learning styles*. 3. Number (#) of faculty adopting new and/or emerging methods/systems to address/support diverse *faculty teaching styles*.

a. **Learning & Teaching Styles Needs Assessment/Analysis** – Identify and analyze technology-based teaching and learning tools and services that address/support diverse *student learning styles*.

b. **Learning & Teaching Styles Cost Analysis** – Conduct a thorough cost analysis of promising new innovative technology-based tools that will address/support diverse *student learning styles* and *faculty teaching styles*.

c. **Learning & Teaching Styles Roadmap/s** – Develop a roadmap to implement and/or leverage innovative technology-based teaching and learning tools that will address/support diverse *student learning styles* and *faculty teaching styles*.

d. **Learning Styles, Classroom-based** – Develop/adopt and implement innovative solutions that support diverse faculty teaching and student learning styles through the use of new and unique solutions/processes that ensure and sustain student success inside the classroom.

e. **Learning Styles, Non-traditional/DL** – Develop/adopt and implement solutions that support diverse faculty teaching and student learning styles through the use of new and unique technology-driven

solutions/processes that ensure and sustain student success outside the classroom anytime anywhere.

  f. **Multiple Forms of Interactive Learning** – Integrate in all teaching and learning multiple forms of interactive interaction and support delivery that addresses/supports diverse *student learning styles* and *faculty teaching styles* (e.g., intrinsic learning and teaching support systems, dynamic content/instruction storage and retrieval, instant response, call-center support/tutoring, dynamic ubiquitous instructional databases, multi-sensory synchronous/asynchronous electronic communication, collaborative interactive communication systems designed to provide individualized/personalized support for all students).

9. **Mobile Learning** – Prepare for broad ubiquitous/pervasive use of mobile technology inside and outside of the classroom for teaching and learning anytime anywhere.

Key Performance Indicator(s)	1. Number (#) of Mobile initiatives implemented to improve anytime anywhere access. 2. Number (#) of faculty using Mobile-based resources, apps, or systems for improving anytime anywhere access.

  a. **Mobile Learning Teaching & Learning Tools/Systems Needs Assessment/Analysis** – Identify and analyze technology-based teaching and learning tools and services that enrich learning, and/or improve efficiency of students and faculty inside or beyond the traditional classroom, and/or the traditional paradigm of teaching and learning using mobile technologies.
  b. **Mobile Learning Teaching & Learning Tools/Systems Cost Analysis** – Conduct a thorough cost analysis of promising new mobile-based teaching and learning tools, systems, apps, and/or infrastructure support canopy prior to development and/or acquisition.
  c. **Mobile Learning Teaching & Learning Tools/Systems Roadmap/s** – Develop roadmap to implement and/or leverage innovative mobile-based teaching and learning tools, processes, and infrastructure support canopy to improve student success inside and beyond the traditional classroom, and/or the traditional paradigm of teaching and learning.
  d. **Mobile Learning** – Develop a comprehensive mobile learning and infrastructure implementation, training, and learning resources support plan for student, faculty, and staff.
  e. **Mobile Device, Support** – Develop and implement business/student services, tutoring, and technical support options for students via mobile devices, e.g., e-readers, touch-pads, netbooks, laptops, etc.
  f. **Mobile Device, Support** – Develop and implement course content/lessons, learning resources, peer-to-peer collaboration/interaction, backchannel interaction, instant responses, etc., support options for students via mobile devices, e.g., e-readers, touch-pads, netbooks, laptops, etc.
  g. **Mobile Communication Options** – Research and implement push, pull, RDIF, and scanable codes for communicating with and/or transmitting teaching and learning resources to instructors, students, and staff using mobile devices.

10. **Program Improvement, Collaboration** – Collaborate and optimize relationships with other academic (secondary or postsecondary), government, association, and/or corporate instruction and/or information technology units, staff, and/or experts to ensure that CCC students and faculty obtain state-of-the-art, cost-effective, and beneficial technology-based services.

Key Performance Indicator(s)	1. Number (#) of new initiatives implemented to build and expand collaborative relationships with other college instruction and/or information technology units, staff, and experts to improve anytime anywhere access. 2. Number (#) of new initiatives implemented to build and expand collaborative relationships with other college instruction and/or information technology units, staff, and experts to improve anytime anywhere access.

	3. Number (#) of faculty adopting new and/or emerging methods/systems for improving anytime anywhere access to course materials and resources.

a. **Collaborative Relations Opportunities & Benefits, Needs Assessment/Analysis** – Identify and analyze opportunities and benefits of collaborative relationships with other organizations to enrich technology-based teaching and learning capabilities, resources, and facilities.
b. **Collaborative Relations Opportunities, Cost Effectiveness** – Determine cost effectiveness and long-term sustainability of collaborative relationships with other organizations to support and expand teaching and learning programs, services, quality, and overall student success.
c. **Collaborative Relations Roadmap/s** – Develop collaborative relationships roadmap/s wherein relations are established to jointly share in the analysis, design, development, acquisition, training, delivery, evaluation, etc., of technology-based systems, services, programs, practices, and/or resources needed to improve teaching and learning, student success and retention, and/or long-term student goal actualization.
d. **Innovation, Effectiveness** – Take advantage of shared and/or collaborative approaches to pilot, evaluation, acquire, and implement innovative instructional technology or learning systems to promote cost savings and infusion of new technologies.
e. **Community Partners, Collaborations** – Identify opportunities for collaborating relations with community partners to establish intern and/or apprenticeship programs.
f. **Innovation, Partnerships/Joint-Ventures** – Develop innovative partnerships and joint ventures to design/acquire and implement new and innovative teaching and learning systems.
g. **User Group Participation** – Promote participation in local instructional and information technology user groups to help staff and faculty keep abreast of new and emerging technologies and the needs of the community.
h. **Internship Opportunities** – Working with area colleges/universities and the One-Stop Center to create opportunities for college and graduate students to learn and work in OL&IT as well as other programs throughout the College and District.
i. **Constituency-based Support** – Utilize a balanced constituency-based approach for initiatives to ensure that instructionally sound and sensitive solutions are employed/adopted that meet the instruction and learning needs of students and the community.
j. **Learning Organization** – Encourage and develop activities and technology-based systems and resources to establish the College as a "collaborative global learning organization" where not only students, but faculty, staff, and administrators continuously work to improve their skills and abilities in collaboration with each other and partners state-wide, nationally, and internationally.

11. **SharePoint** – Implement SharePoint multi-purpose CMS to increase efficiency and streamlining and enable a wide range of College practice and processes, e.g., intranet portals, document & file management, collaboration, social networks, extranets, websites, enterprise search, and business intelligence.

Key Performance Indicator(s)	1. Number (#) of new initiatives implemented to leverage benefits of SharePoint.
	2. Number (#) of users by category (faculty, managers, classified staff, students, and partners) benefiting from anytime anywhere access to SharePoint materials and resources.

a. **SharePoint Styles Needs Assessment/Analysis** – Identify and analyze benefits and exemplary practices SharePoint systems, processes, tools, and services will address.
b. **SharePoint Tools/Systems Cost Analysis** – Analyze the overall cost-effectiveness (include TCO, e.g., acquisition, staffing requirements, training, maintenance, licensing, hardware, cost avoidance or savings, etc.) of SharePoint implementation collegewide (detail department and program impact and benefits).

    c. **SharePoint Tools/Systems Roadmap/s** – Develop roadmap to implement and/or leverage SharePoint systems, processes, tools, and services to improve overall organization efficiencies and productivity and improve teaching and learning practices and processes inside and beyond the traditional classroom.

    d. **SharePoint Implementation Team** – Establish SharePoint taskforce to identify, scope, and prioritize initial projects/focus including functional users/managers and IT.

    e. **SharePoint Portal** – Implement a flexible document sharing workspace for the centralized publishing and distribution of electronic documents.

    f. **SharePoint, Training** – Develop and provide SharePoint orientation and training to faculty, staff, and administrators.

12. **Seaport Innovation/Development** – Continue development and implementation of Seaport by adding innovative and unique tools, resources, and capabilities to improve and enhance teaching and learning both inside and outside the classroom.

Key Performance Indicator(s)	1. Number (#) of classroom-based courses using Seaport for lecture, testing, discussion, etc., in the classroom. 2. Number (#) of classroom-based courses using Seaport components as learning and/or a facilitation resource outside the classroom. 3. Percent (%) of students that rank Seaport as a positive and supportive learning environment.

    a. **Seaport/LMS Systems Needs Assessment/Analysis** – Identify and analyze proprietary and OpenSource "state-of-the art" Learning Management Systems (LMS), Learning Content Management Systems (LCMS), Content Management Systems (CMS) and Knowledge Management Systems (KMS) for classroom and distance-based teaching and learning in contrast to Seaport, and traditional paradigms of teaching and learning.

    b. **Seaport/LMS Cost Analysis** – Conduct a comparative cost and feature analysis of the most promising LMS, LCMS, CMS, and/or KMS in relation to Seaport and BlackBoard Learn (e.g., OCC's and GWC's current LMS). Include long term support and sustainability, training, implementation/migration costs, usability, accessibility (W3C/508 compliance), technical support, specialized features, flexibility and adaptability, ERP integration (challenges/costs), SCORM/IMS compatibility/compliance, API's, etc.

    c. **Seaport/LMS Roadmap/s** – Develop roadmap/s to implement and/or leverage innovative new features, changes, upgrades, integrations, etc., needed to maintain and/or sustain Seaport as a viable LMS for CCC and/or recommend new cost effective alternatives (new supplemental and/or replacement systems and/or add-ons) capable of exceeding current teaching and learning capabilities and efficiencies at a reduced cost (including all issues noted above).

    d. **Learner-friendly LMS** – Support continued development and enhancement to Seaport to increasingly support improvement of student success options.

    e. **RSS, Seaport** – Integrate RSS features in Seaport whereas data/information, e.g., announcements, assignments, outcomes, new information, etc., can be pulled by students to any web connected mobile and/or desktop device anywhere anytime.

    f. **Social Network Integration** – Develop and implement seamless Seaport integration with Facebook, YouTube, etc., and other Web2.0 systems to support teaching and learning and student success.

    g. **Seaport Test Engine/Tool** – Upgrade Seaport test engine to allow flexible placement of questions in anywhere in a course, e.g., as a standalone object and/or as part of a test in the SQUID database.

    h. **Seaport, In-Class Use** – Encourage faculty to post assignments, guidelines, handouts, etc., in Seaport versus making copies to distribute in class.

    i. **Student Services 24/7** – Provide technology-based student services such as counseling, tutoring, and technical support 24/7 via Seaport.

j. **Learning Management System (LMS)** – Continuously assess the utilization of Seaport, through comprehensive user input (faculty, student, and support staff) to ensure and enhance usability and learning.   Continuously evaluate other LMS to ensure that Seaport remains the best fit for students and faculty when considering satisfaction, success, usability, costs, efficiency, and compatibility.

k. **Authoring, OpenSource** – Adapt and integrate existing high quality OpenSource and/or proprietary rapid-authoring systems for use with Seaport and/or District LMS's, e.g., *Pachyderm, etc.*

l. **OpenSource Tools/Systems** – Examine Moodle, Sakai, Joomla, Druple, Zope, and other OpenSource LMS, CMSs, Portals, Wikis, Blogs, etc., capabilities and components and clone and/or integrate features into Seaport and/or build single-sign-on links to use within and/or with Seaport.

Strategic Area II – <u>Teaching & Learning</u>

<u>Issues</u>

- Leveraging technology helps improve teaching and learning.
- Technology helps build the capacity of educators through connected teaching, e.g., classrooms are connected to provide educators with 24/7 access to data and analytic tools, and educators have access to resources that help them act on the insights the data provide
- Technology helps focus what and how we teach to match what people need to know, how they learn, where and when they will learn, and who needs to learn.
- State-of-the art technology helps enable, motivate, and inspire all students, regardless of background, languages, or disabilities, to achieve.
- Leveraging the power of technology to provide personalized learning is critical.

<u>Related Issues/Concerns</u>

- Today's higher education students are diverse in their familiarization with and access to technology, particularly at 2-year institutions, and therefore have different sets of support needs.
- There is generational difference between students and faculty, as the average age of faculty in higher education is 50.
- Students believe L&IT improves learning, and want relevant (with real world application), interactive technology to improve convenience and collaboration and to better interact with faculty.
- Students want training on technology for themselves and for faculty
- 2-year institutions are more aggressive in offering online classes.
- Technology use in higher education is controlled by instructor preferences and teaching and L&IT skills.
- 76% of students who have used an LMS report positive experiences and students want more instructors to use LMS more extensively and consistently.
- "Digital natives" (born after 1982), have many reluctant and skeptical IT users.
- Students are discriminating users of IT.
- Students use computers for educational purposes, followed by communication and lastly for presentation of materials.
- Student technology use is driven by demands of the major.
- Quantitative data indicate students have the skills they need, but qualitative interviews suggest students do not, particularly application knowledge and problem-solving skills.
- Curriculum drives L&IT use.
- Instructors determine LMS features that are used
- Instructors must re-design courses to incorporate e-learning.
- Training plays a key role in successful adoption, particularly by other faculty.

- Faculty primarily use "static" tools, rather than interactive tools
- Students believe they are more internet-savvy than their teachers
- Students believe teachers' use of the internet is uninspiring
- Older students are more likely to be satisfied with fully web-based courses than traditional age students.
- Older learners are less interested in the social aspect of learning, want convenience and flexibility
- Adult learners often cite lack of timely support as reason for abandoning studies.
- Students overwhelmingly prefer a balanced lecturing/interactive environment.
- Highest perceived benefits from technology use in the classroom are – better communicate with the instructor, instructor feedback, communicate with classmates.
- Institutions cannot afford to "study the problem to death".

Related Indicators

National Education Technology Plan	California Community Colleges Student Success Task Force	District Strategic Themes	Coastline Strategic Initiatives
1, 3, 4, 5, 6	1, 2, 3, 4	1, 2, 3, 4, 6	1, 2, 4

Benefits

- Adoption of teaching strategies that leverage instructional technologies.
- Better understanding of student learning and information technologies use.
- Bridge gap between faculty expertise, student needs, and college resources.
- Design and quality standardization helps spread knowledge.
- Improved ability to apply learning and information technology in complex situations.
- Improved learning and information technologies literacy of students and faculty.
- Leverages expert knowledge.
- Model the highest standards.
- Quality and usability of course delivery systems.
- Revisits teaching and learning assumptions.

Goals

1. **Academic Planning** – Implement an online system that will allow students to research and build an education plan, track and revise the plan, and monitor overall *academic progress*.

Key Performance Indicator(s)	1. Percent (%) of students that rank the academic planning systems as a positive and supportive tool for ensuring and sustaining student success.

   a. **Academic Planning Needs Assessment/Analysis** – In collaboration with the District, OCC and GWC, identify and analyze options and exemplary practices for Academic Planning systems, processes, and tools.
   b. **Academic Planning Cost Analysis** – Analyze the overall cost-effectiveness (include TCO, e.g., acquisition, staffing requirements, training, maintenance, licensing, hardware, cost avoidance or savings, etc.) of the most promising academic planning solutions.
   c. **Academic Planning Roadmap/s** – Develop roadmap/s to implement and/or leverage recommended system/s, processes, tools, and services to improve overall student support and success.
   d. **Student Success, Online** – Develop/acquire and implement a sustainable online *education plan* program/system to promote student success.

2. **Accessibility & Usability** – Develop systems, processes, and practices to ensure that all technology-based teaching and learning systems offer full *accessibility* and *compliance*.

Key Performance Indicator(s)	1. Number (#) of students unresolved non-compliance complaints. 2. Percentage (%) of students that indicate that CCC's systems are user friendly and helpful.

   a. **Accessibility & Usability Needs Assessment/Analysis** – Identify and analyze accessibility and usability concerns, challenges, issues, requirements, and solutions for all technology-based teaching and learning tools, systems, and/or processes used both inside and outside the classroom.

   b. **Accessibility & Usability Cost Analysis** – Analyze the overall cost, impact, and sustainability (include TCO, e.g., acquisition, staffing requirements, training, maintenance, licensing, hardware, cost avoidance or savings, risk assessment, etc.) of developing/adopting and implementing the most promising and required solutions.

   c. **Accessibility & Usability Roadmap/s** – Develop roadmap/s to implement and/or leverage recommended system/s, processes, tools, and services to improve teaching and learning, operational productivity and efficiency, and overall student support and success.

   d. **Accessibility, Seaport** – Evaluate usability and accessibility of Seaport. Identify potential impact, scope, and cost of any required upgrades to ensure full compliance with W3C, IMS, and 508 accessibility requirements. Work to develop and implement full compliance in all areas.

   e. **Assistive Technologies** – Identify, acquire, and provide compliant assistive technologies for disabled students.

3. **Technology-Enhanced/Smart Classrooms** – Provide for a continuously improving and effective *technology-enhanced smart classroom* learning environment (or portable smart-teaching systems/tools).

Key Performance Indicator(s)	1. Number (#) of classrooms upgraded. 2. Percent (%) of total classroom/spaces with smart technology.

   a. **Technology-Enhanced/Smart Classrooms Needs Assessment/Analysis** – Identify and analyze (static or mobile) technology-enhanced and/or smart classroom environments, collaborative/interactive learning communities, and learning tools and services that address and support diverse *student learning styles* beyond the traditional paradigm of teaching and learning.

   b. **Technology-Enhanced/Smart Classrooms Cost Analysis** – Conduct a thorough cost analysis of promising new innovative technology-enhanced and/or smart classroom environments tools that will address/support diverse *student learning styles* and *faculty teaching styles*.

   c. **Technology-Enhanced/Smart Classrooms Roadmap/s** – Develop a roadmap to implement and/or leverage innovative technology-enhanced and/or smart classroom environments/tools that will address/support diverse *student learning styles* and *faculty teaching styles*.

   d. **Technology-Enhanced/Smart Classrooms** – Provide automated lecture capture and VOD/POD cast/streaming hardware for all classrooms, conference rooms, and/or other suitable teaching and learning areas, include portable carts and/or systems for enhancing capabilities in multiuse areas.

   e. **Technology-Enhanced/Smart Classrooms, Convert Multimedia Classrooms** – Convert multimedia classroom at each college learning center into "smart" classrooms. Supplement and/or replace existing multimedia computers, LCD projectors, document cameras, and presentation hardware and software with advanced technology to ensure that each classroom fully supports student computing, interactivity and collaboration, automatic capture of lectures/presentations, instant response, and becomes and integral part of the College's overall web presence.

f.   **Webcasting** – Equip selected sites/classroom with hardware to facilitate webcasting and linkages to external sites for dual class activities or connections (consider mobile systems as appropriate and necessary).

g.   **TelePresence** – Equip selected sites/classrooms (and/or mobile systems) with hardware to facilitate high definition telepresence learning environments with linkages to external sites for multi-site telepresence class activities.

4.   **Instructional Technology, Diversity** – Support the creative use of instructional technology and learning resources to meet the unique needs of a *diverse student population*.

Key Performance Indicator(s)	1. Percent (%) of students that rank the use of, access to, and support for instructional technology as positive and supportive of CCC's *diverse student population*.

a.   **Instructional Technology Needs Assessment/Analysis** – Identify and analyze options and exemplary practices for infusion/adoption, training, and use of new and emerging instructional technology to meet the unique needs of a *diverse student population*.

b.   **Instructional Technology Cost Analysis** – Analyze the overall cost-effectiveness (include TCO, e.g., acquisition, staffing requirements, training, maintenance, licensing, hardware, cost avoidance or savings, etc.) of the most promising new instructional technologies to meet the unique needs of a *diverse student population*.

c.   **Instructional Technology Roadmap/s** – Develop roadmap/s to implement and/or leverage recommended system/s, processes, tools, and services to meet the unique needs of a *diverse student population*.

d.   **Technology Orientation** – Develop an "*Orientation to Instructional Technology and Mediated Teaching and Learning Resources*" for all incoming students, faculty, and staff with specific emphasis on best-practices for technology-based teaching and learning in a *diverse learning environment*.

e.   **Just-in-time Learning/Training** – Identify and provide new tools, systems, and strategies for just-in-time training outreach to the desktop to enable staff and faculty to access assistance, resources, services, and systems for needed tasks and/or education anytime anywhere using capture tools (Camtasia, etc.), authoring tools (SoftChalk, etc.), archived files, mini-lessons/tutorial (how-to) and other techniques necessary for meeting the needs of a *diverse student population*.

f.   **Technology Resource Distribution** – Actively collaborate with faculty and Instructional Administrators to ensure that all students, regardless of center or delivery modality, have access to the same instructional technology and mediated learning resources.

g.   **Innovation, Grants** – Identify grant opportunities for instructional technology initiatives and determine the protocol for linking grant opportunities with CCC initiatives to improve teaching and learning for a diverse student population.

h.   **Cable Station** – Continue to develop and launch active programming via the Coastline cable station supporting television-based learning and college marketing designed to serve the needs of a diverse student population.

i.   **Student Views** – Solicit diverse student views and input regarding instructional technology needs, effectiveness, access, availability, and required support.

j.   **Training** – Ensure that all faculty, staff, and managers effectively use technology by implementing a robust, high-quality training program with specific consideration given to CCC's diverse student population.

5.   **Instructional Design/Technology, Student Centered** – Create support and delivery systems for *instructional technology* and *instructional design* processes and tools that are *student-centered* and seamless across the college while ensuring equally applicable inside and outside of the classroom and availability

anytime anywhere.

Key Performance Indicator(s)	1. Percent (%) of faculty that rank instructional technology and design services and support as positive and supportive for ensuring and sustaining student centered teaching and learning.

   a. **Student Centered Instructional Design/Technology Needs Assessment/Analysis** – Identify and analyze options and exemplary practices for infusion/adoption, training, and use of state-of-the-art instructional design and technology systems, process, services, and tools necessary to provide a highly effective student centered teaching and learning environment.
   b. **Student Centered Instructional Design/Technology Cost Analysis** – Analyze the overall cost-effectiveness (include TCO, e.g., acquisition, staffing requirements, training, maintenance, licensing, hardware, cost avoidance or savings, etc.) of the most promising systems, process, services, and tools available that will aid in providing and ensuring a highly effective student centered teaching and learning environment.
   c. **Student Centered Instructional Design/Technology Roadmap/s** – Develop roadmap/s to implement and/or leverage recommended systems, process, services, and tools available to facilitate highly effective student centered teaching and learning.
   d. **Instructional Design Templates/Shells** – Develop and/or adopt common instructional design templates, interactive learning shells, and a course management system (and tools) to promote cohesiveness and maintain instructional consistency facilitate highly effective student centered teaching and learning.
   e. **Instructional Design Tools** – Develop and/or acquire comprehensive instructional design tools for the creation of highly mediated interactive learning objects, lessons, and/or courses.   Investigate *WIDS an*d/or similar technology systems as a possible solution.
   f. **Instructional Design and Technology Planning** – Establish processes for incorporating new instructional design and instructional technology initiatives that include appropriate resource planning, implementation, and assessment to ensure viability, proper support levels, and sustainability.
   g. **Instructional Technology Standards** – Develop minimum standards for instructional design and technology to enhance the student-learning environment and promote active learning.
   h. **Student Technology Support/Resources** – Integrate state-of-the-art instructional design and instructional technologies college-wide to improve and expand student learning experiences.
   i. **Serious Games Tools/Authoring** – Develop and/or acquire rapid development game tools and or/shells for faculty to modify for their classes (courseware and reusable tools/approaches).
   j. **Virtual Worlds** – Design and develop and/or acquire rapid development *virtual worlds* and/or reusable Virtual Reality (VR) tools/engines for use in courses and/or collateral products.

6. **Library Service** – Analyze and implement innovative new and emerging library services and learning resources to support and enhance technology-based learning anywhere anytime via individualized learning systems, mobile devices, learning communities, social networks, virtual world, etc., but most importantly, support strategies, process, and practices extending beyond the traditional teaching and learning paradigm.

Key Performance Indicator(s)	1. Percent (%) of students that rank library services and learning resources as a positive and supportive tool for student success.

   a. **Library Service Needs Assessment/Analysis** – Identify and analyze new and emerging technology-based options, solutions, and exemplary practices for infusion/adoption, training, and use of state-of-the-art library and learning resources systems, process, services, and tools necessary to ensure and sustain exceptional student success.

b. **Library Service Cost Analysis** – Analyze the overall cost-effectiveness (include TCO, e.g., acquisition, staffing requirements, training, maintenance, licensing, hardware, cost avoidance or savings, etc.) of the most promising library and learning resources systems, process, services, and tools available to ensure and sustain exceptional student success.

c. **Library Service Roadmap/s** – Develop roadmap/s to implement and/or leverage recommended library and learning resource systems, processes, services, and tools to facilitate, ensure, and sustain exceptional student success.

d. **Library Single Sign-on/Authentication** – Implement software for single-sign-on and authentication of all subscription databases/resources.

e. **Library Systems, Provide for Real-Time Integration** – Implement processes and systems to ensure that the necessary infrastructure is put in place so each student has appropriate access to library resources anytime anywhere.

f. **Library Subscription Databases** – Maintain support for subscription databases that provide learners access to relevant periodical publications for research.

g. **Library Pathways, OpenSource** – Build/integrate user friendly easy pathways for faculty and students to use free *teaching* and *learning* resources and repositories (OpenSource, Creative Commons, CopyLeft, and Public Domain) and collaborative learning systems, tools, and networks (e-portfolios, social network, sharing utilities, wikis, blogs, etc.) available via the internet.

7. **Repository/Knowledge Garden** – Facilitate rapid development and implementation of a college-based (on-site or in the cloud) Dublin Core Indexed (or Basic Interoperability Data Model indexing) and folksonomy tagged *dynamic repository* for all teaching and learning resources (media, learning objects, documents, audio, video, etc.) which can be leveraged to enhance the quality, accessibility, usability, availability, shareability, and effectiveness of the college's intellectual property.

Key Performance Indicator(s)	1. Number (#) of object/assets stored in repository. 2. Percent (%) of faculty utilizing repository for storage and retrieval of teaching and learning assets.

a. **Dynamic Knowledge Repository/Knowledge Garden Needs Assessment/Analysis** – Identify and analyze proprietary and OpenSource Dynamic Knowledge Repositories (DKR), Federated Knowledge Gardens, Folksonomy Repositories, etc., for storage, retrieval, and "growth/development" of shared instructional/teaching and learning content/resources for use in Seaport and/or other LMS systems.

b. **Dynamic Repository/Knowledge Garden Cost Analysis** – Conduct a comparative cost and feature analysis of the most promising implementation, retrieval, and development "Knowledge Garden"/repository system/s.

c. **Dynamic Repository/Knowledge Garden Roadmap/s** – Develop roadmap/s to implement and/or leverage innovative "Knowledge Garden"/repository system/s, needed to sustain and support highly effective and innovative teaching and learning practices.

d. **Interactive/Digital Content** – Establish and adopt protocols, standards, and procedures for developing and managing interactive/digital content for delivery using interactive and/or dynamic digital technologies.

e. **Repository Pathways, OpenSource** – Build easy to use pathways and/or linkages (cross-cataloging, single-sign-on, etc.) to public repositories/data warehouses (Merlot, MIT/OCW, Rice Connection, etc.) containing free and/or no cost media/instructional materials compatible with existing IP and Seaport LMS.

8. **STEAM^2, Technology-enhanced** – Use advances in technology to enhance *STEAM^2* (science, engineering, mathematics, and medicine) teaching and learning enabling a greater number of student to excel in STEAM^2 programs.

Key Performance Indicator(s)	1. Percent (%) of student success for students enrolled in STEM^2 courses. 2. Number (#) of new STEAM^2 initiatives.

a. **STEM^2 Tools/Systems Needs Assessment/Analysis** – Identify and analyze benefits and exemplary practices of new and emerging teaching and learning systems, processes, tools, and services used to improve and sustain STEAM^2 student success.
b. **STEM^2 Tools/Systems Cost Analysis** – Analyze the overall cost-effectiveness (include TCO, e.g., acquisition, staffing requirements, training, maintenance, licensing, hardware, cost avoidance or savings, etc.) of implementing new and emerging teaching and learning systems, processes, tools, and services used to improve and sustain STEAM^2 student success (detail department and program impact and benefits).
c. **STEM^2 Tools/Systems Roadmap/s** – Develop roadmap/s to implement and/or leverage new and emerging teaching and learning systems, processes, tools, and services that will improve overall organization efficiencies and productivity and improve teaching and learning practices and processes inside and beyond the traditional classroom for STEAM^2 programs/courses.
d. **STEM^2 Tools/Systems** – Develop and/or adopt interactive self-paced standalone and facilitated options available that will sustain and/or significantly improve delivery of high quality STEAM^2 instruction.
e. **STEM^2 Tools/Systems** – Develop and/or adopt technology-based solutions needed to improve and/or sustain high quality STEAM^2 instruction inside and outside the classroom including both tradition and non-traditional modalities
f. **Virtual Labs** – Build and/or adopt virtual labs, tools, and models which can be used to extend, supplement and improve the quality of existing laboratory experiences in a variety of STEAM^2 and other critical instructional disciplines.
g. **Serious Simulations** – Leverage the capabilities *serious simulations* to generate high student participation in videogame-like activities resulting in improved student success in STEM^2 courses.
h. **Simulations Tools/Authoring** – Develop and/or acquire rapid development simulation tools for faculty to populate and use in STEAM^2 classes.
i. **Virtual Collaboration Environments** – Leverage the unique capabilities of collaborative virtual technologies, delivered inside or outside the classroom to help students achieve identified science and laboratory objectives.

9. **Student Learning & Information Technology Support/Services** – Expand and improve *learning and information technology support* and services through innovative technologies to all students attending classes inside or outside the classroom anytime anywhere.

Key Performance Indicator(s)	1. Percent (%) of students that rank *learning and information technology support* and services as positive and supportive of their learning experience in the classroom. 2. Percent (%) of students that rank *learning and information technology support* and services as positive and supportive of their learning experience outside of the classroom.

a. **Student Learning & Information Technology Support/Services Needs Assessment/Analysis** – Identify and analyze new and emerging technology-based options, solutions, and exemplary practices for providing state-of-the-art high quality student learning and information technology support and services (including specialized resources, systems, process, services, tools, tutorials/training, and help) essential to ensure and sustain student success.
b. **Student Learning & Information Technology Support/Services Cost Analysis** – Analyze the overall cost-effectiveness (include TCO, e.g., acquisition, staffing requirements, training,

maintenance, licensing, hardware, cost avoidance or savings, etc.) of the most promising new and emerging technology-based options, solutions, and exemplary practices for providing state-of-the-art state-of-the-art high quality student learning and information technology support and services essential to sustain student success.

c. **Student Learning & Information Technology Support/Services Roadmap/s** – Develop roadmap/s to implement and/or leverage recommended student learning and information technology support and services.

d. **Virtual Learning Environments** – Make virtual instructional technology-based teaching and learning and learning support environments available for students and faculty such as virtual labs, lounges, classrooms and study centers through multi-user collaborative virtual learning environments (e.g., MUVEs/multi-user virtual environments such as *2nd Life*).

e. **Support, High Quality** – Develop a technology-based, college-wide customer learning and information technologies service infrastructure to provide students and staff consistent methodologies and points of contact for all support and services anytime anywhere.

f. **Mediated Instruction Innovation, OL&IT** – Provide training and support service tools and processes to emphasize and build pathways to the Office of Learning & Information Technologies and its channels of support and services as the key resource for excellence in technology-based teaching and learning, mediated instruction innovation, and information technology infrastructure and resources.

10. **Student Success & Retention** – Investigate and implement innovative *technology-based systems*, processes, and practices that target student *success* and *retention* resulting in significant increases.

Key Performance Indicator(s)	1. Percent (%) of student success and retention in the classroom and through Distance Learning.

a. **Student Success & Retention Needs Assessment/Analysis** – Identify and analyze new and emerging technology-based options, solutions, and exemplary practices for targeted improvements in student retention and success.

b. **Student Success & Retention Cost Analysis** – Analyze the overall cost-effectiveness (include TCO, e.g., acquisition, staffing requirements, training, maintenance, licensing, hardware, cost avoidance or savings, etc.) of the most promising targeted solutions, e.g., resources systems, process, services, and tools available to significantly increase student success and retention.

c. **Student Success & Retention Roadmap/s** – Develop roadmap/s to implement and/or leverage recommended targeted technology-based solutions to significantly improve and sustain student success and retention.

d. **Blogging and Discussion Group Portal** – Provide an environment for free-form sharing of ideas, opinions, and discussions amongst the College community.

e. **Collaborative Course Planning** – Develop collaborative course planning engine, e.g., student interest in unscheduled courses and/or programs is aggregated and automatically scheduled when a critical mass of students is reached making a course/program economically feasible.

f. **Student-Experience, Online** – Explore opportunities for extension of the *student-experience* into cyberspace through innovative new and emerging technology.

g. **Student Web Content** – Work with faculty to develop and deploy systems to empower students to create student web-based content for classroom and distance learning projects, student resources, and student peer-peer interactions.

h. **Student Needs vs. Faculty Use, Technology** – Continually analyze student learning relative to faculty acquisition and use of teaching and learning technology to determine additional needs to enhance systems, processes, resources, training, support services, just-in-time-help, and student services.

i. **Virtual Offices** – Investigate and implement ubiquitous virtual synchronous and asynchronous

offices spaces/environments for faculty/counselors, staff, and administrators with text, audio, video, and/or interactive desktop interaction capability as a key targeted solution to improving collaborative interaction in support of student success and retention.

11. **Technology-Based Counseling, Services/Support** – Develop and/or identify and adopt innovative *technology-based systems/tools* to enhance Counseling *services* that promote and sustain student success and retentions.

Key Performance Indicator(s)	1. Number (#) of new technology-based counseling initiatives (services, support, or tools) implemented.
	2. Percent (%) of students that rank the use of technology-based counseling services/support activities as positive and supportive of student success.

    a. **Technology-Based Counseling Needs Assessment/Analysis** – Identify and analyze new and emerging technology-based options, solutions, and exemplary practices for Counseling support and/or services.

    b. **Technology-Based Counseling Cost Analysis** – Analyze the overall cost-effectiveness (include TCO, e.g., acquisition, staffing requirements, training, maintenance, licensing, hardware, cost avoidance or savings, etc.) for the most promising Counseling support and/or services, e.g., resources, process, systems, and tools available to increase/insure student success and retention.

    c. **Technology-Based Counseling Roadmap/s** – Develop roadmap/s to implement and/or leverage recommended counseling solutions to significantly improve student success and retention.

    d. **Technology-Based Counseling** – Increasing funding to support counseling technology-based tools that enhance student learning and promote student success.

    e. **Career & Transfer Services** – Provide funding and support to sustain and enhance existing software programs used for career and/or transfer services.

    f. **Virtual Campus** – Continue development and facilitation of a Virtual Campus in 2nd Life to offer enhanced counseling student services, student-faculty support opportunities, a virtual community meeting place for widely dispersed students, education fairs, and R&D locations for new course development in a variety of disciplines.

    g. **Student Scheduling, Counseling** – Integrate web-based student reservation component with existing counseling appointment system.

12. **Faculty/Staff Incentives, Utilization** – Provide *incentives* and support to encourage *faculty and staff* to continually improve use and/or application of instructional technology and mediated learning resources for teaching, learning, and support services.

Key Performance Indicator(s)	1. Percent (%) of faculty participating in new technology-based initiatives.
	2. Percent (%) of staff participating in new technology-based initiatives.

    a. **Faculty/Staff Incentives Needs Assessment/Analysis** – Identify and analyze options, solutions, and exemplary practices for infusion and use of new and emerging technology-based teaching and learning systems, practices, services, tools, etc., through faculty and staff incentives.

    b. **Faculty/Staff Incentives Cost Analysis** – Analyze the overall cost-effectiveness (include TCO, e.g., acquisition, staffing requirements, training, maintenance, licensing, hardware, cost avoidance or savings, etc.) for the most promising faculty and staff incentives programs to increase use of new and emerging technology-based teaching and learning systems, practices, services, tools, etc.

    c. **Faculty/Staff Incentives Roadmap/s** – Develop roadmap/s to implement and/or leverage recommended faculty and staff incentives programs to increase use of new and emerging technology-based teaching and learning systems, practices, services, tools, etc.

d. **Faculty Incentives, Collaboration** – Develop plans to provide work release time and incentives for staff and faculty who participate in community/regional user-groups to design and develop new instructional technology/system and/or learning resources that will benefit CCC and its students.
e. **Faculty Incentives, Training** – Support use of incentives to encourage and/or support faculty and staff participation in technology training.
f. **Pilot Incentives** – Pilot various incentive strategies to encourage and/or support faculty and staff participation in use and application of new and emerging technology-based teaching and learning strategies, practices, processes, etc.

13. **Faculty Development** – Provide professional development for faculty (and staff) to utilize technology in support of varied teaching and student learning styles and instructional technology strategies.

Key Performance Indicator(s)	1. Percent (%) of faculty that rank training and/or development initiatives to expand and approve the use of technology-based teaching and learning above average or outstanding.

a. **Faculty Development Needs Assessment/Analysis** – Identify and analyze options, solutions, and exemplary practices for training and development initiatives to support and facilitate faculty adoption and effective use of new and emerging technology-based teaching and learning systems, practices, services, tools, etc.
b. **Faculty Development Cost Analysis** – Analyze the overall cost-effectiveness (include TCO, e.g., acquisition, staffing requirements, training, maintenance, licensing, hardware, cost avoidance or savings, etc.) for the most promising training and development initiatives to support and facilitate faculty adoption and effective use of new and emerging technology-based teaching and learning systems, practices, services, tools, etc.
c. **Faculty Development Roadmap/s** – Develop roadmap/s to implement and/or leverage recommended training and development initiatives to support and facilitate faculty adoption and effective use of new and emerging technology-based teaching and learning systems, practices, services, tools, etc.
d. **Faculty Development, Technology-based Instructional Design for F2F** – Prioritize and support training for instructors to develop the skills necessary to integrate technology and pedagogy in the classroom to ensure and support student success.
e. **Faculty Development, Technology-based Instructional Design for New Technologies** – Prioritize and support faculty training in instructional design and appropriate and effective use of new technologies for alternative and/or distance learning delivery.
f. **Faculty Development, Technology-based Teaching** – Support district-wide development of curricula for faculty that increases faculty knowledge and comfort in online teaching and multi-media course development in a LMS environment.
g. **Faculty & Staff Development** – Schedule educational webinars (brown bag lunch activities for example) from both internal and external sources to improve college faculty (and staff) skills and knowledge.
h. **Faculty & Staff Training** – Continue to offer Summer Technology Institute to provide professional skill building and to improve the quality of technology-based teaching and learning the College offers.
i. **Faculty Training, Online Teaching** – Explore, identify, develop, and/or adopt *technology-based training resources* and practices to improve traditional and non-traditional teaching approaches and practices that improve and sustain student success.
j. **Technology Climate** – Create a climate for embracing new technologies by providing opportunities and training for faculty and staff to evaluate and use innovative instructional technologies and mediated learning resources.
k. **Faculty Access, Exemplary Practices** – Create inventory/library of exemplary-practices, procedures, protocols, guidelines, etc.

l.   **Training Resources** – Provide faculty (and staff) 24/7 access to teaching and learning and productivity and efficiency resources anytime anywhere.
m. **Professional Development, Individualized** – Expand individualized or small group training and/or consultation for new technology-based teaching and learning systems.

14. **Faculty Support and Services, OL&IT** – Identify and prioritize increased faculty (and staff) support and services provided by the Office of Learning & Information Technologies (OL&IT) that enhance and promote student learning and success and college efficiency and productivity.

Key Performance Indicator(s)	1. Percent (%) of faculty that rank OL&IT support and services as an effective tool for ensuring and sustaining student success. 2. Percent (%) of staff that rank OL&IT support and services as an effective tool for ensuring and sustaining student success and/or productivity and efficiency.

a.   **Support/Services Needs Assessment/Analysis** – Identify and analyze options, solutions, and exemplary practices for improving and/or implementing technology-based faculty (and staff) support systems to improve and/or promote student success.
b.   **Support/Services Cost Analysis** – Analyze the overall cost-effectiveness (include TCO, e.g., acquisition, staffing requirements, training, maintenance, licensing, hardware, cost avoidance or savings, etc.) of the most promising faculty (and staff) support systems that will improve and/or promote student success.
c.   **Support/Services Roadmap/s** – Develop roadmap/s to implement and/or leverage recommended faculty (and staff) support systems to improve and/or promote student success.
d.   **Standards, Instructional Technology** – Support use and development of instructional technology standards, processes, practices systems, and tools to ensure that classroom, hybrid, and distance learning classes match the same quality standards.
e.   **DL Support** – Support faculty in the appropriate use of DL and classroom instructional technologies.
f.   **Support Request** – Refine and communicate value of the OL&IT automated web-based system for requesting support services (e.g., online help system).
g.   **Teaching Resources** – Develop a technology exploration and learning environment that provides faculty the freedom to explore new teaching and learning technologies within a secure test environment with the support of technology specialists.
h.   **Innovation/Exploration** – Support faculty development, pilot, and demonstration initiatives that stimulate and promote exploration and sharing of innovation and effective use of instructional technologies.
i.   **Online Resources 24-7** – Increase the availability of 24-7 access to online resources for faculty, staff, and students.
j.   **Technology Awareness/Training** – Develop and offer training and resources to deploy web-based teaching and learning tools including wikis, blogs, data inquiry, data visualization, interactive authoring, game development, virtual world/environments, simulation, e-book development, etc.

k.   **Enhance/Eliminate** – Increase or eliminate services as dictated by student, faculty and staff requirements.

15. **Enhancing Teaching, With Technologies** – Identify and prioritize new technologies that will dramatically enhance teaching and learning while promoting and sustaining student success.

Key Performance Indicator(s)	1. Percent (%) of overall student success and retention. 2. Number (#) of new technology-based teaching and learning initiatives.

a. **Technology-Based Teaching Needs Assessment/Analysis** – Identify and analyze options, solutions, and exemplary practices for improving and/or implementing technology-based teaching to improve and/or promote student success and retention.
b. **Technology-Based Teaching Cost Analysis** – Analyze the overall cost-effectiveness (include TCO, e.g., acquisition, staffing requirements, training, maintenance, licensing, hardware, cost avoidance or savings, etc.) of the most promising technology-based teaching processes, systems, tools, and practices that improves and/or promotes student success and retention.
c. **Technology-Based Teaching Roadmap/s** – Develop roadmap/s to implement and/or leverage recommended technology-based teaching systems to improve and/or promote student success and retention.
d. **Game-based Learning** – Support development of serious game-based learning courseware to support classroom learning and improve and/or promote student success and retention.
e. **On-Demand Video Infrastructure** – Develop an on-demand video infrastructure to enable and support the use of video inside or outside the classroom to promote and support increased student success and retention.
f. **Lecture Capture & VOD/PODcasting** – Leverage VoD systems to provide the means to post and share multimedia content for new technology-enhanced classrooms and DL initiatives.
g. **Online Course Management Resources** – Expand the role of the online course management system to provide a comprehensive collection of tools and resources for teaching, learning, content development, and interactive resource development.
h. **Telepresence** – Adopt and/or develop simultaneous multi-site telepresence (high quality videoconferencing) course delivery capabilities with remote ingest of content live and/or pre-recorded.
i. **E-books** – Increase the availability of and access to electronic books for all learners.

16. **Mobile Course/Content Development** – Promote and support development and effective use of educational strategies for developing and delivering content via mobile devices.

Key Performance Indicator(s)	1. Percent (%) of students using mobile devices to access and/or use course materials. 2. Number (#) of faculty deploying mobile assessable learning/instructional materials.

a. **Mobile Device Needs Assessment/Analysis** – Identify and analyze options, solutions, and exemplary practices for improving and/or implementing mobile web-based and/or mobile-app-based teaching and learning resources, materials, services, etc.
b. **Mobile Device Cost Analysis** – Analyze the overall cost-effectiveness (include TCO, e.g., acquisition, staffing requirements, training, maintenance, licensing, hardware, cost avoidance or savings, etc.) of the most promising mobile-based teaching and learning processes, systems, tools, and practices that improves and/or promotes student success and retention.
c. **Mobile Device Roadmap/s** – Develop roadmap/s to implement and/or leverage recommended mobile-based teaching systems to improve and/or promote student success and retention.
d. **Mobile Device Friendly Instructional Technologies** – Provide students direct access to mobile instructional content such as podcasts, e-books, and learning apps specifically designed for mobile devices.
e. **Mobile Services** – Encourage and support use of texting, social networks, micro-bogs, blogs, wikis, video streaming, VOD/POD casting, and the latest web technologies used to facilitate effective communication, open access to information, and anytime anywhere learning for staff, faculty, and students.

17. **Multiuser Virtual Learning Environment/Technology** – Evaluate and exploit the potential of multiuser

virtual learning environments/systems (MUVEs) to significantly improve student learning, student support, faculty, and staff efficiency, anytime and anywhere.

Key Performance Indicator(s)	1. Percent (%) of faculty using MUVEs for teaching and learning. 2. Number (#) of new MUVE teaching and learning initiatives.

a. **Multiuser Virtual Learning Environment Needs Assessment/Analysis** – Identify and analyze options, solutions, and exemplary practices for improving and/or implementing MUVEs to improve and/or promote student success and retention.

b. **Multiuser Virtual Learning Environment Cost Analysis** – Analyze the overall cost-effectiveness (include TCO, e.g., acquisition, staffing requirements, training, maintenance, licensing, hardware, cost avoidance or savings, etc.) of the most promising MUVE systems, tools, and practices that improve and/or promote student success and retention.

c. **Multiuser Virtual Learning Environment Roadmap/s** – Develop roadmap/s to implement and/or leverage recommended MUVE systems to improve and/or promote student success and retention.

d. **Develop, enhance, and/or 2nd Life (Virtual) Training Facility & Tools** – Design and develop a comprehensive virtual college and training facility in 2nd Life and other networks offering specialized simulations and tools to enhance STEM[2] teaching and learning.

e. **2nd Life Campus** – Expand development and utilization of 2nd Life Virtual Campus for teaching and learning, counseling, and marketing through seamlessly integrated with Seaport and other College processes and/or systems.

f. **Academic Classroom Collaboration Technologies** – Evaluate classroom collaboration and participation technologies that enable faculty to better interact with all students in the classroom.

18. **Align Technology-based Programs** – Create mechanism to collaborate and build relationships with local industry and corporations that leverage technology-based teaching and learning tools and strategies. Create new and/or align existing college program offerings.

Key Performance Indicator(s)	1. Number (#) of new initiatives implemented to build and expand collaborative relationships with industry.

a. **Collaborative Relations Opportunities & Benefits, Needs Assessment/Analysis** – Identify and analyze opportunities and benefits of collaborative relationships with industry to prepare students for new and emerging technology-based and/or technology leveraged work environments.

b. **Collaborative Relations Opportunities, Cost Effectiveness** – Determine cost effectiveness and long-term sustainability of collaborative relationships with industry to prepare students for new and emerging technology-based and/or technology leveraged work environments.

c. **Collaborative Relations Roadmap/s** – Develop collaborative relationships roadmap/s wherein relations are established to jointly share in the analysis, design, development, acquisition, training, delivery, evaluation, etc., of students for new and emerging technology-based and/or technology leveraged work environments.

d. **Innovation, Effectiveness** – Take advantage of shared and/or collaborative approaches with industry to pilot, evaluate, acquire, and implement innovative technology-based and/or technology leveraged work environments.

e. **Industry Partners, Collaborations** – Identify opportunities for collaborating relations with industry partners to establish intern and/or apprenticeship programs.

f. **Innovation, Partnerships/Joint-Ventures** – Develop innovative partnerships and joint ventures with industry to design/acquire and implement innovative technology-based and/or technology leveraged work environments.

Strategic Area III – Infrastructure & Operations

Issues

- A comprehensive infrastructure for learning provides every student, educator, and organization level with the resources needed when and where they are needed.
- Infrastructure includes people, processes, learning resources, policies, and sustainable models for continuous improvement, e.g., broadband connectivity, servers, software, management systems, and administration tools.

Related Issues/Concerns

- Most of today's students are tech-savvy, but a technology "underclass" exists where low-income students cannot afford computers.
- Most college students today have computers (98%) and a large percentage have smart mobile devices.
- Over 80% of students have access to broadband.
- Convenience and communication are among the highest benefits reported from learning and information technologies in the classroom.
- Over 50% students report some barriers to classroom learning and information technologies use—particularly increased work load, application difficulty, lack of printer access and lack of technical support.

- Technology use in classes is controlled by instructor preferences and teaching and L&IT skills
- Preference for academic institution e-mail versus other provider is split.
- Responses to what new technology they wanted depended upon age – 18-19 year-olds want more network speed and music, and 20-29 year-olds wanted more computer labs and L&IT training.
- 70% of respondents never bring laptops to class.
- LMS improve pedagogy through better course organization, transparency, accountability, and student engagement.
- The more students use an LMS the more they like it.

Related Indicators

National Education Technology Plan	California Community Colleges Student Success Task Force	District Strategic Themes	Coastline Strategic Initiatives
1, 4, 5, 6	**1, 2, 3, 4**	**1, 6**	**1, 4**

Benefits

- Articulated services expectation and standards.
- Develop policies and guidelines specific to the technology
- Elimination of delays in processes and services.
- Enhanced system capabilities.
- Improved planning to implement technology in support of learning.
- Share best/exemplary practices
- Ubiquitous Computing for mobile and wireless devices.
- Use common processes and tools that can be personalized by course.

Goals

1. **Asset Management (Hardware, Software, & Systems)** – Evaluate and implement systems and/or processes to improve cost effective and efficient technology-based assets management.

Key Performance Indicator(s)	1. Number (#) of new assets management initiatives implemented. 2. Percentage (%) of managers ranking assets management systems/processes as highly effective and/or outstanding.

   a. **Assets Management Needs Assessment/Analysis** – Identify and analyze options, solutions, and exemplary practices for improving and/or implementing comprehensive assets management systems, services, and processes.
   b. **Assets Management Cost Analysis** – Analyze the overall cost-effectiveness (include TCO, e.g., acquisition, staffing requirements, training, maintenance, licensing, hardware, cost avoidance or savings, etc.) of the most promising assets management systems, services, and processes that improve organizational efficiency and cost effectiveness.
   c. **Assets Management Roadmap/s** – Develop roadmap/s to implement and/or leverage recommended assets management systems to improve and/or promote organization efficiency and cost effectiveness.
   d. **Content Management Technology** – Employ content management technology to provide consolidated management of College digital assets. Enable users to create, edit, manage, and publish content in a consistent and organized fashion, and provide integration with enterprise security and search technologies.
   e. **Intelligent Resource Management** – Implement a resource tracking system that will track and document the utilization of resources (people, time, money, software and hardware) thereby aiding the organization in tracking and effectively managing its resources.
   f. **Product Evaluation Process and Template** – Create a formalized product evaluation process and set of templates for use in the evaluation of technology products.

2. **Digital Asset Management (Content/Intellectual Property)** – Evaluate, improve, and ensure assets management for all volatile and non-volatile digital assets ensuring access and external/secure backup throughout the appropriate resource life cycle.   Ensure appropriate rights management and tracking of all assets stored and retained on College systems.

Key Performance Indicator(s)	1. Percentage (%) of faculty, staff, and managers ranking digital assets management systems/processes as highly effective and/or outstanding.

   a. **Digital Assets Management Needs Assessment/Analysis** – Identify and analyze options, solutions, and exemplary practices for improving and/or implementing comprehensive digital assets management systems, services, and processes.
   b. **Digital Assets Management Cost Analysis** – Analyze the overall cost-effectiveness (include TCO, e.g., acquisition, staffing requirements, training, maintenance, licensing, hardware, cost avoidance or savings, etc.) of the most promising digital assets management systems, services, and processes that improve organizational efficiency and cost effectiveness.
   c. **Digital Assets Management Roadmap/s** – Develop roadmap/s to implement and/or leverage recommended digital assets management systems to improve and/or promote organization efficiency, cost effectiveness, and compliance (security and IP).
   d. **Institutional Data Growth & Security** – Develop a roadmap to address institutional data growth and security

e. **Data Growth Patterns** – Analyze data growth rates and patterns for both instructional and non-instructional areas to project future growth trends, security issues, and future storage requirements.

f. **Data Usage Lifecycle, Define** – Work with data owners and data retention specialists to define a data usage lifecycle policy for all classified/sensitive data. The lifecycle includes creation, retention, and destruction.

g. **Enterprise Search** – Enterprise search provides the capability to securely index and search all of the College's digital assets. By providing all of the information that employees need to be productive through a single easy-to-use search box, users are able to quickly find the information they need and be more productive in their work.

h. **Datacenter Storage, Centralize** – Implement centralized datacenter storage system to provide cost-effective, centrally managed, shared-storage infrastructure for College-wide projects.

3. **Audit Processes, Compliance** – Review/analyze requirements and options and establish a cost effective and efficient audit processes to validate college compliance for all learning and information technology systems, services, and processes.

Key Performance Indicator(s)	1. Number (#) of recommended corrective actions resulting from external audit review.

a. **Audit Compliance Needs Assessment/Analysis** – Identify and analyze options, solutions, and exemplary practices for improving and/or implementing comprehensive audit compliance systems, services, and processes.

b. **Audit Compliance Cost Analysis** – Analyze the overall cost-effectiveness (include TCO, e.g., acquisition, staffing requirements, training, maintenance, licensing, hardware, cost avoidance or savings, etc.) of the most promising audit compliance systems, services, and processes.

c. **Audit Compliance Roadmap/s** – Develop roadmap/s to implement and/or leverage recommended audit compliance systems to improve and/or promote organization efficiency.

d. **Audit Inquires** – Implement processes and systems to enable and ensure prompt and efficient responses to learning and/or information technology audit inquires.

e. **External Audit, Perform** – Implement information security assessment conducted by an independent, certified external consulting organization (e.g. Computer Security Institute (CSA) or Information Systems Audit and Control Association (ISACA).

f. **Compliance Documentation** – Develop strategies and systems to automate the collection of documentation necessary to respond to audit inquiries.

g. **Compliance** – Establish and maintain processes and procedures to ensure compliance with evolving District, State, and Federal regulations relating to information resources management, security, and accessibility.

4. **Backup & Recovery** – Update, modernize, and consolidate College's backup and recovery technologies. Investigate cloud-based options.

Key Performance Indicator(s)	1. Number (#) of new backup and recovery initiatives implemented. 2. Percentage (%) of Faculty and staff ranking backup and recovery systems/processes as highly effective and/or outstanding.

a. **Backup and Recovery Needs Assessment/Analysis** – Identify and analyze options, solutions, and exemplary practices for improving and/or implementing comprehensive backup and recovery systems, services, and processes.

b. **Backup and Recovery Cost Analysis** – Analyze the overall cost-effectiveness (include TCO, e.g., acquisition, staffing requirements, training, maintenance, licensing, hardware, cost avoidance or

savings, etc.) of the most promising backup and recovery systems, services, and processes that improve organizational efficiency and effectiveness.

   c. **Backup and Recovery Roadmap/s** – Develop roadmap/s to implement and/or leverage recommended backup and recovery systems to improve and/or promote organization efficiency and cost effectiveness.

   d. **Consolidated Backup/Recovery Solution, Implement** – Evaluate and implement backup and recovery solution to replace/update existing systems.

5. **Banner Upgrades** – Research value-added technology-based academic and management solutions that integrate with Banner thereby benefiting students and/or improving department efficiency.

Key Performance Indicator(s)	1. Number (#) of new Banner initiatives implemented.

   a. **Banner Upgrades Needs Assessment/Analysis** – In collaboration with College and District Continuous Improvement Teams analyze options, solutions, and exemplary practices for improving and/or implementing Banner module upgrades and/or expansion.

   b. **Banner Upgrades Cost Analysis** – Analyze the overall cost-effectiveness (include TCO, e.g., acquisition, staffing requirements, training, maintenance, licensing, hardware, cost avoidance or savings, etc.) of the most promising Banner upgrades.

   c. **Banner Upgrades Roadmap/s** – Develop roadmap/s to implement and/or leverage recommended Banner upgrades/expansion to improve organization efficiency.

   d. **ERP Expansion Assessment** – Research ERP modules such as *DegreeWorks*, Student Educational Plans, Workflow, Events Management, etc., for potential deployment including implementation and training challenges.

   e. **Financial Aid System Replacement** – Evaluate and recommend a replacement Financial Aid System compatible with existing Enterprise Resource Planning (ERP) system.

   f. **OCR & WebForm, Banner** – Exploit capability and cost effectiveness of Axiom OCR and WebForm to capture/input information (paper-based and online) and send it to Banner.

6. **Business Continuity and Disaster Recovery** – Develop business continuity and disaster recovery strategy and plan for all learning and information technology services and systems covering business resumption, recovery, and operational contingencies.

Key Performance Indicator(s)	1. Number (#) of L&IT business interruptions encountered. 2. Percentage (%) of Faculty, staff, and manager business continuity planning and recovery systems/processes as highly effective and/or outstanding.

   a. **Business Continuity and Disaster Recovery Needs Assessment/Analysis** – Identify and analyze options, solutions, and exemplary practices for implementation of a comprehensive Business Continuity Plan (BCP) and related processes, systems, and services.

   b. **BCP Cost Analysis** – Analyze the overall cost-effectiveness (include TCO, e.g., acquisition, staffing requirements, training, maintenance, licensing, hardware, cost avoidance or savings, etc.) of the most promising BCP & DRP strategies and related processes, systems, and services.

   c. **BCP Roadmap/s** – Develop roadmap/s to implement and/or leverage recommended BCP & DRP strategies and related processes, systems, and services.

   d. **Develop & Implement BCP**

      1) **BCP Phase 1** – Conduct needs analysis consisting of impact analysis, threat analysis, impact scenarios, and documentation of recovery requirements.

      2) **BCP Phase 2** – Identify the most cost effective solution/s that meets critical requirements identified in the needs analysis.

3) **BCP Phase 3** – Implement initiatives/activities identified in the Phase 2.
4) **BCP Phase 4** – Maintain and regularly test systems and processes.

e. **Criticality Classifications** – Implement criticality classification system wherein all applications and data are classified according to operational criticality. Determine criticality in terms of number of days or hours the College could reasonably afford to be without access and still continue normal business operations.

f. **IT Recovery Plans, Schedule Annual Rehearsals** – Conduct annual rehearsals of all IT recovery plans to ensure that plans and staff are up-to-date.

g. **Off-Site Location, Select** – Establish an off-site disaster recovery center to host the College's recovery systems and services (The ideal center will offer a secure, highly available environment at a reasonable cost that is geographically separate from the College so as not to be impacted by any natural disaster that affects the College.).

h. **Off-Site Replication, Implement** – Implement off-site replication for all applications and data, as specified by the recovery and business continuity plans, when time objectives cannot be achieved using a traditional backup and recovery scenario (Data and applications in this category will be replicated to the selected off-site location on a continuous basis).

i. **Catalog of Deployed Services** – Create a catalog of all IT services for the purpose of risk assessment.

7. **Business Process Delivery** – Evaluate processes and systems to streaming registration, room scheduling, curriculum review, enrollment management, etc., in collaboration with District, OCC, and GWC.

Key Performance Indicator(s)	1. Number (#) of new business process delivery initiatives implemented. 2. Percent (%) of faculty, students, staff, and manager that rank business process delivery as high and/or outstanding.

a. **Business Process Delivery Needs Assessment/Analysis** – In collaboration with College and District Continuous Improvement Teams analyze options, solutions, and exemplary practices for improving "business process delivery" systems, services, tools, and processes.

b. **Business Process Delivery Cost Analysis** – Analyze the overall cost-effectiveness (include TCO, e.g., acquisition, staffing requirements, training, maintenance, licensing, hardware, cost avoidance or savings, etc.) of new and emerging "business processes delivery" systems.

c. **Business Process Delivery Roadmap/s** – Develop roadmap/s to implement and/or leverage recommended "business process delivery" systems, services, tools, and processes.

d. **Appointment Reminder System, Automated** – Develop and deploy and integrate dynamic appointment reminder system assessable via voice call, text, or the web.

e. **Create Schedule** – Investigate and develop and/or acquire automated schedule planning systems/features integrated with Banner and/or Luminous.

f. **Assessment & Registration, Remote** – Evaluate technologies to improve off-site assessment and registration using mobile and/or web-based technologies.

g. **Enrollment Management** – Automate and optimize the college's enrollment management process.

8. **Copiers/Printer/Fax** – Evaluate copier and printer costs to ensure cost effective and efficient utilization.

Key Performance Indicator(s)	1. Cost saving/avoidance ($) resulting from new copier, print, and/or fax utilization initiatives. 2. Percent (%) of faculty, staff, and managers that rank print, copiers, and fax services as high or outstanding.

a. **Copiers/Printer/Fax Needs Assessment/Analysis** – Identify and analyze options, solutions, and exemplary practices for improving and/or implementing cost effective copier, print, and fax utilization.

Consider any collateral systems, resources, materials, support services, etc., that will be impacted and/or necessary.

b. **Copiers/Printer/Fax Analysis** – Analyze the overall cost-effectiveness (include TCO, e.g., acquisition, staffing requirements, training, maintenance, licensing, hardware, cost avoidance or savings, etc.) of the most promising copier, print, and fax utilization processes, systems, tools, and practices and necessary collateral systems.

c. **Copiers/Printer/Fax Roadmap/s** – Develop roadmap/s to implement and/or leverage recommended copier, print, and fax utilization systems to improve and promote efficiency and cost effectiveness.

h. **Copier Contracts** – Investigate and identify cost and utilization benefit of unifying all copier contracts.

i. **Copier ROI** – Negotiate with one copier vendor to achieve best possible pricing with most capability/capacity collegewide.

j. **Copier Utilization** – Acquire list of all copiers along with compete utilization reports and contracts.

k. **Fax & Print Services** – Reduce cost and improve efficiency of fax and print services through selective upgrades and consolidation.

l. **Volume Printing** – Centralize printing in order to improve service and reduce costs.   Existing printing solutions that utilize personal printers with inkjet technology are cost prohibitive. Utilizing department and/or area-based laser printing technology will substantially reduce costs.

m. **Standardization** – Define a common hardware framework for Print, Fax and Multifunction devices in order to reduce the variety of devices, interfaces, and supplies. This will greatly simplify the usage of and reduce the operating costs of these systems.

n. **Web-based Reporting** – Establish and encourage web-based reporting to reduce paper use and the costs associated with printing and distributing reports while improving staff productivity with enhanced report management tools.*

o. **Personal Virtual Fax Service, Centralize** – Evaluate and implement virtual personal fax technology to reduce operating costs and improve functionality. Technology will enable employees to review, send, and receive faxes from their desktop computer, mobile device, or from a shared multi-function device. When implemented each employee, group, or function will have a dedicated fax number that allows for electronic handling of incoming and outgoing faxes. This will eliminate the need for fax machines in most scenarios.

9. **Customer Focused L&IT** – Design and provide learning and information technology solutions that are customer focused and driven by the needs of the College and its students, faculty, and staff.

Key Performance Indicator(s)	1. Percent (%) of students that rank the academic planning systems as a positive and supportive tool for ensuring and sustaining student success.

a. **Customer Focused L&IT Services & Systems Needs Assessment/Analysis** – Identify and analyze options, solutions, and exemplary practices for improving and/or implementing cost effective customer focused learning and information technology services and systems including collateral processes, resources, materials, systems, and/or support services.

b. **Customer Focused L&IT Services & Systems Analysis** – Analyze the overall cost-effectiveness (include TCO, e.g., acquisition, staffing requirements, training, maintenance, licensing, hardware, cost avoidance or savings, etc.) of the most promising customer focused learning and information technology services and systems.

c. **Customer Focused L&IT Services & Systems Roadmap/s** – Develop roadmap/s to implement and/or leverage recommended customer focused learning and information technology services and systems to improve and promote efficiency and cost effectiveness.

d. **Categorize Users** – To improve efficiency and improve user support, evaluate and categorize users as high end users or average users and design and deploy support systems targeted to more effectively serve needs.
e. **Videoconferencing** – Reducing the cost of travel and meeting attendance by providing desktop conferencing or TelePresence solutions and technical support for regular meetings and training activities by college constituents.
f. **Web-based Computing** – Capitalize on new web-based desktop/web top technologies, such as *Google Desktop* or *eyeOS* to provide flexible and cost-effective alternatives to the traditional desktop experience, while significantly improving the end-user experience and overall services.

10. **Service-Based Organization** – Transform the Office of Learning and Information Technologies (OL&IT) into a service-based organization, e.g., end users don't care about technology; they need/want services.

Key Performance Indicator(s)	1. Percent (%) of faculty, staff, and managers that rank OL&IT services as high and/or outstanding.
	2. Percent (%) of students that rank L&IT services and support as high and/or outstanding.

a. **Service-Based Organization Needs Assessment/Analysis** – Identify and analyze options, solutions, and exemplary practices for converting OL&IT into a Service-Based Organization to promote improved customer support and service oriented outcomes.
b. **Service-Based Organization Analysis** – Analyze the overall cost-effectiveness (include TCO, e.g., acquisition, staffing requirements, training, maintenance, licensing, hardware, cost avoidance or savings, etc.) of the most promising Service-Based Organization strategies and processes.
c. **Service-Based Organization Roadmap/s** – Develop roadmap/s to implement and/or leverage the most promising Service-Based Organization strategies and processes.
d. **ITIL Implementation, Develop a Plan** – Develop implementation plan for the adoption of the Information Technology Infrastructure Library (ITIL), e.g., industry standards and best practices for managing information technology (IT) infrastructure, development, and operations focusing on the "Service," not the "Technology."
e. **Service Level Agreements for IT Services** – Develop and implement service-level agreements for key IT-delivered services, networks, and servers. In the process, establish performance metrics to measure L&IT success, e.g., up-time, response-time, throughput, availability, and percentage of un-serviced requests may be among the metrics collected.
f. **Work Request Information, Disseminate –** Develop systems and methodologies to keep stakeholders apprised of the status of pending work requests. Develop and implement service-level agreements for these requests. Performance metrics will be gathered to enable the organization to concretely measure success. For example, response time, completion time, and customer satisfaction may be among the metrics collected.
g. **Software Management** – Develop and implement service-level-agreement covering guidelines and procedures for software acquisition, utilization, training, and build-or-buy decisions.
h. **Formalized Development Methodology** – Implement and apply formal development methodologies for all new software development projects.
i. **Performance Management** – Implement services to monitor, analyze, and discover organizational performance metrics. These metrics will drive alignment, accountability, and actionable insight across the entire organization.
j. **L&IT Functions, Define Costs** – Develop a master list of services provided and their associated annual costs. As new services are added, update list.
k. **Innovation, New Technology** – Continually identify new technology-based services, systems, or processes that when shared and/or centralized will improve effectiveness of service, reduce cost, and improve teaching and learning.

l. **Systems Analyst Role** – Evaluate need for Systems Analyst to analyzing program/business needs of departments and/or stakeholders to develop propose solutions.

m. **Interactive Learning** – Establish cost-effective programs for students/faculty to learn and/or acquire innovative interactive learning systems, media, and appliances.

n. **System Development Life Cycle (SDLC)** – Evaluate and adopt life-cycle framework and tool set to help standardize software and hardware development and management practices.

o. **Service Monitoring System** – Implement a service monitoring suite to automatically monitor all L&IT services for availability, response time, and resource availability.

p. **Service Delivery Standards** – Develop, document, and implement a management process that will ensure that all L&IT services are delivered in consistent and manageable way.

q. **System Availability Information, Disseminate** – Provide advance and real-time notification of planned and unplanned system availability (All planned events should be announced at least two weeks prior to the event.).

11. **Emergency Notification** – In collaboration with District, GWC, and OCC establish multimodal technology-based emergency notification system/s.

Key Performance Indicator(s)	1. Percent (%) of students that rank the academic planning systems as a positive and supportive tool for ensuring and sustaining student success.

a. **Emergency Notification Needs Assessment/Analysis** – Identify and analyze new and emerging technology-based options, solutions, and exemplary practices for emergency notification systems, process, and/or tools necessary to ensure student and staff safety and legal compliance.

b. **Emergency Notification Cost Analysis** – Analyze the overall cost-effectiveness (include TCO, e.g., acquisition, staffing requirements, training, maintenance, licensing, hardware, cost avoidance or savings, etc.) of the most emergency notification systems.

c. **Emergency Notification Roadmap/s** – Develop roadmap/s to implement and/or leverage recommended emergency notification systems that will ensure that emergency notifications are distributed in a timely and efficient manner.

d. **Alert System** – Evaluate the capability of existing and new/available digital information systems to establish the feasibility of using these systems as part of a collegewide alert system and/or dynamic information system.

e. **Emergency Notification System, Implement** – Implement a multi-modal Emergency Notification System that enables important emergency messages to be delivered to employees and students in a timely and reliable manner anywhere anytime.

12. **Energy Efficient/Green Initiatives** – Implement systems that reduce waste and maximize efficiency.

Key Performance Indicator(s)	1. Number (#) of new Energy Efficient/Green Initiative implemented. 2. L&IT investment ($) in Energy Efficient/Green Initiatives.

a. **Energy Efficient/Green Initiatives Needs Assessment/Analysis** – Identify and analyze new and emerging energy efficient L&IT solutions and exemplary practices.

b. **Energy Efficient/Green Initiatives Emergency Cost Analysis** – Analyze the overall cost-effectiveness (include TCO, e.g., acquisition, staffing requirements, training, maintenance, licensing, hardware, cost avoidance or savings, etc.) of new and emerging energy efficient L&IT systems/services.

c. **Energy Efficient/Green Initiatives Roadmap/s** – Develop roadmap/s to implement and/or leverage recommended new and emerging energy efficient L&IT systems/services that will promote organizational effectiveness and cost savings.

    d. **Energy Star Compliance** – Ensure that the College purchases only printers, monitors, copiers, fax machines, scanners, laptops, tablets, servers, and PC's that meet current Energy Star specifications.

    e. **Green Initiatives, Technology-Based** – Reduce the cost of electricity, IT support, and system replacement, by instituting VDI.

    f. **Recyclable Assessment** – Investigate options to ensure that vendors offer recyclable and environmental friendly options for all equipment purchases.

    g. **Vendor Selection Process Based on Environmental Friendliness** – Include in purchasing process consideration for products and companies that support "Green IT" manufacturing processes and products.

13. **Enterprise System** – Update, modernize, and consolidate the College's Enterprise System in collaboration with District, GWC, and OCC**.**

Key Performance Indicator(s)	1. Number (#) new enterprise wide initiatives implemented.

    a. **Enterprise System Needs Assessment/Analysis** – In collaboration with College and District Continuous Improvement Teams analyze options, solutions, and exemplary practices for updating, improving, and modernizing the College's enterprise systems, services, and/or processes.

    b. **Enterprise System Cost Analysis** – Analyze the overall cost-effectiveness (include TCO, e.g., acquisition, staffing requirements, training, maintenance, licensing, hardware, cost avoidance or savings, etc.) of enterprise systems, services, and/or processes.

    c. **Enterprise System Roadmap/s** – Develop roadmap/s to implement and/or leverage recommended enterprise systems, services, and/or processes.

    d. **Enterprise Application Integration** – Evaluate and implement an enterprise application integration framework to enable integration of systems and applications across the enterprise.

14. **Governance, L&IT** – Develop and implement comprehensive L&IT governance and management practices.

Key Performance Indicator(s)	1. Percent (%) of faculty, staff, and managers that rank L&IT Governance as high and/or above average.

    a. **L&IT Governance Needs Assessment/Analysis** – In collaboration with OCC, GWC, and District analyze options, solutions, and exemplary practices for updating, improving, and modernizing the College's L&IT Governance structure, relations, processes and/or services.

    b. **L&IT Governance Cost Analysis** – Analyze the overall cost-effectiveness (include TCO, e.g., acquisition, staffing requirements, training, maintenance, licensing, hardware, cost avoidance or savings, etc.) of new and/or revised L&IT Governance systems, services, and/or processes.

    c. **L&IT Governance Roadmap/s** – Develop roadmap/s to implement and/or leverage recommended IT Governance systems, services, and/or processes.

    d. **Align District and Campus L&IT Efforts** – In collaboration with OCC, GWC, and District work to eliminate unnecessary redundancy in the services provided and technologies leveraged.   In collaboration with department and programs collegewide work to eliminate unnecessary redundancy in the services provided and technologies used.

    e. **Bi-annual Review and Revision Process, L&IT** – In collaboration with OCC, GWC, and District provide annual review and recommended revisions for L&IT Policies and Procedures to ensure compliance with District, State, and Federal regulations.   In collaboration with Departments collegewide review and revise L&IT Procedures to ensure compliance with District, State, and Federal regulations.

    f. **Change Management Process, Develop a Configuration** – Develop and implement a set of processes and procedures that will ensure appropriate approval of all changes to L&IT Systems.

g. **Change Management System** – Implement a configuration and change management system to track all changes to L&IT systems and services while ensuring that services are documented, reviewed, and approved prior to implementation.

h. **College-wide Governance Review, L&IT Policies & Procedures** – Workgroup with broad representation to review and revise L&IT Policies and Procedures in collaboration with District, OCC, and GWC.

i. **Integrate Audit Findings into Policy & Procedure Revision Process** – Develop a process to ensure audit findings are addressed in the annual Policy and Procedure revision process to demonstrate remediation of findings.

j. **Standards, L&IT** – Define and develop comprehensive L&IT standards and guidelines consistent with District Policies and standard industry practices.

15. **Resources, L&IT** – Effectively and efficiently manage learning and information technologies resources and systems.

Key Performance Indicator(s)	1. Percent (%) of managers that rank the L&IT Resource Management as high and/or above average.

a. **L&IT Resource Management Assessment/Analysis** – Analyze options, solutions, and exemplary practices for updating, improving, and modernizing the College's L&IT Resource Management, e.g., procedures, practices, processes, structure, relations, systems, and/or services.

b. **L&IT Resource Management Cost Analysis** – Analyze the overall cost-effectiveness (include TCO, e.g., acquisition, staffing requirements, training, maintenance, licensing, hardware, cost avoidance or savings, etc.) of new and/or exemplary practices for updating, improving, and modernizing the College's L&IT Resource Management.

c. **L&IT Resource Management Roadmap/s** – Develop roadmap/s to implement and/or leverage recommended and exemplary practices for updating, improving, and modernizing the College's L&IT Resource Management procedures, practices, processes, structure, relations, systems, and/or services.

d. **Banner Training** – Develop and provide Banner specific training to increase use and productivity.

e. **Banner Training Materials** – Create video training modules to improve and facilitate use of new Banner ERP modules and workflows.

f. **Banner User Collaboration, External** – Improve Banner effectiveness and access to expertise by building channels of communication and reciprocal support agreements with other Banner-based colleges.

g. **Computer Use Report/Analysis** – Develop an ongoing process to create and maintain a complete inventory of all College computers including location, type, age, use, original cost, planned replacement date, and current condition.

h. **Computer Utilization Report** – Develop an ongoing process to create and maintain computer utilization information such as RAM, hours of intense processor utilization, number of concurrent programs opened, and processor use at periodic times throughout the year.

i. **Forms Server**– Evaluate need and ROI for forms server in order to support and improve department process automation. The forms server would provide non-technical users a centralized mechanism for developing and delivering line-of-business applications securely and efficiently. By standardizing and simplifying the creation of commonly needed forms, the number of IT support hours needed to deliver and support these applications will be reduced or eliminated.

j. **Collaboration Infrastructure** – Implement an enhanced collaboration infrastructure that provides advanced content management features, supports business processes automation, and centralized access to information.

k. **Shared Services** – Increase agility, modularity, and reuse of systems using open standards and modular architecture to enable more rapid deployment of IT capabilities, such as service-oriented architecture (SOA).

l. **Database Design Standards** – Define and implement database design standards. These standards cover topics such as data dictionaries, relationships, naming conventions, documentation standards, stored procedure design, and web-enablement.

m. **Database Reporting Services** – Database Reporting Services provide the institution the capability to create, manage, and deliver both traditional, paper-oriented reports, and interactive web-based reports.

n. **Build Standards (Repeatability)** – Develop, document, and implement a set of standards for the consistent, well-known, and repeatable configuration for each technology service provided by L&IT.

o. **Build Standards (Security)** – Information Technology will develop, document, and implement a set of standards for secure server deployments. For example – log management, minimize attack surfaces, appropriate access controls, and auditing.

p. **Data Quality –** Develop, document, and implement standards for the definition, acquisition, and storage of all data elements.

q. **Data Transportation and Storage Policy** – Develop guidelines for the secure transport and storage of data, based on its classification.

r. **Development Standards –** Develop, document, and implement a set of standards for software development including standards for architecture, coding, configurability, documentation, technology, and user experience.

s. **Email and Related Services, Outsource Student** – Evaluate the outsource services model (specifically, Software-as-a-Service) to deliver basic email, collaboration, web, and document management services to students in a reliable and cost-effective way where appropriate.

t. **Room Scheduling** – Optimize the College's current room scheduling process to facilitate automated allocation of room space, based on current demand and historic utilization.

16. **Mobile Devices Business Processing** – Research, analyze and implement solutions to facilitate student access to key resources and business processes using mobile devices from anywhere anytime, e.g., registration, class information, Seaport, etc.

Key Performance Indicator(s)	1. Percent (%) of students, faculty, and staff that rank mobile business processes as high and/or outstanding.

a. **Mobile Device Business Processing Needs Assessment/Analysis** – Identify and analyze options, solutions, and exemplary practices for implementing mobile business process support and services.

b. **Mobile Device Business Processing Cost Analysis** – Analyze the overall cost-effectiveness (include TCO, e.g., acquisition, staffing requirements, training, maintenance, licensing, hardware, cost avoidance or savings, etc.) of the most promising mobile business process support and services.

c. **Mobile Device Business Processing Roadmap/s** – Develop roadmap/s to implement and/or leverage recommended mobile business process support and services.

d. **Mobile Registration & Assessment** – Evaluate mobile technology options to enhance off-site assessment and registration.

e. **Mobile Access** – Provide students support services via mobile devices, e.g., registration, counseling, financial aid, etc.

f. **Mobile Apps Needs Assessment** – Work with all college constituents to develop a needs assessment to identify mobile services/apps for college-wide support.

g. **Mobile Apps, Standard** – Establish standards for development of mobile apps ensuring integration with existing systems/infrastructure.

17. **Mobile Friendly Environment** – Design and implement mobile friendly environment, systems, and processes.

Key Performance Indicator(s)	1. Percent (%) of students that rank the college's mobile environment as a friendly and supportive tool for ensuring and sustaining student success.

a. **Mobile Friendly Environment Needs Assessment/Analysis** – Identify and analyze options, solutions, and exemplary practices for implementing a mobile friendly environment for all customers, e.g., students, faculty, staff, managers, partners, and college supporters.
b. **Mobile Friendly Environment Cost Analysis** – Analyze the overall cost-effectiveness (include TCO, e.g., acquisition, staffing requirements, training, maintenance, licensing, hardware, cost avoidance or savings, etc.) of implement the most promising mobile friendly environments for all customers.
c. **Mobile Friendly Environment Roadmap/s** – Develop roadmap/s to implement and/or leverage recommended mobile friendly environments for all customers.
d. **Mobile - Create Friendly Study Areas –** In order to support promising mobile friendly environments for all customers, expand/update current electrical infrastructure by providing powered work/study areas, i.e., clusters of tables, mobile carrels, etc., with multiple power outlets for use by mobile users public or shared areas.
e. **Mobile Devices, Reduced Rate Plan** – Leverage the college's purchasing power to provide cost effective rate plans for students, faculty, and staff using personal mobile devices.
f. **Mobile OS Assessment** – Continuously review research regarding growth patterns of mobile operating systems such as Android, iOS, Blackberry, Windows, and others.

18. **Network Topology** – Improve reliability, flexibility, efficiency, and cost effectiveness of CCCs overall network and related infrastructure.

Key Performance Indicator(s)	1. Percent (%) of students that rank the academic planning systems as a positive and supportive tool for ensuring and sustaining student success.

a. **Network Topology Needs Assessment/Analysis** – Identify and analyze options, solutions, and exemplary practices for improving and/or updating the college's network topology to promote improved customer support and service.
b. **Network Topology Analysis** – Analyze the overall cost-effectiveness (include TCO, e.g., acquisition, staffing requirements, training, maintenance, licensing, hardware, cost avoidance or savings, etc.) of the most promising network topologies.
c. **Network Topology Roadmap/s** – Develop roadmap/s to implement and/or leverage the most promising network topology strategies, systems, and services.
d. **Network** – Analyze existing network topology to determine areas that can be effectively secured by hardware and/or software solutions and offer increased return-on-investment by reducing management overhead.
e. **Network Service Metrics, Quantify and Validate** – Define and validate measurable benchmarks of network service delivery to identify standard levels of service and provide for the enhancement of underserved segments.
f. **Network Bandwidth** – Providing a network bandwidth solution that can support the need for high-speed multimedia applications to the desktop including effective educational applications of web 2.0, just-in-time help, and self-help to improve critical skills.
g. **Network Equipment, Upgrade** – Upgrade core network equipment in order to support higher speeds, increase availability, and functional features that will enhance the reliability, manageability, and security of the network and its services.

    h.   **Conduit & Wiring Infrastructure** – Update and modernize College's network conduit and wiring infrastructure. Deprecated network wiring must be identified and removed to prevent conduit jams and to ensure compliance with local, state, and federal electrical and fire codes.

    i.   **Server Utilization** – Implement efficient and cost effective *server utilization strategies* that enhance and enable maximum systems use while minimizing direct staff support through remote management within the server environment.

    j.   **Sever Report/Analysis** – Create a report for all servers detailing age, acquisition cost, location, type/description, current condition, and end-of-life date, in addition indicate location in collateral network topology diagram.

    k.   **Increased Network Capacity** – Evaluate and upgrade at-capacity and near-capacity physical networks to ensure the network has the available flexibility and capacity needed for future applications and services.

    l.   **Routers and Switches Report/Analysis** – Create an inventory and use report for all routers and switches including their age, acquisition cost, end of life date, location, and current condition.

19. **Outsource Service/s** – Develop plans to outsource L&IT support and services as appropriate.

Key Performance Indicator(s)	1. Number (#) of new outsourcing initiatives implemented.
	2. Saving/Cost Avoidance ($) generated via outsourcing.

    a.   **Outsource Service/s Needs Assessment/Analysis** – Identify and analyze options, solutions, and exemplary practices for outsourcing L&IT support, services, processes, programs, etc., to promote improved customer support and service and reduce overall costs.

    b.   **Outsource Service/s Analysis** – Analyze the overall cost-effectiveness (include TCO, e.g., acquisition, staffing requirements, training, maintenance, licensing, hardware, cost avoidance or savings, etc.) of the most promising outsourcing strategies, systems, and/or services.

    c.   **Outsource Service/s Roadmap/s** – Develop roadmap/s to implement and/or leverage the most promising outsourcing strategies, systems, and/or services.

    d.   **Build Relations** – **Telecommunications and Datacenter Service providers** – Explore relationships with external telecommunications and datacenter facility providers to explore the feasibility of outsourcing non-strategic services that improve services and reduce costs.

    e.   **Consulting Services to Address Gaps in Strategic Areas, Leverage** – Leverage L&IT consulting services/support to address critical gaps in college expertise and/or to achieve strategic time sensitive objectives.

20. **Acquisition & Replacement Life Cycle** – Implement an acquisition, maintenance, and replacement process and cycle for college systems that provide the infrastructure necessary to support the college today and in the future (e.g., networking equipment, servers, and software).

Key Performance Indicator(s)	1. Percent (%) managers ranking L&IT acquisition, maintenance, and replacement life cycle management processes and strategies as high and/or above average.

    a.   **Acquisition & Replacement Life Cycle Needs Assessment/Analysis** – Identify and analyze options, solutions, and exemplary practices for improving and/or updating the college's acquisition and replacement system life cycle to promote improved customer support/service and reduce/contain overall costs.

    b.   **Acquisition & Replacement Life Cycle Analysis** – Analyze the overall cost-effectiveness (include TCO, e.g., acquisition, staffing requirements, training, maintenance, licensing, hardware, cost avoidance or savings, etc.) of the most promising strategies for acquisition and replacement system life cycle management.

c. **Acquisition & Replacement Life Cycle Roadmap/s** – Develop roadmap/s to implement and/or leverage the most promising acquisition and replacement system life cycle management strategies.
d. **Replacement Schedule** – Develop replacement strategy, schedule, and budget for all equipment.
e. **Replacement Cycle** – Develop a Replacement Cycle for printers, projectors, copiers and other classroom technology.
f. **Replacement Schedule, Classroom Systems** – Develop a replacement and cost schedule for all classroom technology.
g. **Computer Replacement, Desktop/Portable** – Develop and implement a maintenance and replacement cycle for faculty, staff, and administrative computer systems and software.
h. **Eliminate Redundancy** – Eliminate duplicate or unused software and hardware and look for opportunities to leverage the College/District's size and combined purchasing.
i. **Hardware Inventory System** – Implement a comprehensive and automated (to the extent possible by current technology) hardware and software inventory system.   Collect current location, type of hardware, capability, original cost, age, condition, replace date, and current utilization.
j. **Firewall Assessment/Evaluation** – Research current firewall specifications, age, condition, and costs to determine the feasibility and advisability of acquiring new systems to improve security for the college.

21. **Security Assurance** – Create a risk-based security assurance function and process insuring that there is a clear understanding of program risks and uncertainties and a clear indication of whether or not the program is on track for success.

Key Performance Indicator(s)	1. Number (#) of unresolved threats and or risk-based issues reported.

a. **Security Assurance Needs Assessment/Analysis** – Identify and analyze options, solutions, and exemplary practices for improving and/or updating the college's risk-based security assurance function and process.
b. **Security Assurance Analysis** – Analyze the overall cost-effectiveness (include TCO, e.g., acquisition, staffing requirements, training, maintenance, licensing, hardware, cost avoidance or savings, etc.) of the most promising strategies to improve risk-based security assurance functions and processes.
c. **Security Assurance Roadmap/s** – Develop roadmap/s to implement and/or leverage the most promising risk-based security assurance strategies, systems, and services.
d. **Asset Classification for Deployed Services** – Assign all deployed assets and services a classification to establish a basis for the overall risk levels assigned to systems.
e. **Authentication** – Implement strong authentication systems for services as required by classification, i.e., RSA tokens, digital signatures, or other multi-factor authentication systems.
f. **Data Cleansing** – Develop and implement processes to remove Personally Identifiable Information (PII) from non-production systems.
g. **Data Usage Lifecycle, Define** – Work with data owners and data retention specialists to define a data usage lifecycle policy for all classified data including creation, retention, and destruction.
h. **Mobile Devices, Threat Assessment** – Research and recommend hardware and/or software to handle security threats posed by mobile devices.
i. **Smartphone/Mobile Devices, Standards & Guidelines/Policies** – Develop standards and guidelines for use and/or access of mobile device technologies at the college consistent with recommend/adopted District policies on mobile device security and risks assessment.
j. **Staff Training Plan, Security & Storage** – Work with Faculty Support Staff to create a training program that addresses data security and storage for all staff.

22. **Security Controls, L&IT** – Investigate and establish technical controls that secure learning and information technology assets in accordance with security policy, procedure and guidelines.

Key Performance Indicator(s)	1. Number (#) of new technical security controls established.

    a. **L&IT Security Controls Needs Assessment/Analysis** – Identify and analyze options, solutions, and exemplary practices for implementing technical controls that secure learning and information technology assets.

    b. **L&IT Security Controls Cost Analysis** – Analyze the overall cost-effectiveness (include TCO, e.g., acquisition, staffing requirements, training, maintenance, licensing, hardware, cost avoidance or savings, etc.) of the most promising technical controls to secure learning and information technology assets.

    c. **L&IT Security Controls Roadmap/s** – Develop roadmap/s to implement and/or leverage recommended technical controls that secure learning and information technology assets.

    g. **Data Ownership, Data Collection, and Data Usage Rights** – Identify data owners, stakeholders, and/or responsible parties for protection and access delegation to College data.   Define standards for appropriate use.

    h. **Develop Well-Defined Roles for All Departments** – In collaboration with College departments define roles based on employee function for the purpose of standardizing and automating security provisioning.

    i. **Deployed Services, Establish Baselines** – Monitor deployed services for compliance with established Policies, Procedures, and Guidelines.

    j. **Identity and Location-based Zoning, Implement** – Implement a network technology that enables access to network resources based on the user's identity and location.

    k. **Identity Management System** – Implement an identity management system to provide "hire to retire" identity management for all users.

    l. **Identity Management** – Investigate and establish identity management systems and controls that ensure proper identification, credential, and/or de-provisions of system users in accordance with security policy, procedure and guidelines.

    m. **Appropriate Use of Credentials** – Implement controls to ensure that credentials are issued for a specific purpose and are used exclusively for that purpose. For example – Processes that ensure service accounts are to be used exclusively by the service or for installation/upgrade.

    n. **Physical Security Measures** – Ensure that all L&IT assets containing sensitive data or that provide services are securely housed and protected from loss and tampering. Implement appropriate security measures in accordance with industry standards and best practices to ensure minimal access to IT assets.

    o. **Secure Communications** – Ensure that all network communications that contain sensitive information implement appropriate security and encryption (e.g., SSL, IPSec, VPN) and deprecation of insecure protocols.

23. **Security Incident Response, IT** – In compliance with District policy and Federal and State regulations establish Security Incident Response Team including processes and guidelines based on recognized best practices.

Key Performance Indicator(s)	1. Percent (%) of managers and staff that rank the security incident response functions and processes as high and/or outstanding.

    a. **Security Incident Response Needs Assessment/Analysis** – Identify and analyze options, solutions, and exemplary practices for improving and/or updating the college's security incident response functions and processes.

    b.   **Security Incident Response Analysis** – Analyze the overall cost-effectiveness (include TCO, e.g., acquisition, staffing requirements, training, maintenance, hardware, cost avoidance or savings, etc.) of the most promising strategies to improve security incident response functions and processes.

    c.   **Security Incident Response Roadmap/s** – Develop roadmap/s to implement and/or leverage the most promising security incident response functions and processes.

    d.   **CSIRT Activities, Establish Clear Links between College Processes** – Educate management stakeholders, constituencies, and others who need to know and understand the operations of the Computer Security Incident Response Team (CSIRT).

    e.   **CSIRT Team, Create** – Establish College policy, procedure, guidelines through best practices and documentation with respect to incident response to create, educate, and empower a CCC CSIRT team.

24. **Retention/Capacity, OL&IT** – Develop staff transition and retentions plan.

Key Performance Indicator(s)	1. Percent (%) of students that rank the academic planning systems as a positive and supportive tool for ensuring and sustaining student success.

    a.   **OL&IT Retention/Capacity Needs Assessment/Analysis** – Identify and analyze options, solutions, and exemplary practices for L&IT staff development and retention.

    b.   **OL&IT Retention/Capacity Cost Analysis** – Analyze the overall cost-effectiveness of staff development, training, and retention strategies to improve L&IT capabilities.

    c.   **OL&IT Retention/Capacity Roadmap/s** – Develop roadmap/s to implement and/or leverage the most promising staff development and retention strategies.

    d.   **Staffing** – Recruit and develop the best learning and information technology staff statewide.

    e.   **Career Advancement** – Proactively support structures and processes to facilitate career path development (vertical and horizontal) for current employees.

25. **Software Infrastructure** – Evaluate and enhance the College's software acquisition, tracking/inventory control, licensing, replacement, utilization, and support infrastructure to ensure productivity, efficiently, and cost effectiveness.

Key Performance Indicator(s)	1. Percent (%) of students, faculty, staff, and managers that rank the college's software infrastructure and systems as high or outstanding.

    a.   **Software Needs Assessment/Analysis** – Identify and analyze options, solutions, and exemplary practices for improving and/or implementing new/expanded software acquisition, tracking/inventory control, licensing, replacement, utilization, and support infrastructure strategies to improve college productivity, efficiency, and cost effectiveness.

    b.   **Software Cost Analysis** – Analyze the overall cost-effectiveness (include TCO, e.g., acquisition, staffing requirements, training, maintenance, licensing, hardware, cost avoidance or savings, etc.) of implementing the most promising software acquisition, tracking/inventory control, licensing, replacement, utilization, and support infrastructure to improve college productivity, efficiency, and cost effectiveness..

    c.   **Software Roadmap/s** – Develop roadmap/s to implement and/or leverage recommended software acquisition, tracking/inventory control, licensing, replacement, utilization, and support infrastructure.

    d.   **Software Acquisition** – Implement a college-wide *software acquisition* process in collaboration with the District, GWC, and OCC that leverages overall purchasing power that lowers cost and increases capacity/resources.

   e. **Software Training** – Evaluate and develop *District-wide training initiative* for shared/common productivity and teaching and learning software.
   f. **Financial Aid** – Update, modernize, and consolidate College's Financial Aid system in collaboration with District, GWC, and OCC.
   g. **Software Acquisition Process** – Collaborate with wings, academic departments, shared governance committees/groups*, Distance Learning & Technology Committee (DL&TC), Budget Committee (BC), and Planning, Institutional Effectiveness and Accreditation Committee (PIEAC)* to develop and ratify a software acquisition process including acquisition prioritization and allocation of funds for purchase and/or replacement.
   h. **Software Acquisitions, College/District wide** – Develop process and collaboration necessary to negotiate future major software acquisitions as one entity versus separate department and/or colleges thereby leveraging overall purchasing power.
   i. **Software Inventory** – Conduct software inventory to identify all software installed on campus computers, compile type/purpose, location, original acquisition cost, age, type of license, level of usage/need, and replacement date.

26. **Digital Information Display Systems** – Implement *digital information display systems* (signs and/or display systems) that provide information and marketing content to students, faculty and staff.

Key Performance Indicator(s)	1. Percent (%) of students, faculty, staff, and managers that rank the college's digital information display systems as high or outstanding.

   a. **Digital Information Display Systems Needs Assessment/Analysis** – Identify and analyze options, solutions, and exemplary practices for implementing digital information display systems that provide information and marketing content to students, faculty and staff.
   b. **Digital Information Display Systems Cost Analysis** – Analyze the overall cost-effectiveness (include TCO, e.g., acquisition, staffing requirements, training, maintenance, licensing, hardware, cost avoidance or savings, etc.) of the most promising digital information display systems.
   c. **Digital Information Display Systems Roadmap/s** – Develop roadmap/s to implement and/or leverage recommended digital information display systems assets.
   d. **Digital Display** – Research vendors who offer digital signage for internal and external use.
   e. **Digital Display Utilization** – Develop a plan to target areas where digital signage will most effectively support student needs.

27. **Virtual Desktop Infrastructure (VDI)** – Develop plans to adopt and implement a Virtual Desktop Infrastructure to enhance the college's learning and work environment while lowering the total cost-of-ownership and increasing efficiencies.

Key Performance Indicator(s)	1. Percent (%) of students, faculty, staff, and managers that rank the college's VDI as high or outstanding.

   a. **Virtual Desktop Infrastructure Needs Assessment/Analysis** – Identify and analyze options, solutions, and exemplary practices for implementing Virtual Desktop Infrastructures that enhance a college's learning and work environment.
   b. **Virtual Desktop Infrastructure Cost Analysis** – Analyze the overall cost-effectiveness (include TCO, e.g., acquisition, staffing requirements, training, maintenance, licensing, hardware, cost avoidance or savings, etc.) of the most promising Virtual Desktop Infrastructure systems and services.
   c. **Virtual Desktop Infrastructure Roadmap/s** – Develop roadmap/s to implement and/or leverage recommended Virtual Desktop Infrastructure systems and services.

    d.   **Virtual desktop infrastructure** – Analyze infrastructure (bandwidth) to determine if it will support VDI implementation without compromising computer processing speed.

    e.   **Virtual desktop infrastructure** – Analyze whether VDI technology can meet the needs of the average user (faculty/staff) instead of a full desktop computer based on department and/or software needs.

    f.   **Virtual Lab Assessment** – In conjunction with instruction (administrators, department chairs, and faculty), develop a list of instructional labs and disciplines/classes that will benefit from virtualization.

28. **Virtualization** – Implement virtual server infrastructure in support of teaching and learning and administrative operations to reduce overall cost of equipment, space, electrical power, and L&IT support.

Key Performance Indicator(s)	1. Number (#) of department and/or programs utilizing virtualized systems.

    a.   **Virtualization Needs Assessment/Analysis** – Identify and analyze options, solutions, and exemplary practices for implementing virtual server infrastructure that supports teaching and learning and administrative operations while reducing overall cost of equipment, space, electrical power, and L&IT support.

    b.   **Virtualization Cost Analysis** – Analyze the overall cost-effectiveness (include TCO, e.g., acquisition, staffing requirements, training, maintenance, licensing, hardware, cost avoidance or savings, etc.) of the most promising virtual server infrastructure that supports teaching and learning and administrative operations.

    c.   **Virtualization Roadmap/s** – Develop roadmap/s to implement and/or leverage recommended virtual server infrastructure that supports teaching and learning and administrative operations while reducing overall cost of equipment, space, electrical power, and L&IT support..

    d.   **Virtualization Plan** – Work with academic administrators to develop a virtualization plan for each discipline.

    e.   **Virtualization** – Explain/champion the benefits of virtualization to knowledge leaders, faculty, administrators, and constituency groups.

    f.   **Virtualization Lab Expansion** – Evaluate response times and experiences of students and instructors in virtualized labs. Based on favorable evaluations develop plans to expand virtualization.

    g.   **Lab Virtualization** – Virtualize computer labs and other appropriate learning and/or work environment to ensure cost effective and efficiency utilization of resources.

    h.   **Virtualized Labs** – Ensure that virtualized labs serve multiple disciplines and faculty.

29. **Web Presence** – Analyze and *enhance/upgrade* the architecture and effectiveness of the College's *web presence*.

Key Performance Indicator(s)	1. Percent (%) of students, faculty, staff, and managers that rank the college's web presence as high or outstanding.

    a.   **Web Presence Needs Assessment/Analysis** – Identify and analyze options, solutions, and exemplary practices for enhancing/upgrading the architecture and effectiveness of the College's web presence.

    b.   **Web Presence Cost Analysis** – Analyze the overall cost-effectiveness (include TCO, e.g., acquisition, staffing requirements, training, maintenance, licensing, hardware, cost avoidance or savings, etc.) of the most promising web architecture upgrades and/or enhancements.

    c.   **Web Presence Roadmap/s** – Develop roadmap/s to implement and/or leverage recommended web architecture upgrades and/or enhancements.

d. **College Website Renovation** – Continue the renovation of the College website, improving the readability, navigation, consistency, and layout of the pages within the College's website.

e. **Website - Consolidate Information Pages** – Develop centralized repository of content and/or shared sources of content to eliminate overlapping and redundant content while improving accuracy and reducing cost of maintenance and support services.

f. **Web Services** - Create smart websites that offer easy navigation and access, with better media support, and more self-help options to meet public expectations in a highly mediated world.

g. **Web, Prospective Student Pages** – Expand on the existing Prospective Student web pages in order to provide an improved and easier-to-use admissions, registration, and advisement process for new students.

30. **Wireless Network/Services** – Develop *student, faculty, and staff-friendly wireless network* for support of all teaching and learning programs and support activities.

Key Performance Indicator(s)	1. Percent (%) of students, faculty, staff, and managers that rank the college's wireless network/services as high or outstanding.

a. **Wireless Network Needs Assessment/Analysis** – Identify and analyze options, solutions, and exemplary practices for implementing a user-friendly wireless network to support all teaching and learning programs and support activities.

b. **Wireless Network Cost Analysis** – Analyze the overall cost-effectiveness (include TCO, e.g., acquisition, staffing requirements, training, maintenance, licensing, hardware, cost avoidance or savings, etc.) of the most promising user-friendly wireless network to support all teaching and learning programs and support activities.

c. **Wireless Network Roadmap/s** – Develop roadmap/s to implement and/or leverage recommended user-friendly wireless network.

d. **Wireless Canopy, Implement a Flexible College-wide** – Extend wireless canopy to ensure all student and employee areas have access to reliable, high speed wireless connectivity.

e. **Wireless Data Carriers, Leverage Relationships** – Leverage existing and new relationships with industry leaders in the Wireless Data market in order to provide CCC students with affordable access to state-of-the-art wireless network technology.

f. **Wireless Technologies, Explore Next Generation** – Continuously explore new and emerging technologies to determine their viability as a new Wireless transport.

Strategic Area IV – <u>Research & Assessment</u>

<u>Issues</u>

- Leveraging technology helps improve assessment.
- Measuring learning requires new and better ways to determine what matters, diagnose strengths and weaknesses in the course of learning.
- Measuring learning when there is still time to improve student performance, and involve multiple stakeholders in the process of designing, conducting, and using assessment is critical.
- Technology-based assessments can provide data to drive decisions on the basis of what is best for each and every student.

<u>Related Issues/Concerns</u>

- No significant differences by ethnic group on ownership of technology.
- Students believe L&IT has a positive impact in courses, especially in communications.

- Students believe (64%) that L&IT use improves learning.
- 64% of respondents agree that L&IT in courses has improved learning—particularly among older respondents and business and engineering majors.
- Adequate and reliable technical infrastructure is critical to support e-learning.
- Enrollment growth is higher in 2-year colleges than in 4-year colleges.
- More part-time students today
- ¾ of all undergraduates are non-traditional, and therefore less likely to persist in college after the first year or to graduate.
- Higher proportion of female students today
- More students over the age of 25 today
- Studies show a positive correlation between interaction and student retention.
- Gap between what the research communities have discovered about learning and what the faculty know and practice.
- The growing secret to success in academic environments is a culture of evidence.

Related Indicators

National Education Technology Plan	California Community Colleges Student Success Task Force	District Strategic Themes	Coastline Strategic Initiatives
2, 4, 5, 6	1, 2, 3, 4	1, 2, 5, 6	1, 3, 4

Benefits

- Reflect on the true meaning of learning.
- Fast reaction and decision-making.
- Improved information availability.
- Assessment data in the aggregate facilitates continuous improvement across the College

Goals

1. **Resource Utilization and Tracking** – Implement intelligent resource management to ensure proper and appropriate use of limited resources, e.g., enable utilization tracking and documentation of appropriate resources including people, time, money, software and hardware.

Key Performance Indicator(s)	1. Percent (%) of managers that rank the resource management tracking, reporting, and analysis systems as high or outstanding.

   a. **Intelligent Resource Management Needs Assessment/Analysis** – Identify and analyze options, solutions, and exemplary practices for improving and/or implementing new/expanded intelligent resource management tracking, reporting, and analysis strategies, systems, and processes to improve college productivity, efficiency, and cost effectiveness.
   b. **Intelligent Resource Management Cost Analysis** – Analyze the overall cost-effectiveness (include TCO, e.g., acquisition, staffing requirements, training, maintenance, licensing, hardware, cost avoidance or savings, etc.) of implementing the most promising intelligent resource management tracking, reporting, and analysis strategies, systems, and processes to improve productivity, efficiency, and cost effectiveness..
   c. **Intelligent Resource Management Roadmap/s** – Develop roadmap/s to implement and/or leverage recommended intelligent resource management tracking, reporting, and analysis strategies, systems, and processes.

d. **Align LIT Spending with College Priorities** – Utilize effective cost management methodologies to ensure L&IT investments and expenditures are aligned with College priorities to eliminate unnecessary spending.
e. **Banner Training** – Develop and provide Banner training for researcher and others who need to understand and use report writing and data extracting tools.
f. **Collaboration, Regional/State-wide** – Develop and/or participate in regional/statewide user-groups for sharing expertise on specific technologies.

2. **Strategic Technology Plan** – Design, develop, and continuously update processes, systems, tools, and practices necessary to develop, review, discuss, and ratify a College Strategic Technology Plan (planning process) and collateral support and information systems to improve productivity, effectiveness, and cost efficiency.

Key Performance Indicator(s)	1. Percent (%) of faculty, staff, and managers that rank the strategic planning processes and systems as a positive and supportive process for ensuring college productivity, effectiveness, and cost efficiency.

a. **Strategic Technology Plan Needs Assessment/Analysis** – Identify and analyze benefits and exemplary practices of new and emerging strategic technology planning processes and collateral support and information systems.
b. **Strategic Technology Plan Cost Analysis** – Analyze the overall cost-effectiveness (include TCO, e.g., acquisition, staffing requirements, training, maintenance, licensing, hardware, cost avoidance or savings, etc.) of implementing new and emerging new and emerging strategic technology planning processes and collateral support and information systems.
c. **Strategic Technology Plan Roadmap/s** – Develop roadmap/s to implement and/or leverage new and emerging strategic technology planning processes and collateral support and information systems.
d. **Technology Training Plan** – Create a training plan for all existing and future technology initiatives. Ensure that training costs are part of any cost or sustainability analysis.
e. **Strategic Technology Plan Review and Revision Process** – Develop and implement a process to review and revise the College's Strategic Technology Plan following a defined cycle and process. The process/systems will allow continuous college-wide input and recommendations and suggestions for the plan.
f. **Equipment Needs Assessment** – Conduct staff, faculty and student needs assessment designed to identify equipment deficiencies including printers, copiers, projectors, instant response clickers, video capture systems, audio/video recording equipment, and/or other audio/visual or computer technology necessary for teaching, learning, and/or office productivity.
g. **Measure Technology Climate & Effectiveness** – Periodically survey students, faculty, and staff to assess customer satisfaction with instructional technology systems and mediated learning resources products and services.
h. **Planning Processes** – Automate processes to support planning, goal setting, self-assessment, self-improvement, and student academic plan creation for all students.
i. **Project Management, Centralize** – Implement a centralized project management service. This service will enable the College to more effectively manage and coordinate work ranging from one-time projects to complex programs across the entire project life cycle.

3. **Student Assessment/Performance & Tracking** – Develop and support practices/systems that enable tracking, reporting, and integration of student assessment and performance data.

Key Performance Indicator(s)	1. Percent (%) of faculty, staff, and managers that rank student assessment and performance data tracking and reporting systems as a positive and supportive

	tool for ensuring and sustaining student success.

a. **Student Assessment/Performance & Tracking Needs Assessment/Analysis** – Identify and analyze benefits and exemplary practices for establishing technology-based systems, processes, tools, and services that enable tracking, reporting, and integration of student assessment and performance data.

b. **Student Assessment/Performance & Tracking Cost Analysis** – Analyze the overall cost-effectiveness (include TCO, e.g., acquisition, staffing requirements, training, maintenance, licensing, hardware, cost avoidance or savings, etc.) of implementing technology-based systems, processes, tools, and services that enable tracking, reporting, and integration of student assessment and performance data.

c. **Student Assessment/Performance & Tracking Roadmap/s** – Develop roadmap/s to implement and/or leverage technology-based systems, processes, tools, and services that enable tracking, reporting, and integration of student assessment and performance data.

d. **Assessment Synchronize, LMS** – Evaluate compatibility and usability of assessment software to integrate with Seaport and/or systems used by faculty.

e. **Assessment Efficiency** – Automate and/or integrate existing systems and processes to improve quality and use of assessment instruments.

f. **Course-level tools for Tracking Student Performance** – Provide faculty with tools to provide real-time assessment of student learning and have the flexibility to develop formative evaluations for course improvement.

g. **Automatic Alerts** – Expand automatic and on-demand performance-based alert capability in Seaport triggered by performance-based learning activities and/or faculty intervention.

h. **Program-level Integration of Assessment Data** – Provide faculty and administrators with tools to aggregate assessment data at the program level and across any number of courses taught by multiple faculty.

4. **Business Intelligence Technologies** – Implement business intelligence technologies and practices to transform "data" into organizational "knowledge" to facilitate and/or improve predictive fact-based decisions making.

Key Performance Indicator(s)	1. Percent (%) of managers that rank business intelligence technologies and practices/systems as high or outstanding.

a. **Business Intelligence Technologies Needs Assessment/Analysis** – Identify and analyze benefits and exemplary business intelligence technologies and practices to transform "data" into organizational "knowledge" to facilitate and/or improve predictive fact-based decisions making.

b. **Business Intelligence Technologies Cost Analysis** – Analyze the overall cost-effectiveness (include TCO, e.g., acquisition, staffing requirements, training, maintenance, licensing, hardware, cost avoidance or savings, etc.) of implementing new business intelligence technologies and practices to transform "data" into organizational "knowledge" to facilitate and/or improve predictive fact-based decisions making.

c. **Business Intelligence Technologies Roadmap/s** – Develop roadmap/s to implement and/or leverage business intelligence technologies and practices to transform "data" into organizational "knowledge" to facilitate and/or improve predictive fact-based decisions making.

d. **Data Analysis Technologies, Implement** – Provide technology to enable analysis and trending of college data in order to support predictive, fact-based management of college assets, offerings, and resources.

    e. **Reporting Services** – Investigate and implement in collaboration with the District, OCC, and GWC to centralize a dynamic data reporting service to provide on-demand reports to users within the College.

    f. **Evidence-based Decision Making** – Facilitate evidence-based decision making by providing timely access to dynamic data covering academic programs, student support services, and institutional efficiency from a common college data warehouse and/or dashboard.

    g. **Electronic Report Delivery and Viewing** – Provide all reports in an electronic format to minimize unnecessary printing. Reports will be viewable online and provide user with the ability to read, search, or print individual sections or pages as needed.

5. **Dashboard** – Create institutional effectiveness dashboards in collaboration with the District, OCC, and GWC.

Key Performance Indicator(s)	1. Percent (%) of managers that rank institutional effectiveness dashboards and practices/systems as high or outstanding.

    a. **Dashboard Needs Assessment/Analysis** – Identify and analyze benefits and exemplary practices of new and emerging institutional effectiveness dashboards systems, processes, tools, and services used to sustain student success, improve efficiency, and ensure cost effectiveness..

    b. **Dashboard Cost Analysis** – Analyze the overall cost-effectiveness (include TCO, e.g., acquisition, staffing requirements, training, maintenance, licensing, hardware, cost avoidance or savings, etc.) of implementing institutional effectiveness dashboards systems, processes, tools, and services.

    c. **Dashboard Roadmap/s** – Develop roadmap/s to implement and/or leverage new and emerging dashboards systems, processes, tools, and services.

    d. **Dashboard**, **Collaboration** – Support institutional effectiveness dashboards development and implementation both unilaterally and in cooperation with District initiatives.

    e. **Dashboards, Develop** – Develop and/or adopt easy-to-read dashboards that provide high-level overviews of key business processes and enable the ability to drill-down and view granular details for the purposes of root-cause analysis.

    f. **Database Analysis Services** – Information Technology will implement Data Analysis Infrastructure to enable an integrated view of College data for reporting, Online Analytical Processing (OLAP), analysis, Key Performance Indicator (KPI) scorecards, and data mining.

    g. **Data Warehouse, Build** – Implement a consolidated repository for the rollup and long-term storage and analysis of data acquired by the College allowing rapid retrieval and analysis.

6. **Experimentation & Research** – Encourage and support research, exploration, and innovation to prototype, pilot, develop and evaluate new and unique learning technologies, courseware, applications, web-services, authoring tools, apps, etc., and/or to implement piloted exemplary prototype practices/systems.

Key Performance Indicator(s)	1. Percent (%) of faculty, staff, and managers that rank experimentation and research into improved technology-based L&IT practices and systems as high or outstanding.

    a. **Experimentation & Research Needs Assessment/Analysis** – Identify and analyze benefits and exemplary practices/examples of experimentation and research practices and strategies to encourage and support research, exploration, and innovation that will improve and sustain student success, organizational efficiency, and cost effectiveness.

    b. **Experimentation & Research Cost Analysis** – Analyze the overall cost-effectiveness (include TCO, e.g., acquisition, staffing requirements, training, maintenance, licensing, hardware, cost avoidance or savings, etc.) of implementing new and emerging experimentation and research practices and strategies to encourage and support research, exploration, and innovation.

    c. **Experimentation & Research Roadmap/s** – Develop roadmap/s to implement and/or leverage new and emerging experimentation and research practices and strategies to encourage and support research, exploration, and innovation.

    d. **Isolated Computing Environments** – Define and implement separate, secure, distinct security zones for production, testing, and development purposes to ensure that production data, networks, and systems are secure and not impacted by non-production events.

    e. **Pilot Initiatives** – Evaluate new technologies by using pilot projects across the College and discipline.

    f. **Pilot to Implementation** – Determine procedures for turning pilot projects into initiatives when feasible.

Strategic Area V – Entrepreneurship & Monetization

Issues

- Leveraging alternative funding sources is essential in the face of shrink budgets and increased demand.
- Students' have a growing tendency to learn through bricolage, which is contrary to the principles embraced by most colleges.
- The Open Education Environment and Open Courseware movement is challenging intellectual property-based business models.
- Rapid changing technology cause constant disruption in the use and application of technology-based teaching and learning.

Related Issues/Concerns

- Adequate staff for anytime support.
- Staff necessary to design, develop, and sustain new and innovative programs.
- Learning spaces to accommodate teamwork.
- Must provide excellent customer service.
- 24x7 accesses to services and programs.
- Development and delivery costs.

Related Indicators

National Education Technology Plan	California Community Colleges Student Success Task Force	District Strategic Themes	Coastline Strategic Initiatives
4, 5, 6	2, 3, 4	1, 5	2, 4, 5

Benefits

- Adaptation of support resources to respond to evolving needs.
- Generate revenue for quality improvement, additional development/experimentation, and/or updated systems.
- Help mitigate the high cost of new technology
- Identify and share best practices.
- Interact with businesses and organizations to learn about new tools
- Leveraging resources in consortiums or systems
- Share development and experimentation costs between institutions.

Goals

1. **Market Mediated Teaching & Learning Resources** *(Content-Based Products)* – Market mediated resources and technologies designed and developed for teaching and learning to colleges and universities nationwide.

Key Performance Indicator(s)	1. Revenue ($) generated by licensing and/or sale of mediated teaching and learning resources or courses.

   a. **Market Mediated Teaching & Learning Resources/Courses Needs Assessment/Analysis** – Identify and analyze product mix, modalities, sophistication, strategies, and exemplary practices/strategies used to develop and market new and emerging teaching and learning resources, systems, processes, tools, and services *(content/subject matter based).*
   b. **Market Mediated Teaching & Learning Resources/Courses Revenue/Cost Analysis** – Analyze the overall revenue potential (include ROI/TCO, e.g., development options, business strategies, contracting/outsourcing needs, SME, IP acquisition/permissioning, staffing requirements, training, maintenance, licensing, hardware, cost avoidance or savings, etc.) of implementing/adopting new and emerging marketing and development strategies and/or product mix.
   c. **Market Mediated Teaching & Learning Resources/Courses Roadmap/s** – Develop roadmap/s to implement and/or leverage new and emerging marketing and development strategies and/or product mix for national/international markets.
   d. **Market E-books** – Create and market electronic textbooks nationally.
   e. **Market Virtual Labs** – Build and market selected laboratory simulations.
   f. **Marketable Virtual Simulation Learning Tools/Resources** – Develop and market content-based virtual simulations (CLS and/or contract education), e.g., Virtual Emergency Operations Training Center, and Allied Health Care simulations, Refinery Operations, etc.
   g. **e-Commerce Point of Purchase** – Design and implement an e-Commerce "Store-front" to market and sell CLS products and services, contract education non-credit courses, non-credit courses, etc.
   h. **Virtual-World-for-Rent Program** – Develop a virtual-world training facility to be leased by other institutions for applications such as Emergency Operations Center training.
   i. **Market Technology Institute** – Establish a fee based technology summer institute to serve 300-500 faculty and staff.
   j. **Market Technology Webinars** – Market nationally single concept desktop webinars covering exemplary practice in instructional design and interactive learning development and implementation as well as exemplary technology institute concepts and practices.

2. **Collaborative Partnerships** – Develop collaborative partnerships with other colleges, corporations, and government agencies to share in the development, marketing, and commercialization of innovative learning systems and/or resources that will benefit CCC and improve teaching and learning.

Key Performance Indicator(s)	1. Revenue ($) generated by commercialization and/or marketing of new learning systems in collaboration with other entities. 2. Number (#) of new collaborative agreement formed to develop, market, and/or commercialize products/services.

   a. **Collaborative Partnerships Needs Assessment/Analysis** – Identify and analyze strategies and exemplary practices used to develop, market, and/or commercialize new and emerging teaching and learning resources, systems, processes, tools, and services through collaborative partnerships with other colleges, corporations, and/or government agencies.
   b. **Collaborative Partnerships Revenue/Cost Analysis** – Analyze the overall revenue potential (include ROI/TCO, e.g., development options, business strategies, contracting/outsourcing needs,

SME, IP acquisition/permissioning, staffing requirements, training, maintenance, licensing, hardware, cost avoidance or savings, licensing and/or agreements needed, etc.) of developing collaborative partnerships with other colleges, corporations, and/or government agencies to develop, develop, market, and/or commercialize innovative learning system and/or resources.

c. **Collaborative Partnerships Roadmap/s** – Develop roadmap/s to develop, market, and/or commercialize new and emerging teaching and learning resources, systems, processes, tools, and services through collaborative partnerships with other colleges, corporations, and/or government agencies.

3. **Commercialize** *(Technology-Based Products/Services)* – Commercialize and market innovative technology-based systems and processes.

Key Performance Indicator(s)	1. Revenue ($) generated by commercializing CCC products and/or services. 2. Number (#) of new OL&IT/CCC commercialization initiatives.

a. **Commercialize Needs Assessment/Analysis** – Identify and analyze strategies and exemplary practices used to develop, market, and/or commercialize new and emerging teaching and learning, systems, tools, and/or services (technology-based products and/or services).

d. **Commercialize Cost Analysis** – Analyze the overall revenue potential (include ROI/TCO, e.g., development options, business strategies, contracting/outsourcing needs, IP acquisition, staffing requirements, training, maintenance, licensing, hardware, cost avoidance or savings, licensing and/or agreements needed, etc.) of developing, marketing, and/or commercializing innovative learning system and/or resources (technology-based products and/or services).

e. **Commercialize Roadmap/s** – Develop roadmap/s to develop, market, and/or commercialize new and emerging teaching and learning systems, tools, and services.

f. **Commercialize Seaport** – Market Seaport nationally.

g. **Commercialize Seaport** – Add critical features and flexibility to Seaport to enable use for contract education and external revenue source.

h. **Virtual-World-for-Rent Program (Learning Environment/No Content)** – Develop targeted (topic specific/specialized area) virtual-world training facilities to be leased by other institutions for applications such as Emergency Operations, Fire Fighting, Police Training, etc.

i. **Market Virtual Simulation Tools/Labs (Shells)** – Develop and market virtual simulations tools through CLS and contract education, e.g., microscope, telescopes, geiger counter, EKG, CAT Scan, Xray, etc., that can used in a wide range of courses and learning activities.

Department & Program Tactical Technology Goals & Initiatives
(Development in Process)

President

Where are we now?

Where do we want to go?

Marketing

Where are we now?

Where do we want to go?

Instruction

Enrollment Management

Where are we now?

Where do we want to go?

Distance Learning/Online Instruction

Where are we now?

Where do we want to go?

Contract & Military Education

Where are we now?

2011-2012 Technology Goals completed:
1. Developed mobile app for military programs.
2. De-centralized and integrated the maintenance of website content into team/functional user operations.
3. Purchased, installed, and implemented SharePoint.   Conducted user training.
4. Implemented Late Registration Process in Luminis.
5. Implemented Hobsons Connect (CRM).
6. Conducted individual and group user training to support Banner and BDMS.
7. Facilitated conversion from Seaport 2 to Seaport 3 for Military Programs.
8. Migration of Seaport and NCPACE servers to Terremark (co-location).
9. Purchased and installed Microsoft Project and Visio as needed.
10. Developed and implemented a department-wide online Contacts system. Conducted user training.
11. Developed and implemented an online Transfer Plan Request form. Conducted user training.
12. Upgraded Adobe Creative Suites from CS3 to CS6 (programming team).
13. Developed and implemented an online site representative performance measure and invoicing system.

2012-2013 Technology Goals planned:
1. Design and engage students with regular online surveys. *(To systematically obtain student feedback and integrate into Program Review)*
2. Develop methods to collect Analytics. *(In conjunction with other data sources, for use in program analysis and planning)*
3. Purchase and pilot mobile devices for use at recruiting events and mobile platform demonstrations. *(To facilitate data collection and demonstrate CCC technologies)*
4. Develop alternate delivery platform for self-paced/Pocket Ed course content in Seaport (previously available on PDA devices). *(To reduce device costs for students and increase efficiency of content delivery)*
5. Implement and maintain Flash Media Server at the District Office in support of Mobile media services (as part of alternate delivery platform of Military PocketEd content)
6. Rewrite of CCC Military website for mobile web browsers. *(Change in the cascade style sheet (CSS) to accommodate viewing of the Military website on mobile devices, tablets and desktops)*
7. Rewrite of the Military Mobile App. *(to conform with the District initiative of a central IDE and addition of Banner/Luminis services within the app)*
8. Expand on use of Hobson's Connect for recruitment, student contact, and prospect management. *(To better engage prospective, new and current students)*
9. Increase utilization of SharePoint to manage departmental processes and documents. *(To reduce paper usage and increase workflow efficiencies)*
10. Upgrade computer workstations to support Windows 7, SharePoint, and MS-Office 2010 (16 workstations).
11. Participate in District-wide DegreeWorks Implementation.
12. Explore and implement Banner's new Third-Party billing functionality. *(To reduce redundancy in Third-Party billing systems and more efficiently account for Student Accounts Receivables)*
13. Assist in implementation of Banner's new Online Graduation application. *(To reduce redundancies, provide a more student-friendly interface, and reduce paper usage)*
14. Migrate Access databases to a centralized online system (only necessary functionality).
      o Centralized reporting sub-system of the main centralized system (frontend = online and/or SharePoint, backend = Argos and/or Banner Datastore via VPN)
      o Automate manual processes as much as possible using this system. (e.g. sending reminder emails to disengaged students, etc.)
      o Centralized Military course/degree and change notification management sub-system.
15. Achieve redundancy for Terremark servers (Seaport, NCPACE) from backup servers located at DIS.
16. Purchase additional scanners for BDMS. (To more efficiently manage documents, increase electronic record keeping and free up filing space)
17. Utilize existing Banner functionality – develop Banner workflows with DIS, etc.
18. Coordinate, design and implement Learning First Program common application online system. (To fulfill partnership obligation)
19. Develop a data portal to facilitate the Learning First Project. (To fulfill partnership obligation)
20. Upgrade the online National Testing Center Scheduling system and implement online payment capability.

Where do we want to go?

2013-2018 Technology Goals planned:
Note – The Military/Contract Ed management team has not yet had the opportunity to rank these initiatives.
1. Upgrade remaining computer workstations to enhance performance with Windows 7, SharePoint, and MS-Office 2010 (15 workstations).
2. Participate in district-wide conversion of CCCApply application to CCCOpen OR other online student application system.
3. Participate in continuous improvement of DegreeWorks, Banner, Seaport, and other student systems.
4. NCPACE online systems upgrades (depending on status of contract) for 2014.

5. Participate in the development of college-wide data reporting standards to include reporting of military/contract education stats. *(To provide standardized reporting that represents all of Coastline's productivity and success)*

Library

Where are we now?

Where do we want to go?

Academic Programs

Where are we now?

2011-2012 Technology Goals completed:
1. Introduced new Mobile Technology Application Development Certificate program- Rejected by Regional Workforce Development Group (LOWDL) for inclusion as State certificate for students.

2012-2013 Technology Goals planned:
1. Opening of Newport Beach Learning Center, incorporating a variety of technology support elements for instruction

Where do we want to go?

2013-2018 Technology Goals planned:
1. Convert appropriate arts/digital arts courses to an emphasis on business of art solutions, with particular cognizance of new technology applications

Student Services

Where are we now?

2011-2012 Technology Goals completed:
1. July - ATI Filer Conversion to BDMS – ATI system discontinued allowing servers to be disabled and de-supported
2. Aug – Banner customizations for rolling registration permit authorizations, correcting Grade Mailer print errors, correcting student application errors, merging/correcting duplicate IDs
3. Sept - Automation of reserved seats for ECHS classes
4. Sept-Jan - Microfilm conversion to PDF stored electronically, including installation of PC for storage and configuration for printing, training or staff for use of the new system.
5. Sept - Restarted Axiom/AnyDoc OCR project for ISEP – redesign of application completed and published with Fall ISEP brochure in May
6. Oct - Automated email distribution of Assessment Test results letters to students
7. Nov- Automated clearance of registration requirements following assessment testing
8. Nov & April - Banner 8.5 – 8.6 upgrade – including improvements to grading, equivalency & pre-requisite checking for A&R, third-party payment processing/billing, training of staff to use new Banner functions
9. Dec - Expansion of BDMS within Counseling including adding scanners, updating security and training staff
10. Feb - Display of incoming transcripts (received by A&R at all 3 colleges) on MyCCC for access by student, counseling and Financial Aid, training of staff to locate and use the new information
11. Mar - Links to Bookstore from Registration website to meet California Cost-of-College disclosure requirements
12. April - Mobile apps installed for viewing Student Schedule and Bill

13. April – Secure Wireless access for students in the A&R area including capability for 24-hour temporary IDs and training of administrator to provide temporary ID
14. April - Pre-Printed Add Authorization Cards, including updates to staff security and training to run and print the new Add Auth sheets
15. April - Web Applications through MyCCC which also includes a real-time display of processing status for all applications submitted, including training of staff to process the new applications, answer student questions, use output reports for residency and student information changes.
16. April – Implementation of FSAAtlas interface to SEVIS website for International students, including transfer of responsibility and training of a new DSO, conversion of previous data from Banner and on-going training on use of the new system. As the pilot school, Coastline was also involved in testing the configuration of the District server and interfaces between the Coast District and the Federal SEVIS servers.
17. May - Expanded automated Credentials transcript service to include requests for free transcripts and cash payment/C.O.D transcripts, including training of staff to assist students in putting in their requests
18. May - Configuration of Banner to track Title III students
19. June - Expansion of BDMS to Financial Aid, including changes to BDMS codes and training of Financial Aid staff
20. June - Student ID cards, including Installation of Camera, printer, storage PC and staff training
21. June – "Smart" Admissions letters updated to detect the status of the student's MyCCC account to provide personalized directions on logging in for the first time vs. using an existing or reactivated ID

2012-2013 Technology Goals planned:
1. Completion of Axiom/AnyDoc OCR project for ISEP New & Returning students, including upgrade of PCs to handle the more complex software, Installation of OCR software and storage on a coastline server, FTP configuration to connect to District and customization of Banner code to load scanned applications
2. Further expansion of BDMS scanning for Financial Aid, including installation of additional scanners and additional staff training
3. Expansion of BDMS scanning for Counseling Disciplinary files, including setting up security for designated staff and training
4. FSAAtlas - development of automated email notifications to students for compliance issues or status changes
5. Use of ClearingHouse Student Tracker, which allows us access to nation-wide student success statistics, particularly student transfer and 'gainful employment' information
6. Degreeworks implementation – to improve student success by providing self-service online Student Education Plan creation as a personal roadmap to success
7. Automation of reserved seats in classes for students admitted to STAR on-line and on-site cohorts
8. Pre-Registration project – To allow students to set their program and major prior to registration, as well as provide critical contact information such as updated addresses, emails and phone numbers
9. On-Line Graduation applications – Based on information already in Banner, students will be able to apply for graduation via their MyCCC account.
10. Electronic transcripts – To allow electronic transfer & receipt of transcripts to partner colleges and universities, rather than paper.
11. Up-grade of PCs within Student services – including student-use PC s in the A&R lobby, A&R, Financial aid and Assessment Center
12. Upgrade of some printers within Student Services, including the front desk printer used by students
13. Evaluate Residency process for improved automation opportunities

The top 9 here are either already in progress or are high priority within the District so are pretty much pre-destined to be well under way next year.

Where do we want to go?

2013-2018 Technology Goals planned:
1. Expansion of Axiom/Anydoc to use OCR in other areas
2. Evaluation/implementation of SARS / Banner interface
3. Implementation of Banner Financial Aid module
4. On-going hardware upgrade of Printers and PCs

Student Success Center

Where are we now?

Where do we want to go?

Assessment Center

Where are we now?

Where do we want to go?

ADA – Services for Student with Disabilities (SSD)

Where are we now?

Where do we want to go?

Administrative Services

Office of Learning & Information Technologies (OL&IT)

Where are we now?

Where do we want to go?

Information Technology

Where are we now?

Technology Goals/Initiatives Achieved in 2011-12
1. Updated Office Suite to 2010 (started updates)
2. Updated Cisco lab routers/switches
3. Expanded NetLab to include Cisco CCNP as well as CCNA curriculum capabilities
4. Implemented Smart Net maintenance agreements on Cisco equipment
5. New Server for NetLab to provide infrastructure for vSphere 5.0 course
6. Software was purchased to support Paralegal program
7. Piloted VDT (virtual terminals) as classroom computers for 30 stations
8. Updated VMWare classes to utilize Netlab servers to provide in person and from a distance lab access
9. Conferences Workshops attended by CTE faculty and paid for with Perkins funds
10. VMware vSphere for VCAP Certification (2 faculty)
11. Cisco Academy   Faculty Training/Update (2 faculty)
12. Interop Las Vegas (2 faculty)
13. Cisco Live 2012 (1 faculty)
14. Cisco Academy Conference 2012 (1 faculty)

Technology Goals/Initiatives Planned 2012-13
1. Upgrade memory for VMWare and Microsoft Labs (student workstations) to increase speed for virtualization
2. Upgrade Adobe Software in classrooms and lab to latest version to provide latest industry standard curriculum
3. Purchase 3-D modeling printer for Animation (Leasing Option) to provide students with a 3-D model that they can maneuver to aid them in visualization of their animation objects
4. Configure a section in the Information Commons to provide for VITA Tax Internships.   VITA Tax preparation is a non-profit organization that provides free tax preparation services to communities.   This partnership will provide an internship opportunity for Coastline Accounting students.
5. Upgrade VM Ware lab servers (Leasing Option) provides students with the ability to install and maintain multiple VMWare images
6. Install Tutoring Center software in the Information Commons to provide Tutoring services in Math, Reading and Accounting to Coastline students
7. Extend licensing agreements for:
   o Microsoft (MSDNAA) provides faculty, staff and students access to free Microsoft Downloads
   o ACME Animation provides students with access to professionals who provide conceptual and technical feedback
8. Update/Replace CTE printers provide printing of projects to help students visualize and complete assignments

Where do we want to go?

Long Range technology goals/initiatives (2013-18)
1. Update computer hardware to meet industry hardware requirements(2013-2018)
2. Update computer software to meet industry software requirements (2013-2018)
3. Develop Innovative technology based programs and support labs, i.e.
4. Mobile Applications Lab (2013-2018)
5. Provide CTE lab access to Distance Learning students (2013-2018)

Web Site

Where are we now?

Where do we want to go?

Coast Learning Systems

Where are we now?

Technology goals/initiatives achieved in 2011-12:
1. Switched CLS online courses in Moodle from a local server at the college to the Amazon Cloud
2. Create preview site for prospective faculty to review.
3. Completed an online course in Public Speaking

Technology goals/initiatives planned for 2012-13
1. Switch the Music Server courses from a Macintosh Server/Platform to a Windows Server/Platform (will be doing this 8/13/12)
2. Switch all Music courses to an updated version of Moodle, then move them to the Amazon Cloud (this will happen in early January of 2013)
3. Launch refurbished CLS website.

Where do we want to
Long range technology goals/initiatives (2013 -2018)

Business and Financial Services

Where are we now?

Technology goals achieved in FY 11/12:
1. Upgrade to Microsoft Dynamics/Great Plains accounting software for ancillary operations
2. Addition of bank reconciliation module to Microsoft Dynamics/Great Plains accounting software for ancillary operations to improve efficiency
3. Purchase of new laptop and projector for Business Conference Room

Technology goals planned for FY 12/13:
1. Ongoing maintenance of Microsoft Dynamics/Great Plains accounting software for ancillary operations as issues arise
2. Provide read-only access to financial reports to ancillary operations through FRx report writing software
3. Migrate PeopleAdmin system to NEOGOV for recruiting of personnel upon District HR implementation
4. Purchase of new laptop and projector for President's Conference Room

Where do we want to go?

Long-range technology goals:
1. Upgrade to all PCs in accounting and HR departments to increase efficiency
2. Implementation of EPAF module in Banner at District level to be rolled out to the colleges in FY 13/14
3. Replace Microsoft Visio as flowcharting software in order to more efficiently update organization charts as changes occur to staffing through attrition and/or reorganization
4. Implementation of the encumbrance (Purchase Order) module in Microsoft Dynamics/Great Plains accounting software for ancillary operations to increase efficiency in the department
5. Implementation of a document management system in Microsoft Dynamics/Great Plains accounting software for ancillary operations that allows for scanned documents to be stored and retrieved more efficiently

Security

Where are we now?

Technology goals/initiatives achieved in 2011-12
1. Automated External Defibrillator training for 25 employees
2. Place Clery Act statistics (Jeanne Clery Disclosure of Campus Security Policy and Campus Crime Statistics Act) and annual Campus Safety and Security Report on the Coastline website in compliance with Federal legislation (U.S. Code of Federal Regulations at 34 C.F.R. 668.46).
3. Purchased emergency radios and distributed two radios to each site
4. Installed repeater at College Center to increase range of emergency radios
5. Tested range of radios and trained area staff in their use
6. Developed college-specific policies and procedures for District's new mass notification system
7. Conducted a successful test of the mass communication system

Technology goals/initiatives planned for 2012-13 (ranked bulleted listing with brief explanation of purpose and benefit)
1. Develop a comprehensive security website with useful information and emergency procedures
2. Begin crossover from analog security camera system to a newer and more effective IP-based system, as existing equipment needs repair and/or replacement

3.   Install repeaters at additional college sites to increase coverage of emergency radios
4.   Install additional automated external defibrillators (AEDs) at each learning center and College Center, so there is at least one per floor at the College Center and each learning center, instead of one per site.
5.   mass notification test

Where do we want to go?

Long range technology goals/initiatives (2013-2018) for department and college (ranked by intended purpose/benefit and proposed implementation year)
1.   Complete crossover to IP-based security camera system (2014)
2.   Handheld automated citation writers (2015)
3.   Fixed license plate recognition system for college parking lots to increase security (2016)

Maintenance & Operations

Where are we now?

Where do we want to go?

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Charts/Tables

Figures

Appendices

Appendix I: Links & Resources

1. **Adaptive Computing** - *Out of Context: Computer Systems That Adapt To, and Learn From, Context - http://web.media.mit.edu/~lieber/Lieberary/Out-of-Context/Out-of-Context-Intro.html*
2. **Cloud Computing** - *Cloud Computing Testbed (CCT) University of Illinois at Urbana-Champaign -* http://cs.illinois.edu/node/282
3. **Cloud Computing** - *The Tower and the Cloud* (An EDUCAUSE eBook) - *http://net.educause.edu/ir/library/pdf/PUB7202.pdf*
4. **Cloud-Based Storage** - *Into the Cloud: Our 5 Favorite Online Storage Services -* http://www.readwriteweb.com/archives/free_online_storage_services.php
5. **Communities of Practice** - *Seven Principles for Cultivating Communities of Practice - http://hbswk.hbs.edu/archive/2855.html*
6. **Context-Aware Applications** - *Understanding and Using Context -* http://www.cc.gatech.edu/fce/ctk/pubs/PeTe5-1.pdf
7. **Context-Aware Computing** - *Input and Output, and Augmented Environments - http://depts.washington.edu/archi/0.context-aware/0.default.html*
8. **Context-Aware Computing** - *MIT Media Lab -* http://www.media.mit.edu/wearables/mithril/MIThril.pdf
9. **Context-Aware Computing** - *Seeking a Foundation for Context-Aware Computing - http://www.dourish.com/embodied/essay.pdf*
10. **Digital Library** - *National Science Digital Library -* http://nsdl.org/
11. **Dynamic Publishing** - *SmARThistory -* http://smarthistory.org
12. **Educational Technology** - *Downes' list of RSS feeds on Educational Technology - http://www.downes.ca/edurss/feeds.htm*
13. **Games-based Learning.** *The Local Games Lab, University of Wisconsin-Madison -* http://www.gameslearningsociety.org/research/local-games-lab
14. **Geolocation/GPS** - *CommunityWalk -* http://www.communitywalk.com/
15. **Geolocation/GPS** - *Next Exit History* (University of West Florida & University of South Florida) - http://nextexithistory.com/
16. **Grid Storage** - *Open Science Grid: University of Wisconsin-Madison computer scientists -* http://www.news.wisc.edu/12927
17. **Human Interactions With Computers** - *Can Computers Communicate Like People Do? -* http://www.nsf.gov/news/news_summ.jsp?cntn_id=102776
18. **Human Machine Interactions** - *MIT's Touch lab -* http://touchlab.mit.edu/
19. **Internet 3.0** - *The Future of the Internet III -* http://www.pewinternet.org/PPF/r/270/report_display.asp
20. **Knowledge Web** - *James Burke's Knowledge Web Project -* http://www.k-web.org/
21. **Location Awareness** - *Location Technologies Primer (TechCrunch) -* http://techcrunch.com/2008/06/04/location-technologies-primer/
22. **Mobile Apps -** Columbia University's: *Mapping the African American Past (MAAP)* **-** http://maap.columbia.edu/m/index.html
23. **Mobile Learning** - *Seton Hall University Mobile Initiatives -* http://www.shu.edu/offices/technology/mobility-initiatives-0809.cfm
24. **Natural Language Speech Recognition** - Natural Language Software Registry - http://registry.dfki.de/
25. **Personal Learning Environment** – *Resources & Diagrams -* http://edtechpost.wikispaces.com/PLE+Diagrams
26. **Personal Web/Space** – *Omeka (George Mason University) -* http://omeka.org
27. **Personal Web/Space** – *OpenSophie -* http://omeka.org
28. **Pervasive Computing** - *Visual Interaction -* http://oxygen.lcs.mit.edu/Vision.html
29. **QR Codes (Smart Objects)** - *50 QR Code Resources For The Classroom -* http://www.zdnet.com/blog/igeneration/50-qr-code-resources-for-the-classroom/16093
30. **Radio-Frequency Identification (Smart Objects)** – *UW Team Researches A Future Filled with RFID Chips* (University of Washington) - http://seattletimes.nwsource.com/html/businesstechnology/2004316708_rfid31.html
31. **Rapid Prototyping** - *The Learning Factory Homepage -* http://www.me.psu.edu/lamancusa/rapidpro/index.htm
32. **Rapid Prototyping** - *The Rapid Prototyping Homepage -* http://www.cc.utah.edu/~asn8200/rapid.html
33. **Semantic-Aware Applications** - *Cleveland Clinic -* http://www.w3.org/2001/sw/sweo/public/UseCases/ClevelandClinic/
34. **Semantic-Aware Applications (Portal)** - *Semantic UMW (The University of Mary Washington) -* http://semantic.umwblogs.org/about
35. **Semantic-Aware Applications (Searching)** - *Semantic Mediawiki -* http://www.semantic-mediawiki.org/wiki/Semantic_MediaWiki

36. **Smart Objects (Ambient System)** - *Home-Based Health Platform, University of Florida* - http://www.harris.cise.ufl.edu/projects_nih.htm
37. **Smart Objects (Environment Aware)** – *Arduino* - http://www.arduino.cc/
38. **The Internet of Things (Smart Objects)** - *The Net Shapes Up to Get Physical* - http://www.guardian.co.uk/technology/2008/oct/16/internet-of-things-ipv6
39. **Virtual Reality** - *Haptics and Surgical Simulation* - http://cs.millersville.edu/~webster/haptics/

Appendix II: Coastline Community College – Technology Survey - Spring 2011

Appendix II: Part 1. Report & Key Findings

Purpose and Methodology

College-wide student, faculty, staff, and management Technology Surveys were conducted in the Spring 2011 under the auspices of the Technology Committee in collaboration with the Office of Instructional Systems Development.   The purpose of these surveys was to identify the technology needs and preferences of each constituency group and to assess the technology resources and services that are currently available at CCC.   The results of these surveys will be used to assist the Technology Committee and various college departments enhance technology resources and services and plan for future innovations.

Unique survey instruments were developed for each constituency group modeled on a wide range of assessment surveys used at other institutions.   However, demographic and common core questions were asked of all groups.   Unique question specific to the needs and interests of each grouping were also asked.   The surveys were administered electronically over the web using Survey Monkey.   Each group was notified of the survey via an e-mail message from the College President that contained a link to the survey.   Subsequent reminders were sent to each group by the Technology Committee.   Each survey was available for approximately one month.   Every student completing the survey was entered into a drawing for an iPad as way to encourage participation.   No incentive was offered to employees.   Surveys were launched on the following dates and times:

Technology Strategic Plan - Faculty Survey (a)	January 5, 2011 3:59 PM
Technology Strategic Plan - Faculty Survey (b)	January 20, 2011 10:51 AM
Technology Strategic Plan - Faculty Survey (c)	January 20, 2011 11:14 AM
Technology Strategic Plan - Student Survey (a)	February 3, 2011 8:39 PM
Technology Strategic Plan - Student Survey (b)	February 3, 2011 1:36 PM
Technology Strategic Plan - Student Survey (c)	February 3, 2011 9:21 PM
Technology Strategic Plan - Management Survey	May 16, 2011 8:57 AM
Technology Strategic Plan - Classified Staff Survey	May 16, 2011 3:34 PM

Since the committee wanted responses to a large number of questions, students and faculty were divided into three random groups.   Demographic and common core questions were used for approximately 50% of the questions of all groups.   The remaining questions were unique proving a much broader range of input.   Management and Classified Staff were asked to complete one common survey.

Survey Participants

In total, 790 survey responses were received from students, 90 from faculty, 20 from management, and 68 from classified staff. This represents a response rate from each group as follows: (1) students – 14% (as a percent of students sent an email invitation), faculty – 21% (as a percent of all full and part-time faculty sent an email), management – 67%, and classified staff – 77%.   Figure 1 provides visual representation of this information.

Of the faculty surveyed, 59% indicated that they were full-time and 41% part-time.   With regard to teaching experience, 74% indicated that they had over ten years of experience teaching higher education and only 4% indicated that they had less than two years experience teaching in higher education; 49%   indicated that they had taught over six courses online while 18% indicated that had taught no online courses.
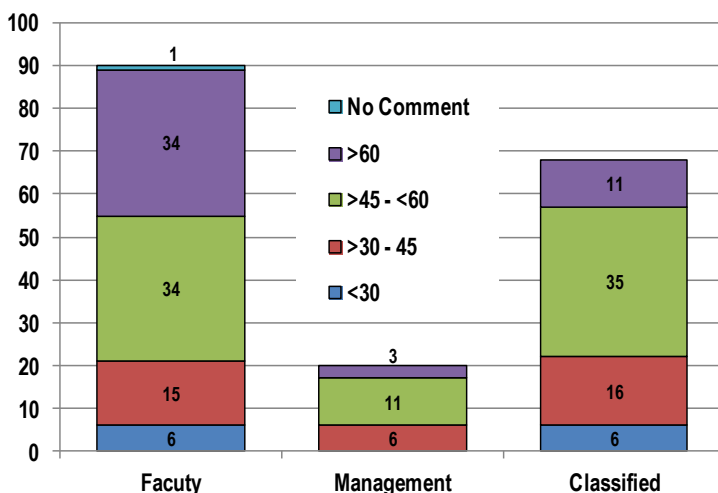
Figure 1: *Faculty, manager, and classified staff - What is your age range?*

A majority of students (53%) indicated they fell into the age range of 18-30 and 32% indicated they were younger than 25. In contrast, 38% of faculty indicated they are over 60 and 38% indicated they fell into the age range of 45-60.   Only 7% of faculty reported they were under 30 years of age.   This difference indicates a potential digital technology gap between faculty and students.   However, only 1% of faculty indicated they have no Internet access at home and just 4% indicate they have no computer at home.   Two percent (2%) of students indicate they do not have Internet access at home and only 1% indicates they have no computer at home.

Training is ranked by faculty as the most important technology initiative the College needs to address over the next five years (94%).   The next items, electronic books, small device convergence support, degree roadmaps all ranked second in importance with 70% of faculty indicating these as important preferences.   Lecture capture and simulations rank the lowest with 48% and 52% rankings, respectively.   This last ranking presents a challenge for technology advocates since many see both of these approaches as key learning technologies for improving student success.

Almost 40% of Coastline's students consider themselves to be power users and extremely "*Tech-Savvy*." While, only 4% of student indicate they just "*barely get by*."   It is also interesting to note that 55% of students feel they are more skilled or much more skilled than their peers.   These are important indicators, since they tend to demonstrate the technology sophistication of CCC's students.   This may be no surprise since 50% of the students completing the survey indicate that they take classes online and another 26% indicate that they are taking a combination of online and classroom-based courses (76% total).

When students were asked about barriers to student use of technology at Coastline, 61% (considering a combination of high and above average) indicated that "*not enough money to purchase needed equipment and software*" was the most significant barrier.   The second highest item noted by 28% of students was, "*the college owns equipment/software I would like to use, but gaining access is too difficult or inconvenient.*"   The third highest item indicated by 25% of students, was that there is "*not enough help available when students have problems with technology.*"   These three items are significant because resolution of these issues may be possible through various solutions that do not require expensive studies and/or costly implementation of new technology.   For example, even though not enough funding is a challenging issue, one the College is also facing, it is feasible that by leveraging the purchasing power of the College and the District, the College may be able to arrange student discounts for hardware and software.   Providing access to existing resources and offering more student assistance in using technology may also be achievable within current resources.

When students were asked to rank the importance of features used in their Seaport courses they overwhelming selected announcement and calendars as the most important, followed by discussion forums, student resources sharing, plagiarism review, and interactive simulations.   The lowest ranking, in contrast, were given to e-portfolios, social media, and blogs, respectively.   This is not really a surprise in that students are logically most interested in dates that assignments and other requirements are due.

Comparative Analysis
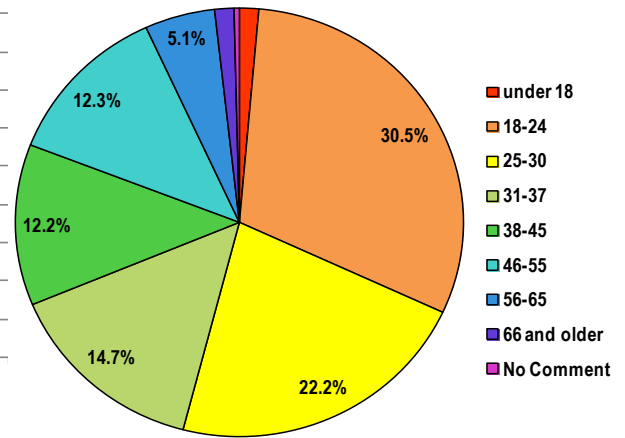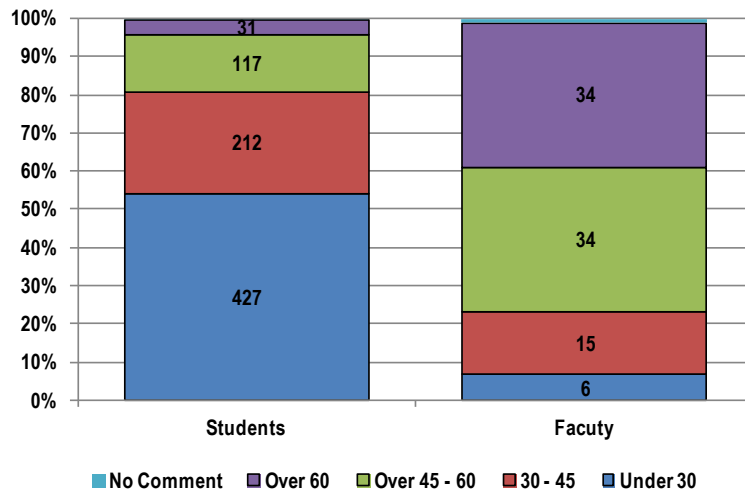
Figure 2: **Faculty and student – faculty age comparison (What is your age range?)**

Figure 3: *Student - **What is your age range?***
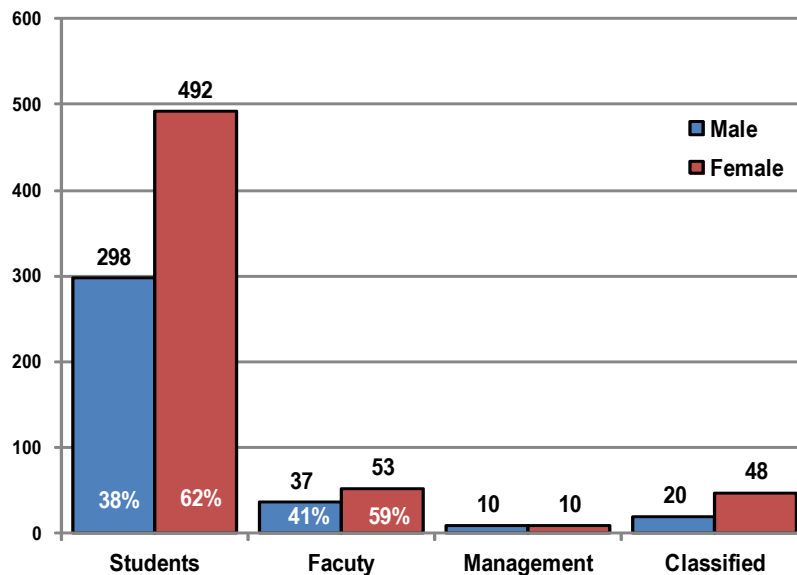
Figure 4**: Student, *faculty, manager, and classified staff - Survey gender distribution***
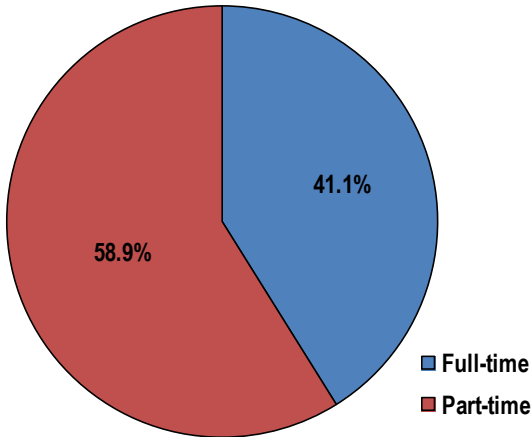
Figure 5: **Faculty - Are you a full-time or part-time instructor?**
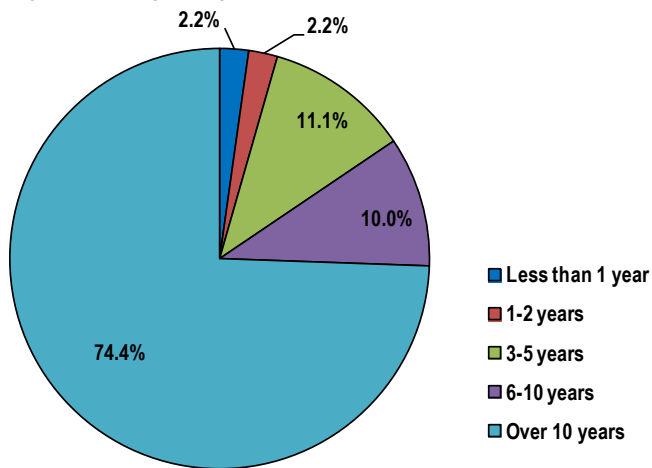
Figure 6: *Faculty - What is your experience teaching in higher education?*
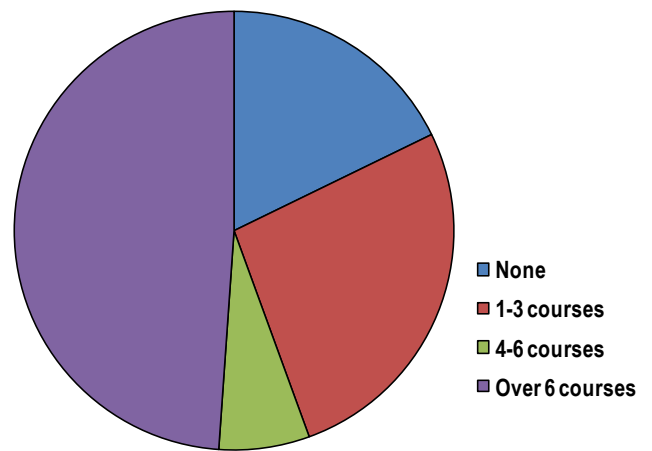
Figure 7: *Faculty – How many online courses have you taught?*
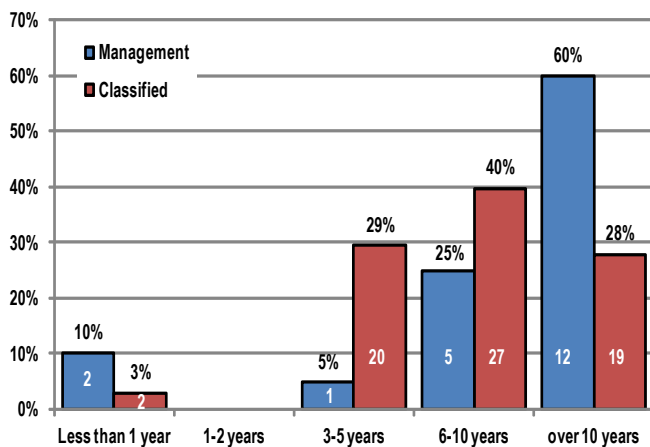
Figure 8: *Faculty, manager, and classified staff - How many years have you worked at Coastline Community College?*
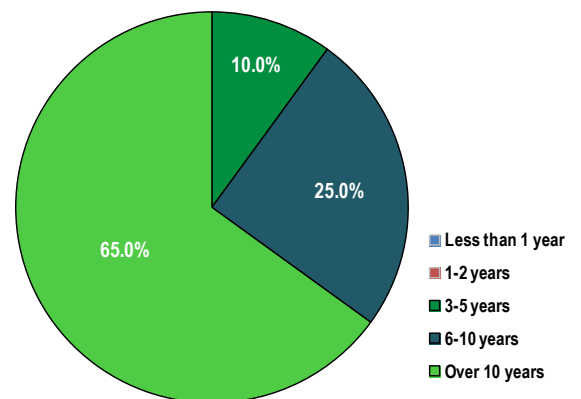
Figure 9: *Manager - How long have you been a manager/administrator?*
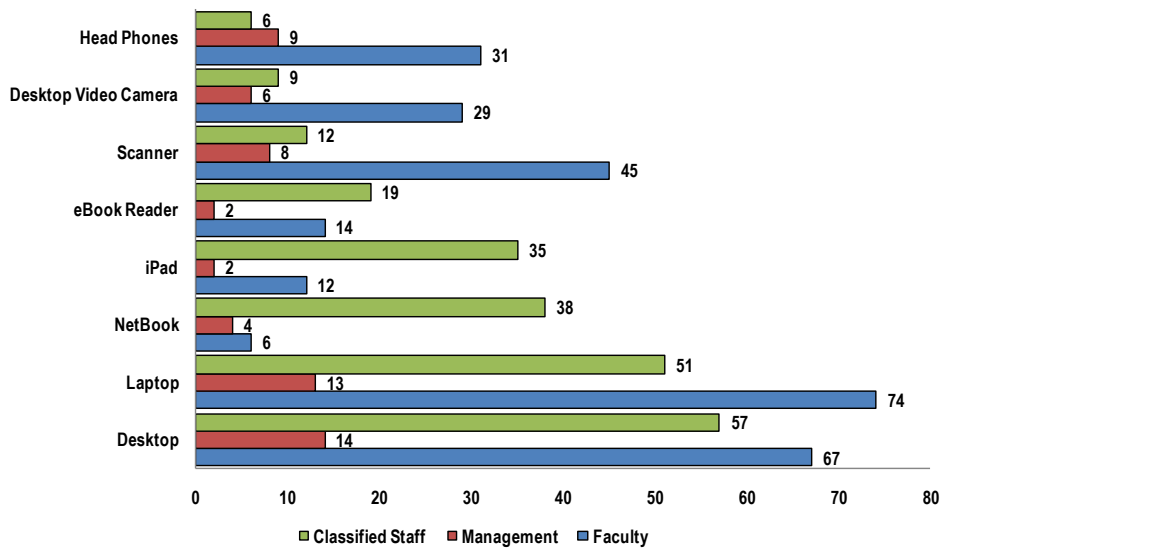
Figure 10: *Faculty, manager and classified staff - What type of computer/s and peripherals do you use at <u>home</u>?*
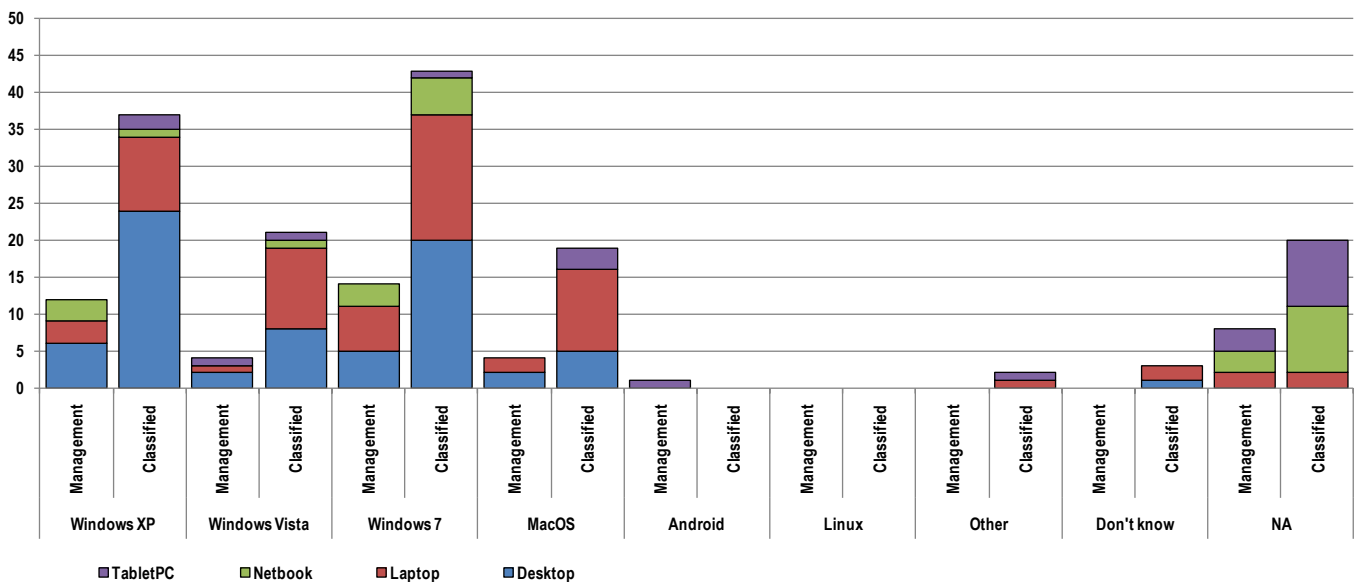
Figure 11: *Management and classified staff - What operating system/s do you use at <u>home</u> with each of the following platforms?*
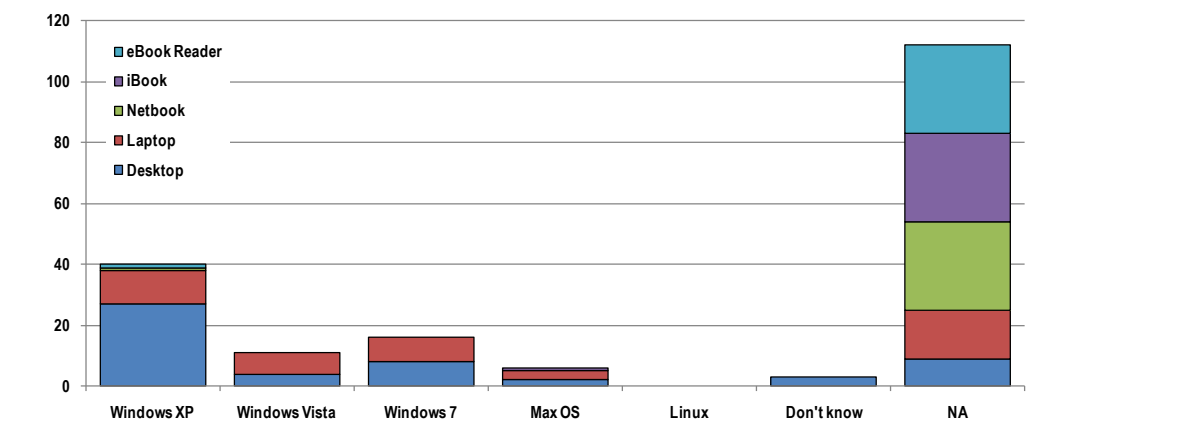
Figure 12: *Faculty Survey: What operating system/s do you use at <u>work</u> with each of the following platforms?*
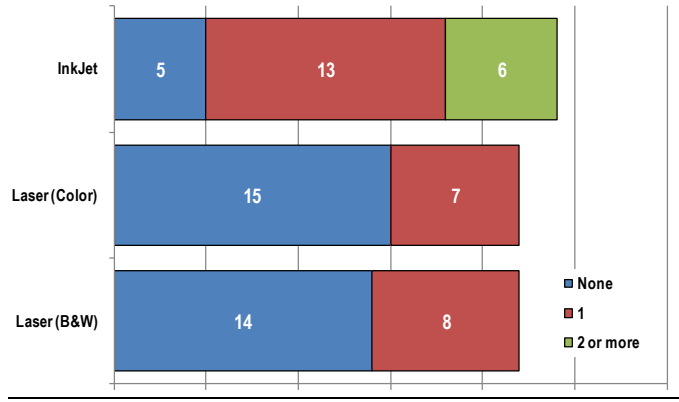
Figure 13: *Faculty - What type and number of printer/s do you use at home?*
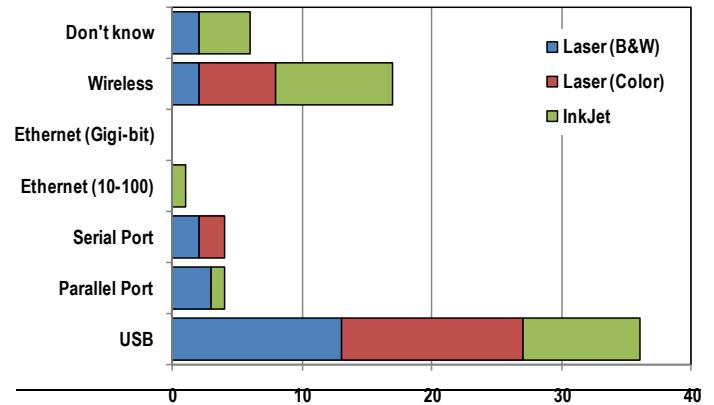
Figure 14: *Faculty – How are your printer/s connected to your computer/s at home?*
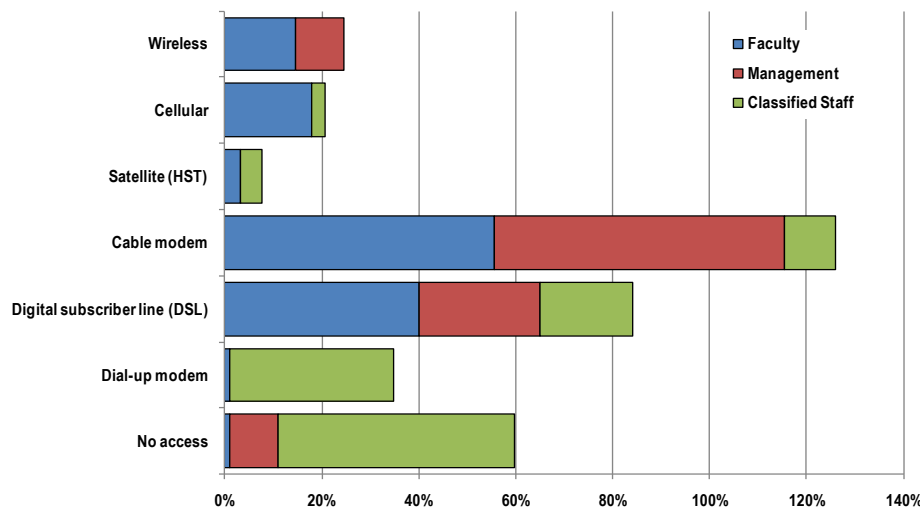
Figure 15: *Faculty, management and classified staff - What type of internet service do you use at home?*
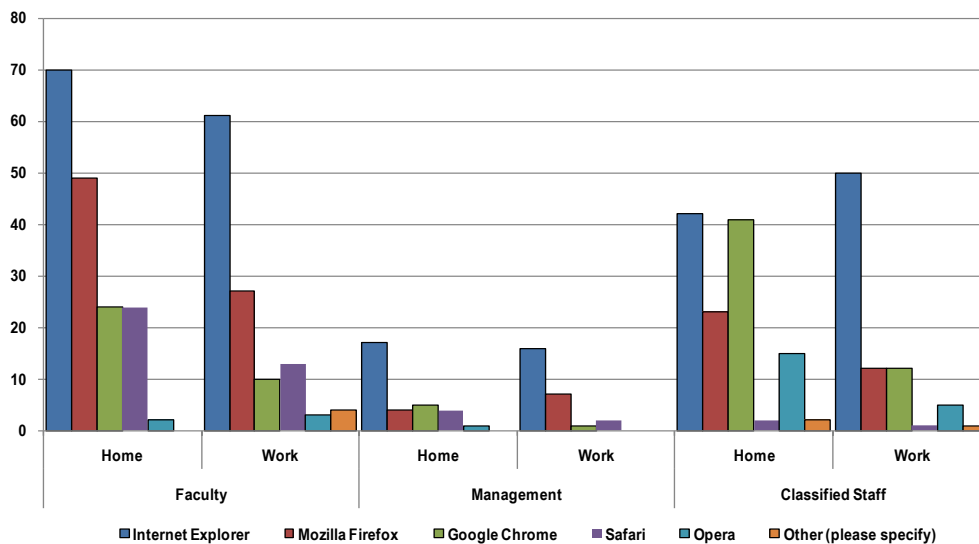
Figure 16: *Faculty, management and staff – What Internet browser/s do you use at home and work?*
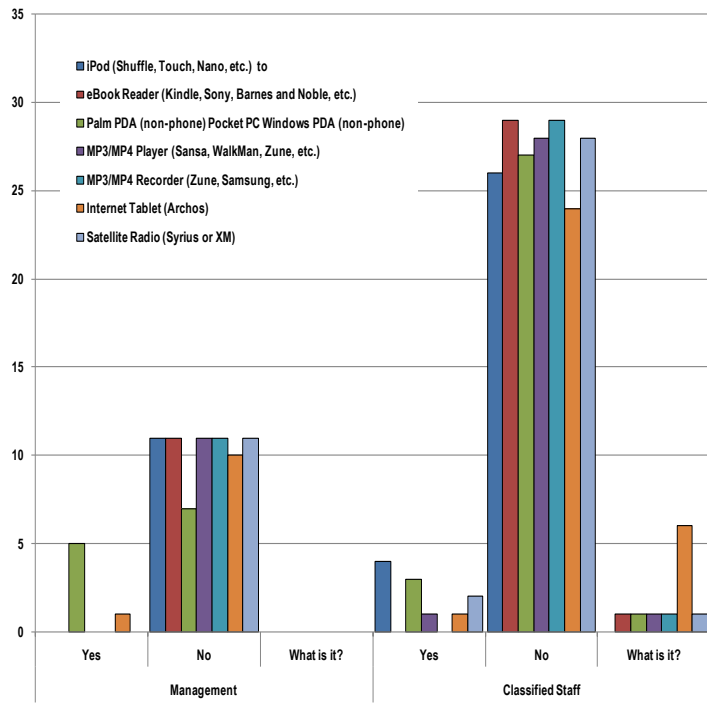
Figure 17: *Managers and classified staff - What dedicated hand-held multimedia players do you use for work?*
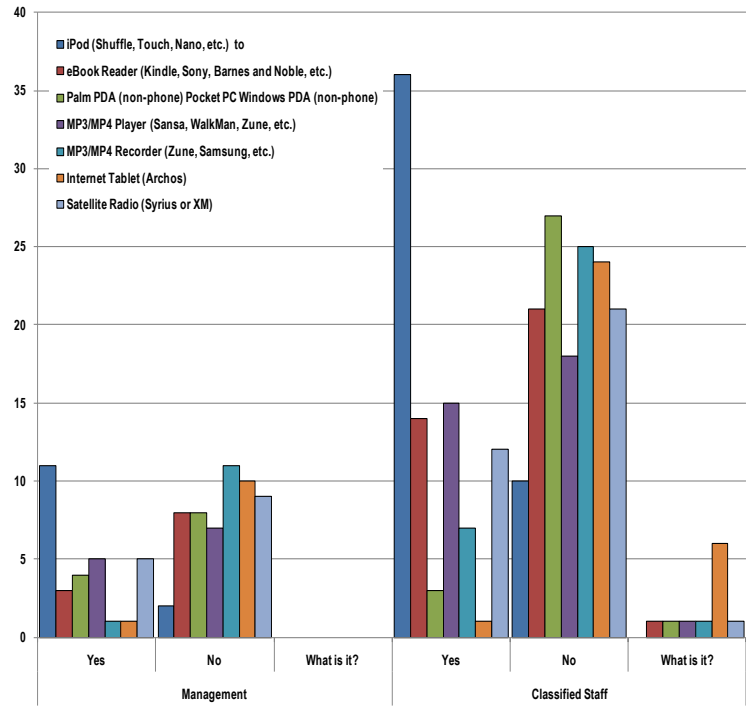
Figure 18: *Managers and classified staff - What dedicated hand-held multimedia players do you use for entertainment?*
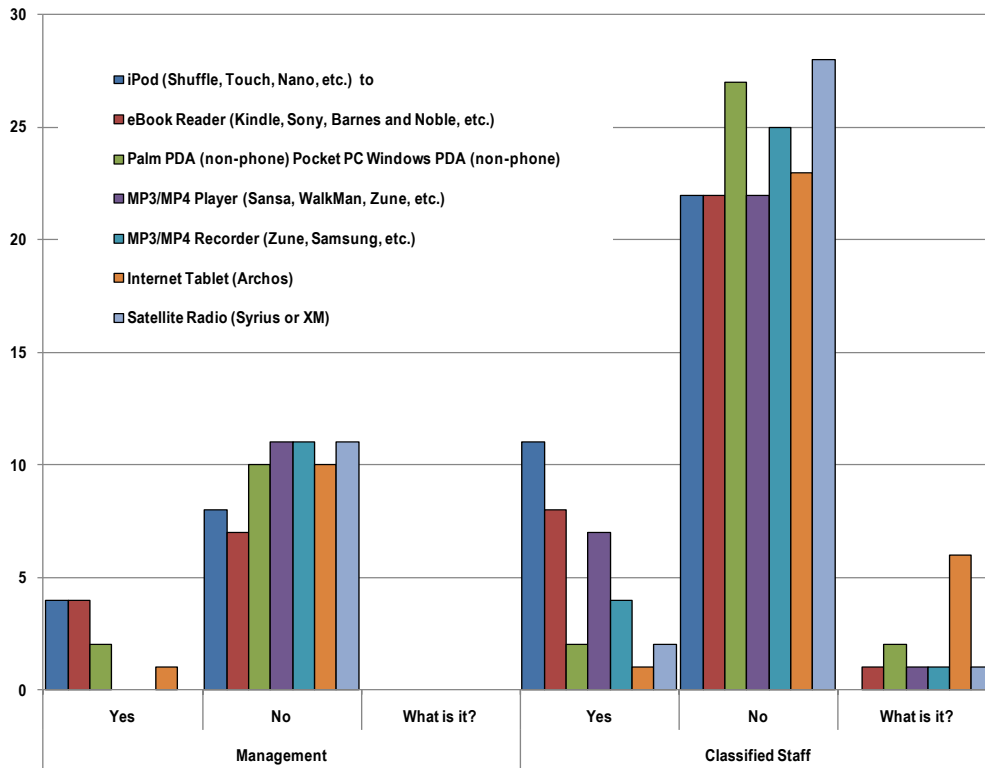
Figure 19: *Managers and classified staff - What dedicated hand-held multimedia players do you use for learning?*
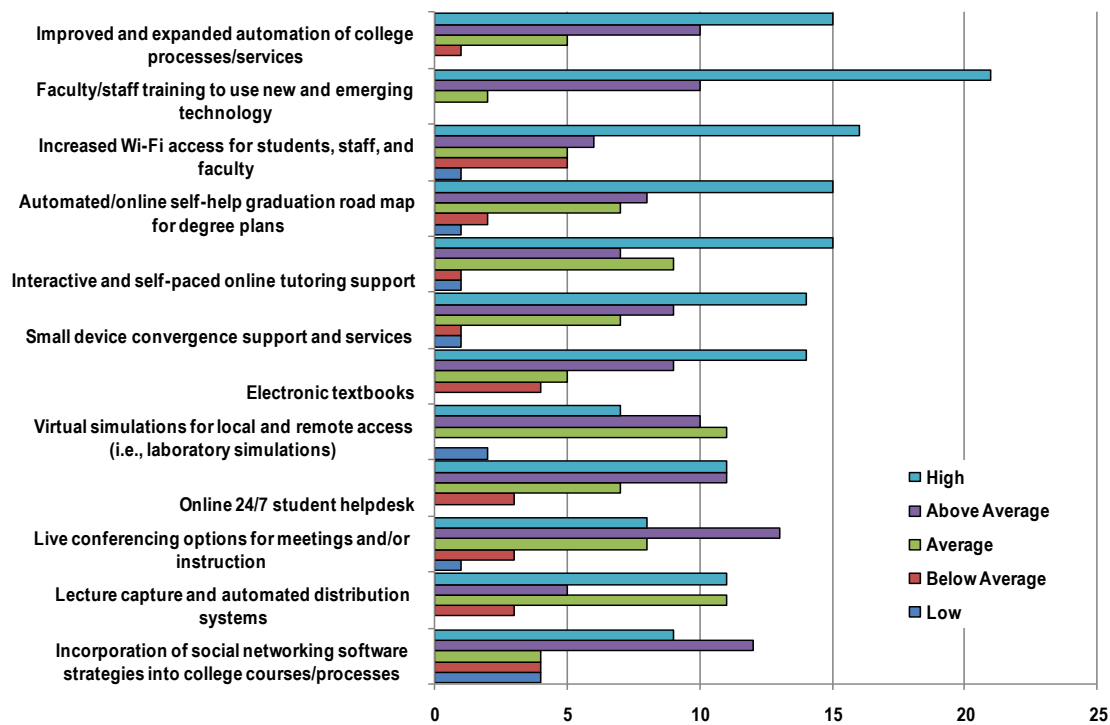
Figure 20: *Faculty - Rank the importance of the following technology initiatives the college should address in the next 5 years.*
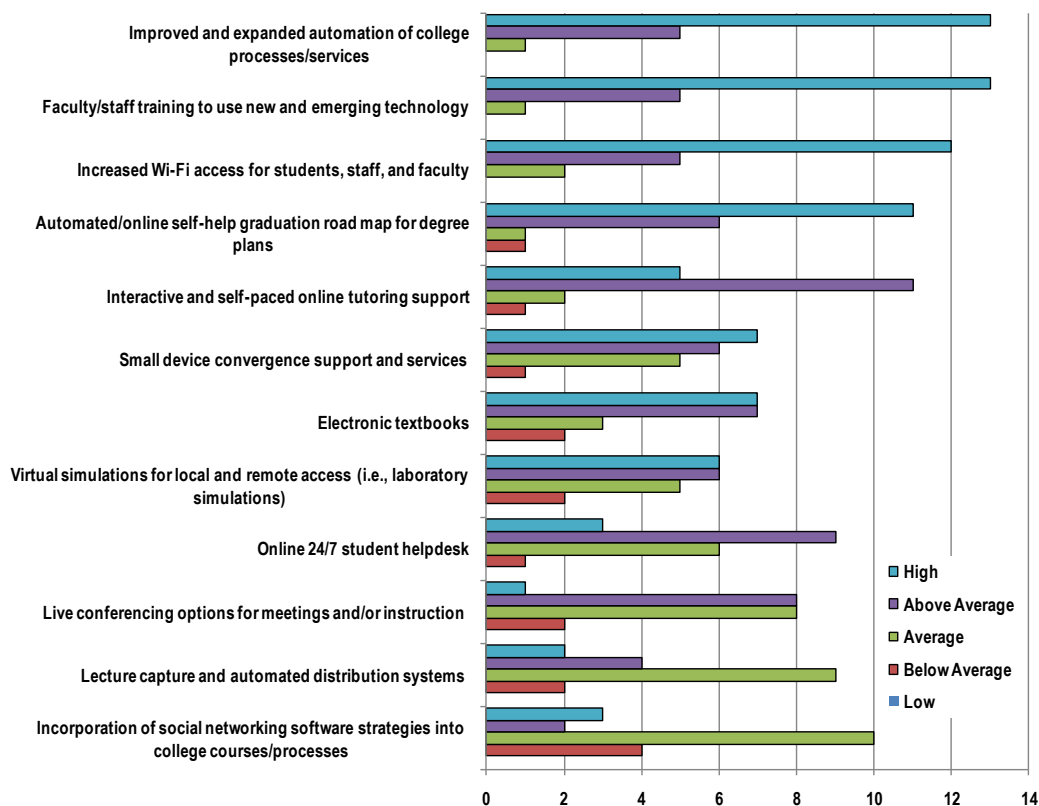
Figure 21: *Managers - Rank the importance of the following technology initiatives the college should address in the next 5 years.*

Appendix II: <u>Part 2. Students Technology Survey 2010-2011: Responses</u>

QUESTIONS 1a1b1c

What is your gender?

Answer Options	Response Percent	Response Count
Female	62.3%	492
Male	37.7%	298
answered question		790
skipped question		0

What is your gender?
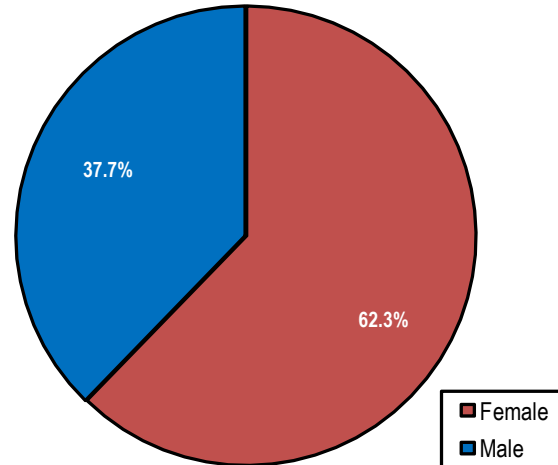
QUESTIONS 2a2b2c

What is your ethnicity?

Answer Options	Response Percent	Response Count
African-American	3.5%	28
Asian-American	26.3%	208
Hispanic	12.8%	101
Native-American	1.0%	8
White, non-Hispanic	40.9%	323
Multi-ethnic	5.6%	44
Other	6.6%	52
No Comment	3.3%	26
answered question		790
skipped question		0

What is your ethnicity?
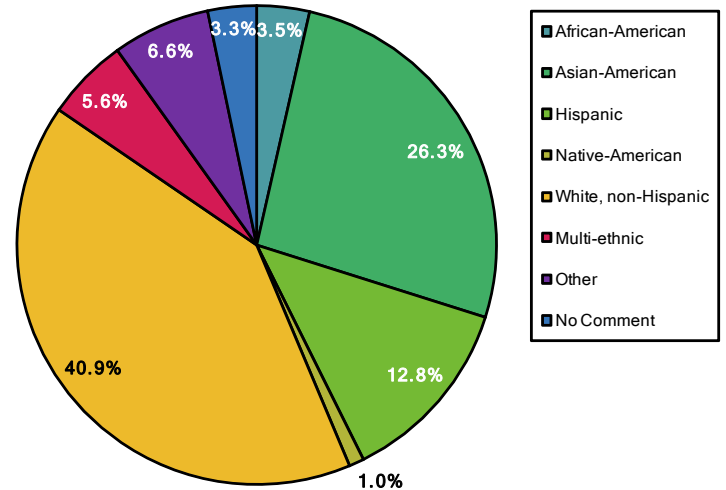
QUESTION 3a3b3c

How old are you?

Answer Options	Response Percent	Response Count
under 18	1.4%	11
18-24	30.5%	241
25-30	22.2%	175
31-37	14.7%	116
38-45	12.2%	96
46-55	12.3%	97
56-65	5.1%	40
66 and older	1.4%	11
No Comment	0.4%	3
answered question		790
skipped question		0

How old are you?
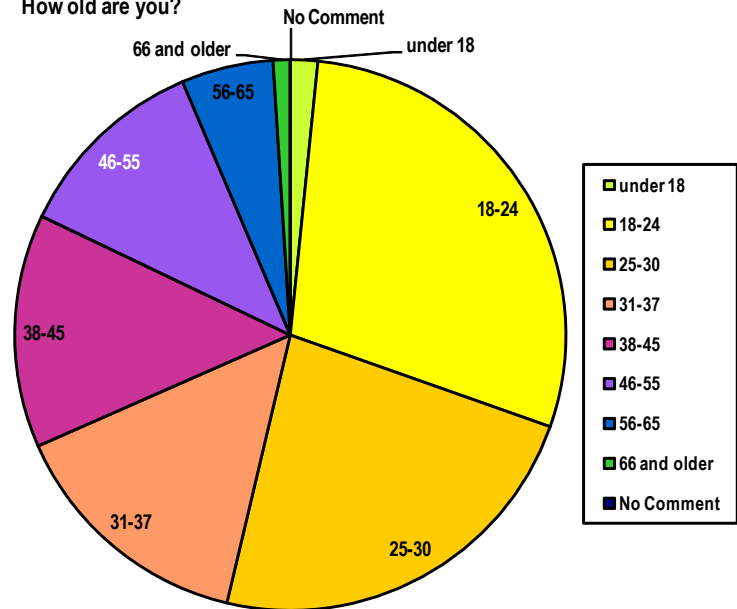
QUESTIONS 4a4b4c

Are you a full-time or part-time student?

Answer Options	Response Percent	Response Count
Full-time	48.2%	381
Part-time	51.8%	409
answered question		790
skipped question		0

Are you a full-time or part-time student?
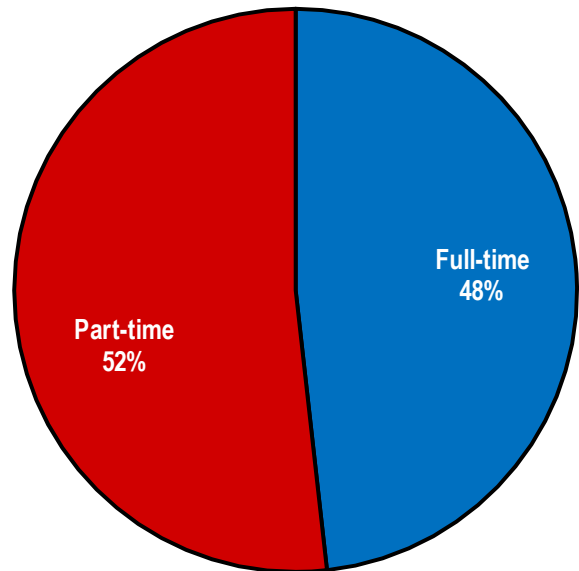
QUESTIONS 5a5b5c

What is your employment status?

Answer Options	Response Percent	Response Count
Full-time	38.2%	302
Part-time	28.7%	227
Unemployed	33.0%	261
	answered question	790
	skipped question	0

What is your employment status?
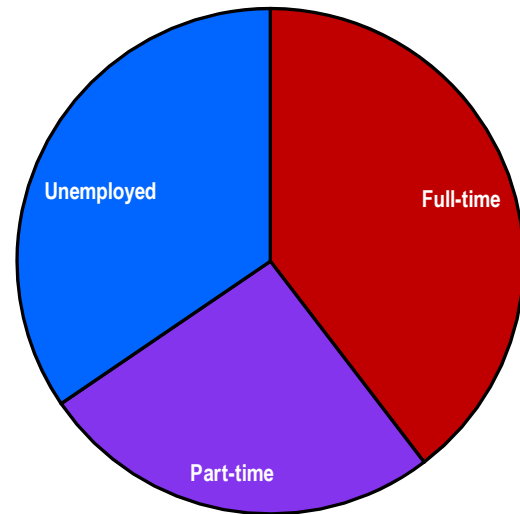
QUESTION 6a

How tech-savvy are you with computers and other technology?

Answer Options	Response Percent	Response Count
I barely get by	3.8%	12
I am competent	56.9%	178
I am a power-user	39.3%	123
	answered question	313
	skipped question	0

How tech-savvy are you with computers and other technology?
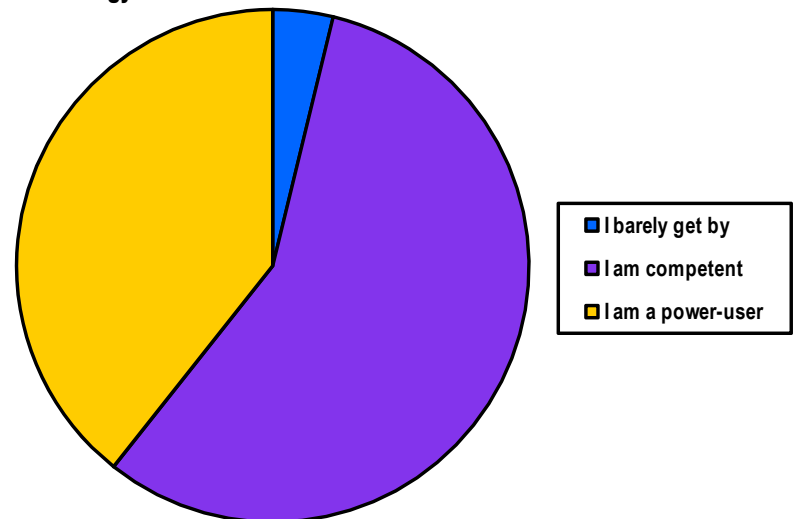
QUESTION 6b

How do you primarily take classes?

Answer Options	Response Percent	Response Count
Day	9.3%	20
Night	13.9%	30
Weekends	0.5%	1
On-line	50.0%	108
Combination	26.4%	57
	answered question	216
	skipped question	0

How do you primarily take classes?

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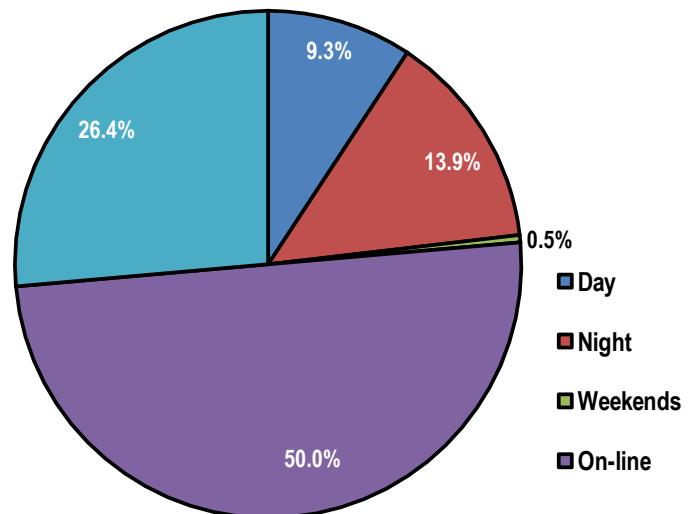
QUESTION 6c

What dedicated hand-held multimedia players do you use? How often do you use them? Do you use them for learning? (please indicate the best answer for each drop-down box)

Use

Answer Options	Yes	No	What is it?				Response Count
iPod (Shuffle, Touch, Nano, etc.)	172	81	3				256
eBook Reader (Kindle, Sony, Barnes and Noble, etc.)	51	193	3				247
Palm PDA (non-phone)	9	224	13				246
Pocket PC Windows PDA (non-phone)	12	217	16				245
MP3/MP4 Player (Sansa, WalkMan, Zune, etc.)	70	175	1				246
MP3/MP4 Recorder (Zune, Samsung, etc.)	39	204	3				246
Internet Table (Archos)	30	168	48				246
Satellite Radio (Syrius or XM)	57	181	7				245

Frequency

Answer Options	Hourly	Daily	Weekly	Monthly	Occasionally	Never	Response Count
iPod (Shuffle, Touch, Nano, etc.)	21	80	38	4	34	59	236
eBook Reader (Kindle, Sony, Barnes and Noble, etc.)	4	13	15	3	19	123	177
Palm PDA (non-phone)	4	3	2	0	1	143	153
Pocket PC Windows PDA (non-phone)	2	6	0	0	5	142	155
MP3/MP4 Player (Sansa, WalkMan, Zune, etc.)	7	18	21	4	21	106	177
MP3/MP4 Recorder (Zune, Samsung, etc.)	2	9	9	3	17	125	165
Internet Table (Archos)	4	21	3	0	3	129	160
Satellite Radio (Syrius or XM)	4	36	8	3	7	114	172

Use for Learning

Answer Options	Yes	No	I would like to				Response Count
Palm PDA (non-phone)	7	110	59				235
Pocket PC Windows PDA (non-phone)	12	106	80				175
Satellite Radio (Syrius or XM)	15	122	34				151
MP3/MP4 Player (Sansa, WalkMan, Zune, etc.)	24	123	35				153
MP3/MP4 Recorder (Zune, Samsung, etc.)	24	115	27				174
Internet Table (Archos)	29	101	23				162
eBook Reader (Kindle, Sony, Barnes and Noble, etc.)	30	65	28				158
iPod (Shuffle, Touch, Nano, etc.)	63	113	33				170
						answered question	**261**
						skipped question	**0**

What dedicated hand-held multimedia players do you use?
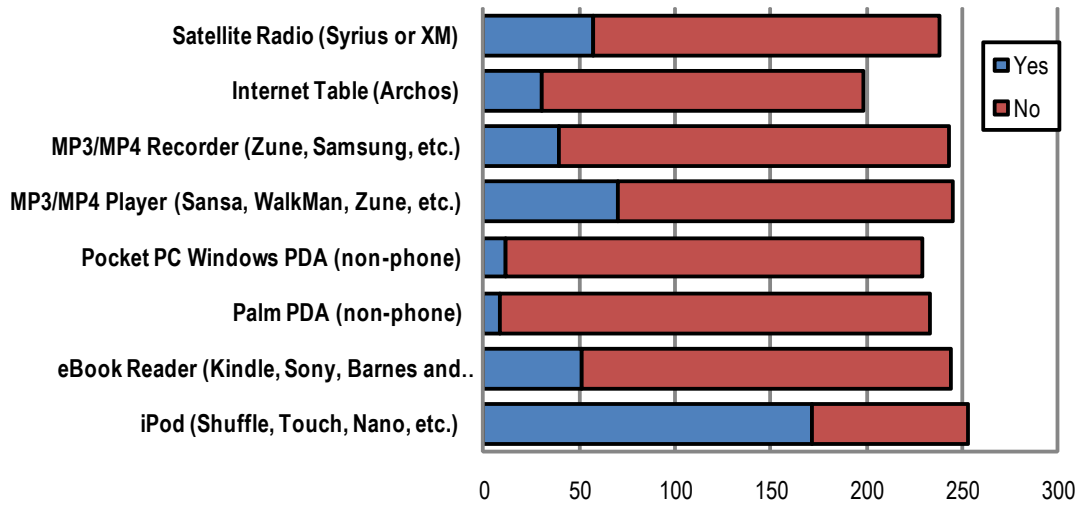
How often do you use your dedicated hand-held multimedia players?
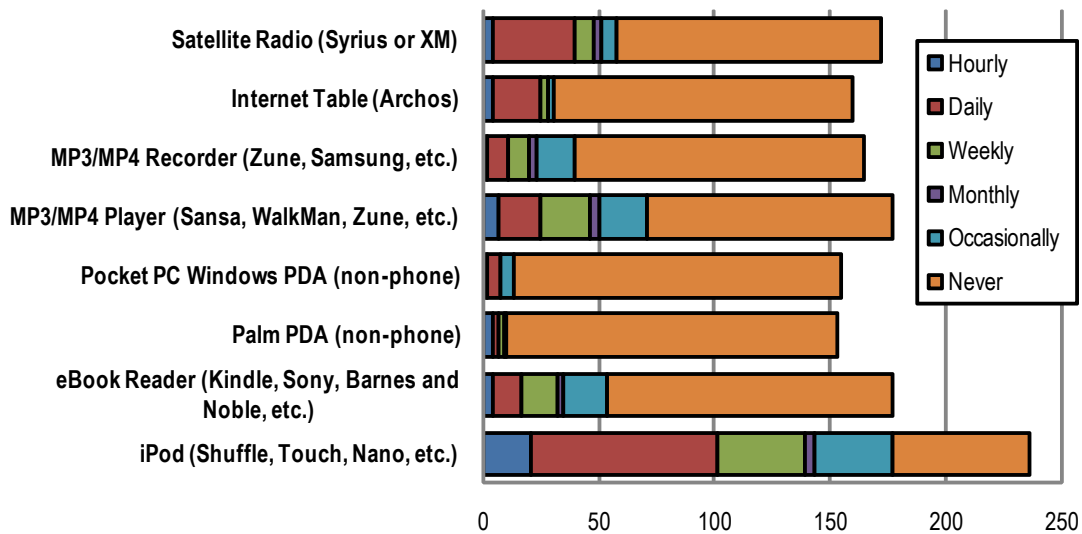
What dedicated hand-held multimedia players do you use for learning?
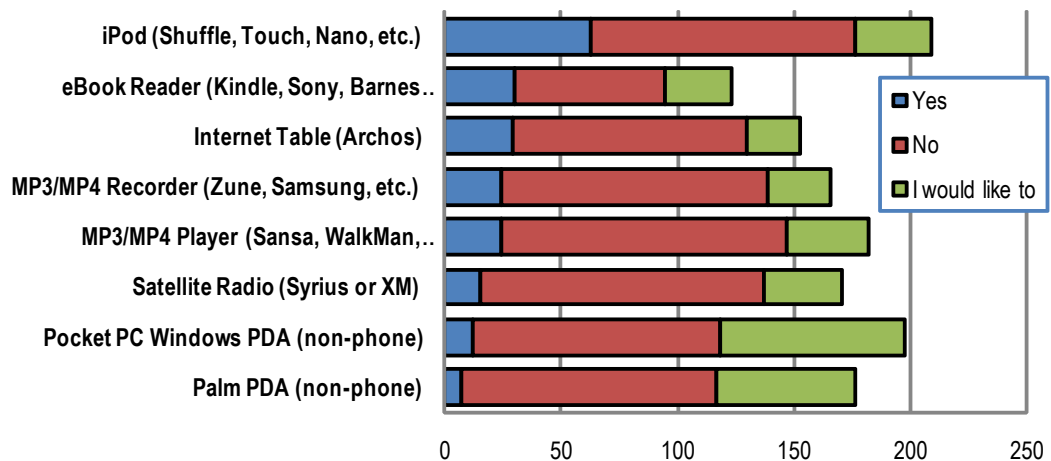
QUESTION 7a

How would you rate your overall skill level using educational technology, compared to other Coastline students?

Answer Options	Response Percent	Response Count
Much less skilled	0.3%	1
Less skilled	5.4%	17
At about the same skill	29.1%	91
More skilled	39.9%	125
Much more skilled	16.6%	52
Don't Know	8.6%	27
	answered question	**313**
	skipped question	**0**

How would you rate your overall skill level using educational technology, compared to other Coastline students?
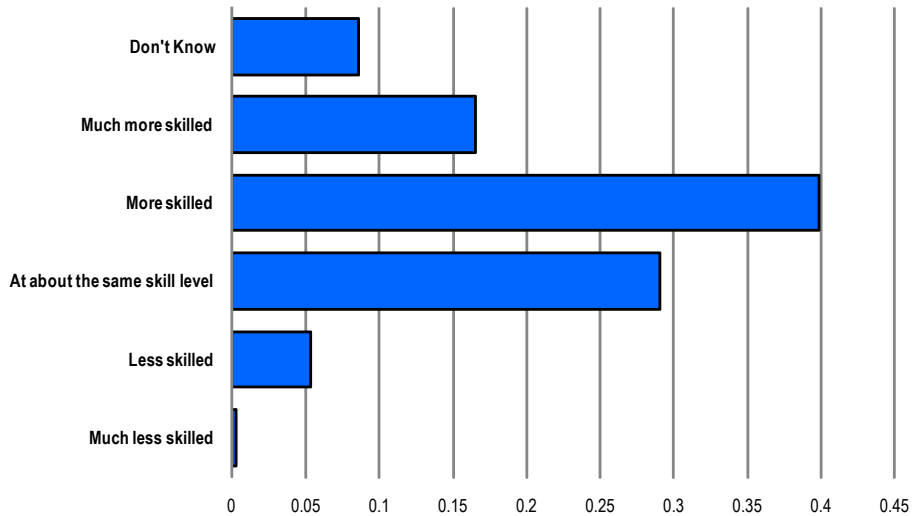
QUESTION 7b

How many credit hours/units have you completed?

Answer Options	0 - 6	7 - 12	13 - 18	19 - 24	25 - 32	Over 32	Unsure	Response Count
Coastline	93	38	25	17	10	25	8	216
Other Colleges	35	13	19	12	13	111	13	216
						answered question		**216**
						skipped question		**0**

How many credit hours/units have you completed?
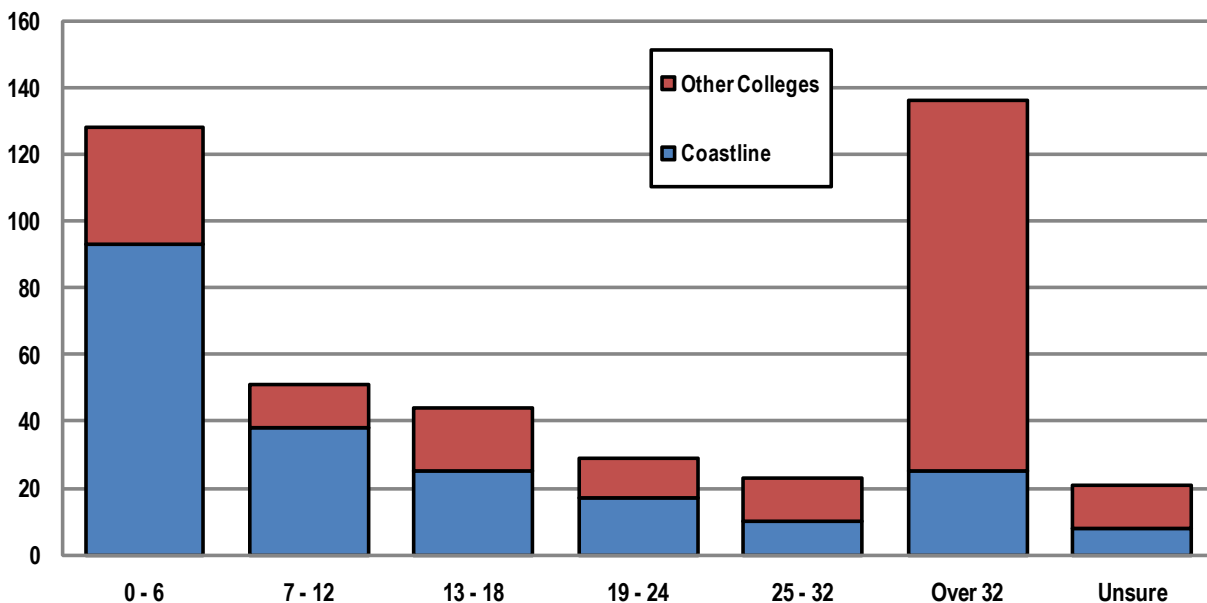
QUESTIONS 7c10b

What's your primary cell/mobile phone? (check all that apply)

Answer Options	Response Percent	Response Count
None (I don't have a cell phone)	2.2%	11
Standard Cell Phone (no mobile web capabilities)	33.1%	163
iPhone	24.4%	120
Blackberry	9.3%	46
Android OS Phone (Google phone, HTC, etc)	23.0%	113
Windows Mobile Phones	5.5%	27
Symbian Smart Phone	2.4%	12
answered question		492
skipped question		0

What's your primary cell/mobile phone?
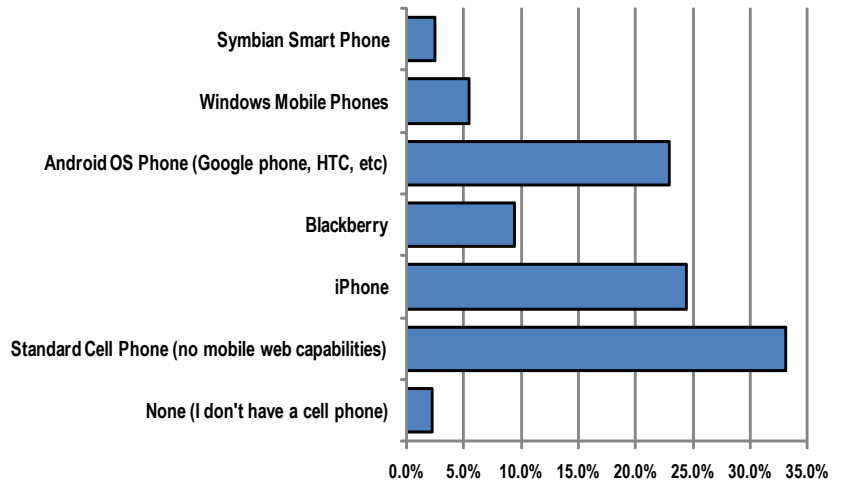
QUESTIONS 8a9b

What type of internet service do you use at home (select as many answers as appropriate)?

Answer Options	Response Percent	Response Count
No access	2.1%	11
Dial-up modem	2.5%	13
Digital subscriber line (DSL)	36.9%	195
Cable modem	49.5%	262
Satellite (HST)	2.3%	12
Cellular	15.7%	83
Wireless	14.2%	75
answered question		529
skipped question		0

What type of internet service do you use at home?
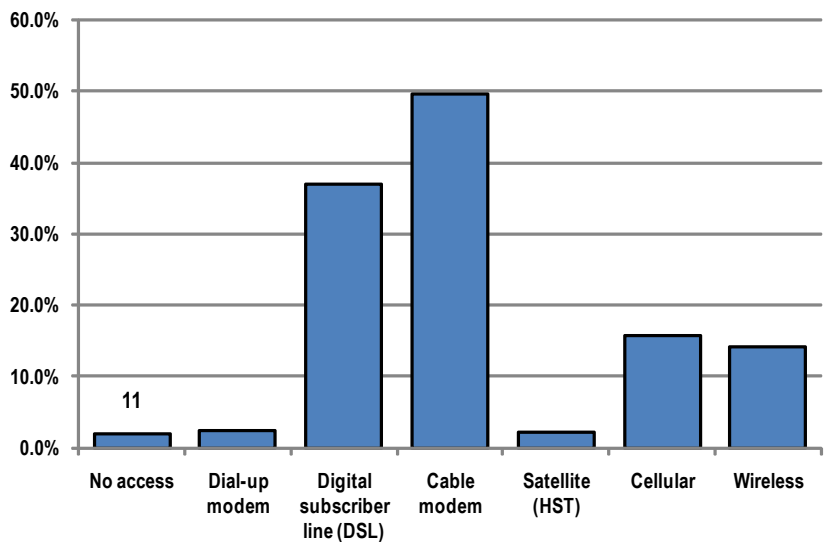
QUESTION 8b

How would you like Coastline to communicate with you about the following?

Answer Options	MyCCC Portal	Seaport Announcement	CCC Email	CCC Website	Twitter	Text messages	Phone	Mail	Facebook	Other	Response Count
Your account, academic	49	2	125	6	0	9	3	8	2	10	214
General updates about the	46	12	107	28	0	3	2	8	2	5	213
Information about events and	45	16	93	31	2	6	1	6	7	7	214
										answered question	214
										skipped question	2

How would you like Coastline to communicate with you about the following?
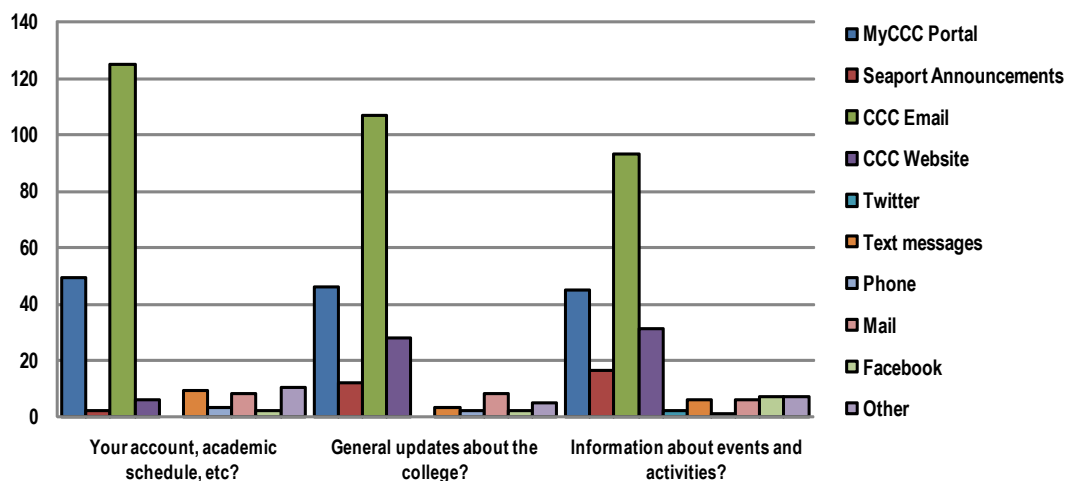
QUESTION 8c

What type of computer/s and peripherals do you use at home?

Answer Options	Response Percent	Response Count
Desktop Computer	66.8%	173
Desktop Video Camera	20.8%	54
eBook Reader	12.0%	31
Head Phones	44.8%	116
iBook	6.6%	17
InkJet Printer	51.0%	132
iPad	6.9%	18
Laptop Computer	81.1%	210
Laser Printer (B&W)	19.7%	51
Laser Printer (Color)	28.6%	74
NetBook Computer	10.4%	27
Scanner	50.2%	130
TablePC	2.3%	6
Touch Book Computer	0.8%	2
answered question		259
skipped question		2

What type of computer/s and peripherals do you use at home?
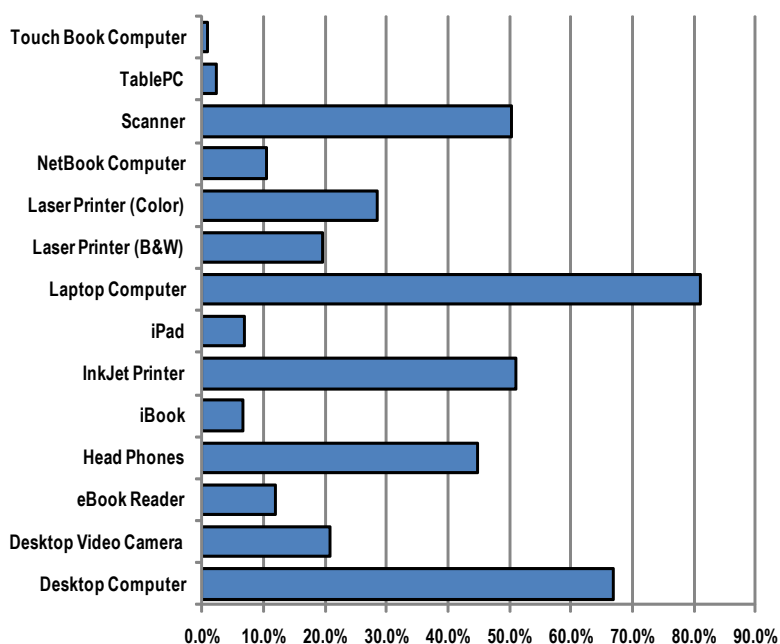
QUESTION 9a

What Internet browser/s do you use at home?

Answer Options	Response Percent	Response Count
Internet Explorer	57.2%	179
Google Chrome	35.8%	112
Mozilla Firefox	60.7%	190
Netscape Navigator	1.9%	6
Opera	3.2%	10
Safari	29.1%	91
I don't have a computer	0.6%	2
Other (please specify)		5
answered question		313
skipped question		0

What Internet browser/s do you use at home?
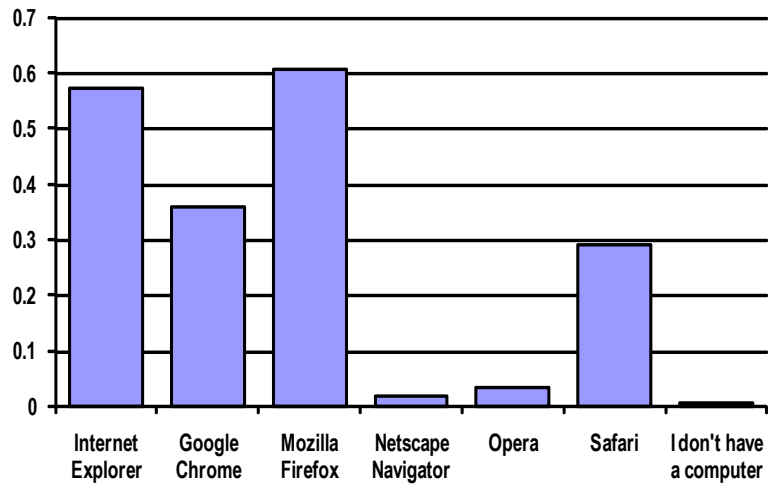
QUESTION 9c

What operating system/s do you use at home?

Answer Options	Windows XP	Windows Vista	Windows 7	Max OS	Linux	Other	Don't know	Response Count
Desktop	69	32	50	15	3	2	6	177
Laptop	45	50	80	37	1	3	3	219
Netbook	16	6	20	6	4	10	33	95
answered question								236
skipped question								25

What operating system/s do you use at home?
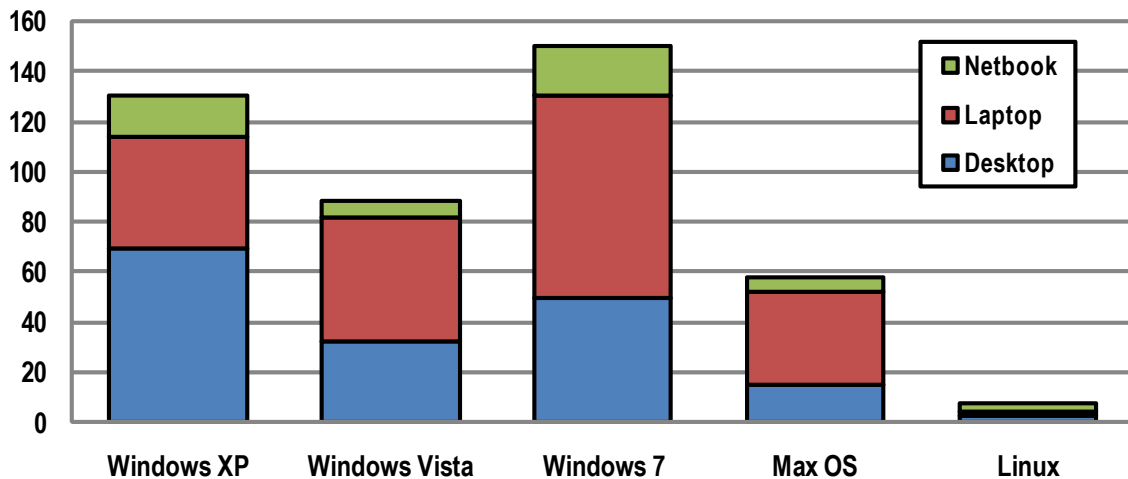
QUESTION 10a

Other than voice calls, how do you use your cell/mobile phone?

Answer Options	Response Percent	Response Count
Reading eBooks	23.4%	70
Taking/participating in classes	24.4%	73
Listening to the radio	27.4%	82
Watching videos	47.8%	143
Playing music	57.9%	173
Searching the web	69.6%	208
Texting	89.6%	268
answered question		299
skipped question		14

Other than voice calls, how do you use your cell/mobile phone?
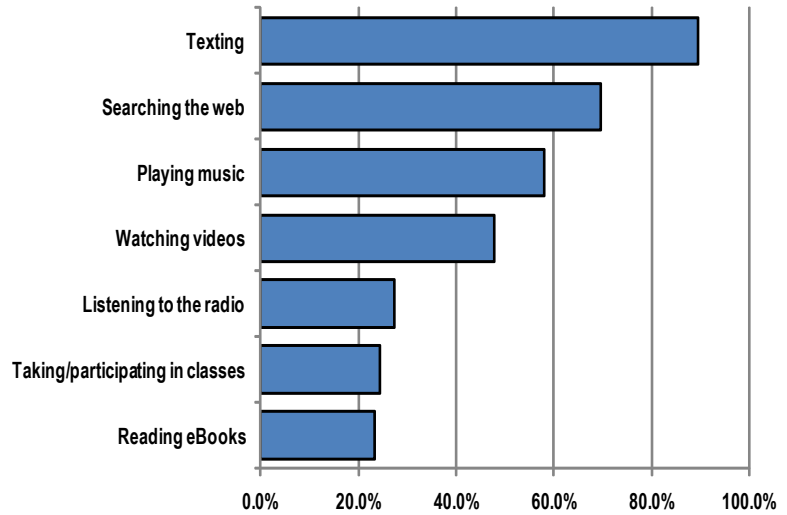
QUESTION 10c

Please rate from highest to lowest the significance of the following factors as barriers to student use of technology for learning:

Answer Options	Low	Below Average	Average	Above Average	High	No Opinion	Rating Average	Response Count
I am not interested in using technology	148	26	33	8	11	10	1.64	236
Faculty are not interested in using technology to facilitate learning	63	48	57	26	16	26	2.18	236
Not enough training offered in the areas that interest you	49	47	66	37	18	19	2.45	236
Not enough people to help you when you have problems with technology	49	50	62	38	22	15	2.53	236
Insufficient computing facilities (labs, technology-equipped classroom)	43	52	73	22	24	22	2.43	236
Insufficient computing infrastructure (servers, bandwidth, storage capacity)	45	46	79	23	26	17	2.53	236
Not enough time	71	29	75	23	27	11	2.46	236
The college owns equipment/software you would like to use, but gaining access to the resources is too difficult or inconvenient	39	37	73	37	30	20	2.67	236
Not enough money to purchase the equipment and software needed	26	14	48	40	103	5	3.70	236
answered question								236
skipped question								25

Please rate from highest to lowest the significance of the following factors as barriers to student use of technology for learning:
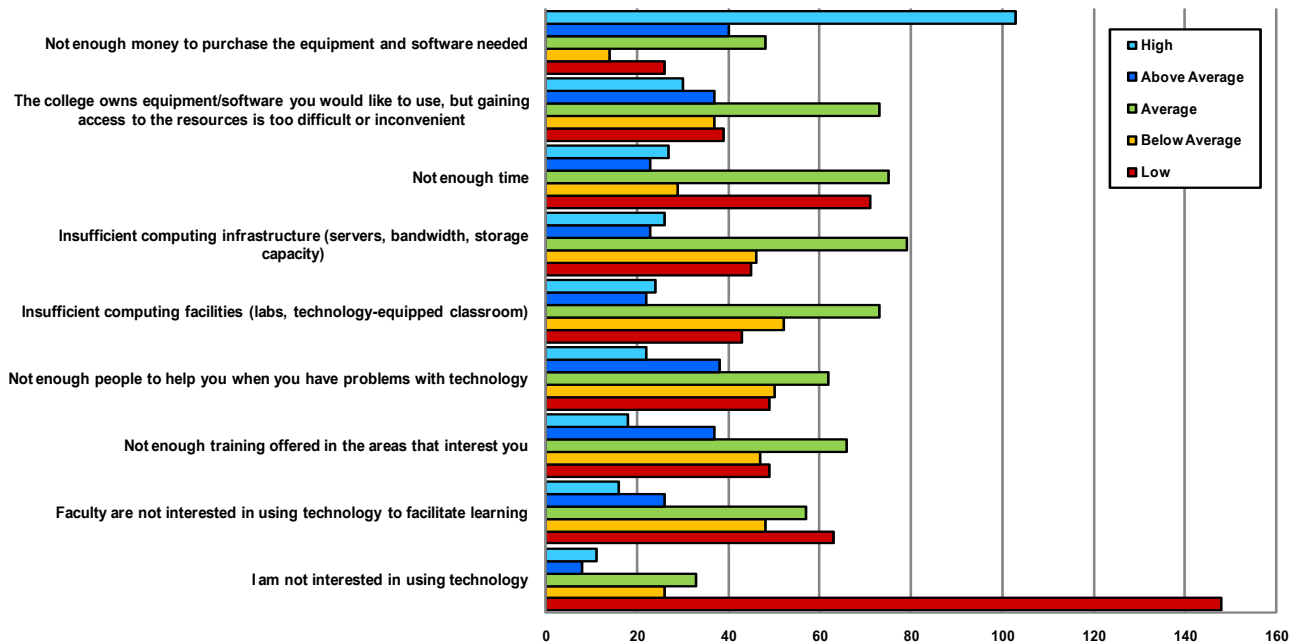
QUESTION 11a

How do you manage your computer at home?

Answer Options	Response Percent	Response Count
I don't have a computer	1.0%	231
Use vendor for all support	6.4%	227
Consult with friend or 3rd party for support	43.1%	161
Install memory, storage devices, and/or	51.4%	135
Load new software	72.5%	20
Install and manage security software and	73.8%	3
answered question		**313**
skipped question		**0**

How do you manage your computer at home?
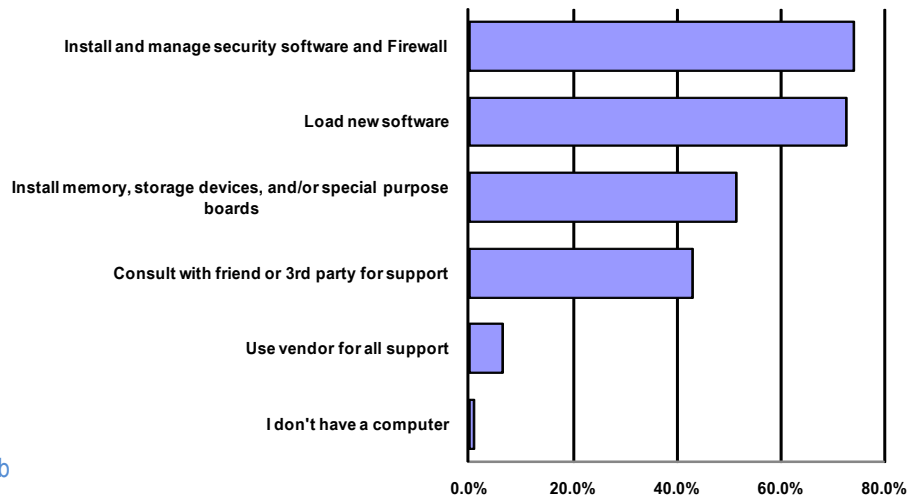
QUESTION 11b

What operating system/s do you use at home?

Answer Options	Windows XP	Windows Vista	Windows 7	Max OS	Linux	Other	Don't know	Not Applicable	Response Count
Desktop	53	27	46	16	0	2	3	46	193
Laptop	28	38	68	43	0	6	2	24	209
Netbook	16	4	15	3	2	5	0	111	156
answered question									**216**
skipped question									**0**

What operating system/s do you use at home?
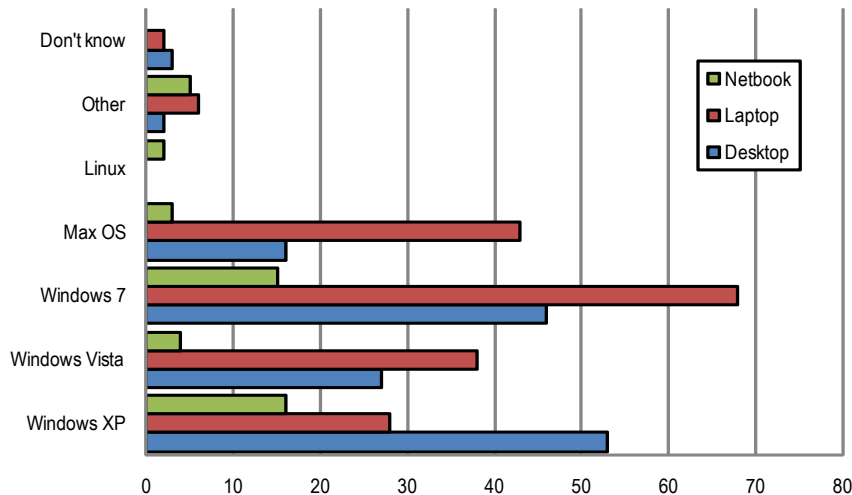
QUESTION 12a

How do you use your laptop computer in classes?

Answer Options	Response Percent	Response Count
Micro-blogging (Twitter)	3.1%	9
Other (please specify)	6.8%	20
Backchannel discussions	11.6%	34
I don't have a laptop	18.4%	54
Instant messaging or chat	19.5%	57
Surfing the web	48.8%	143
Looking up unfamiliar terms	52.2%	153
Taking notes	56.7%	166
Reviewing course materials	64.2%	188
Email	64.8%	190
Completing assignments	66.2%	194
answered question		293
skipped question		20

How do you use your laptop computer in classes?
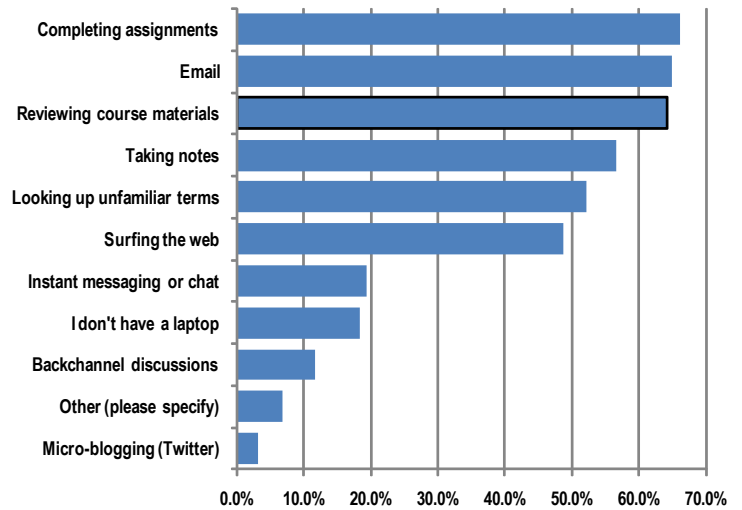
QUESTION 12b

What video game console/system(s) do you have at home?

Answer Options	Response Percent	Response Count
Other (please specify)	7.4%	16
Gameboy	12.0%	26
Xbox	28.7%	62
Play Station	29.2%	63
None	36.1%	78
Wii	40.3%	87
answered question		216
skipped question		0

What video game console/system(s) do you have at home?
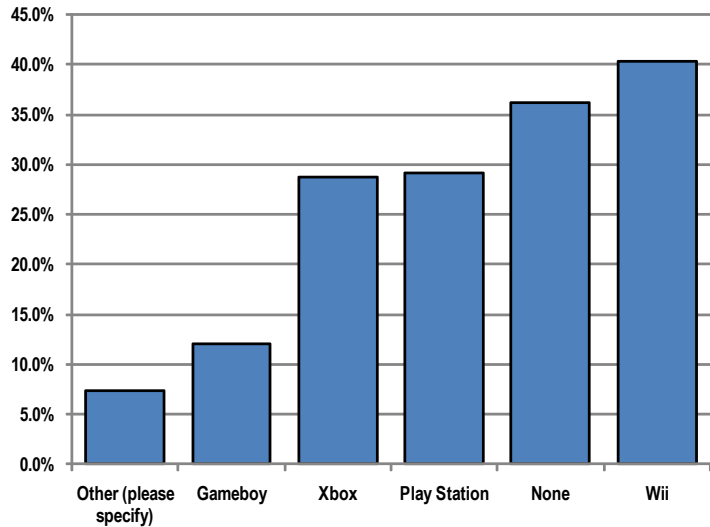
QUESTION 1c

Are you currently using Seaport for a course that you are taking this semester?

Answer Options	Response Percent	Response Count
Yes	83.5%	197
No	14.4%	34
What is it?	2.1%	5
answered question		236
skipped question		25

Are you currently using Seaport for a course that you are taking this semester?
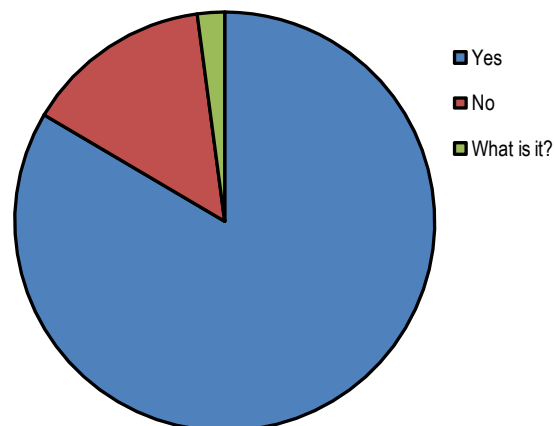
How would you rate Coastline's Learning Management System (Seaport) to others you have used? Why do you feel they are better or worse?

Comparative Rating to Seaport

Answer Options	Significantly Better	Slightly Better	No Significant Difference	Slightly Worse	Significantly Worse	Response Count
Moodle	6	11	24	7	1	49
aTutor	7	8	27	4	1	47
Angel	8	12	28	2	1	51
Sakai	8	7	22	4	1	42
SharePointLMS	9	6	23	5	1	44
WebCT	9	11	26	7	2	55
WebStudy	9	12	22	3	2	48
Desire2Learn	10	5	26	4	1	46
eCollege	13	9	21	6	0	49
Blackboard	37	29	48	21	3	138

Reason for rating?

Answer Options	Look and feel	Features	Organization	Navigation	Other	Response Count
Moodle	6	7	6	10	17	46
Desire2Learn	8	9	6	4	15	42
Sakai	8	9	4	4	16	41
SharePointLMS	9	9	6	5	14	43
aTutor	10	7	10	5	14	46
WebCT	10	7	9	7	18	51
Angel	12	10	9	5	14	50
eCollege	12	9	8	3	13	45
WebStudy	12	11	3	4	15	45
Blackboard	22	26	29	28	17	122
					answered question	154
					skipped question	107

How would you rate Coastline's Learning Management System (Seaport) to others you have used?

■ Significantly Better ■ Slightly Better □ No Significant Difference ■ Slightly Worse ■ Significantly Worse
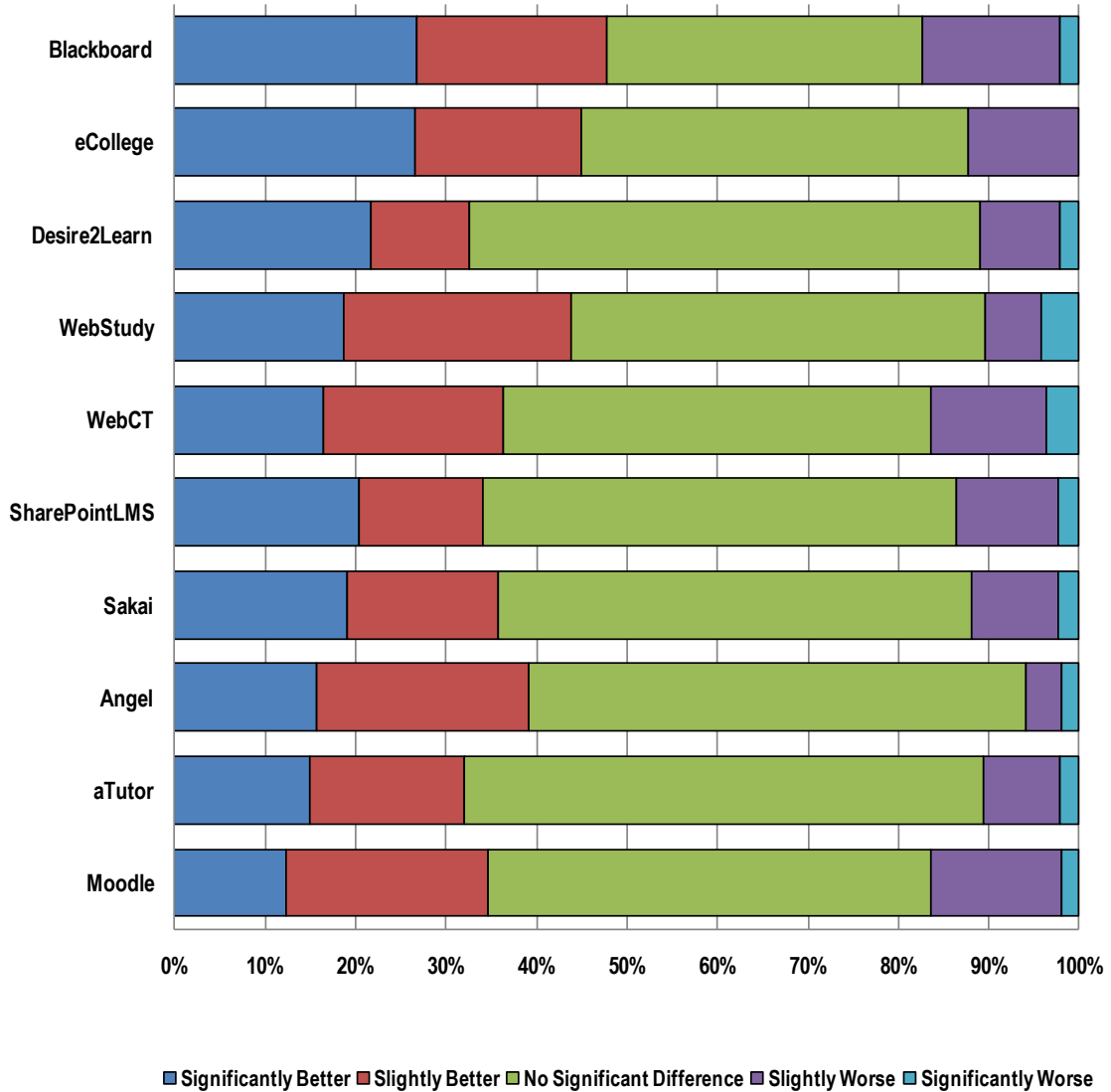
QUESTIONS 13a14b

Do you use Seaport for classroom and/or online instruction?

Answer Options	Yes	No	Response Count
Classroom	268	227	495
Online instruction	436	59	495
		answered question	586
		skipped question	40

Do you use Seaport for classroom and/or online instruction?
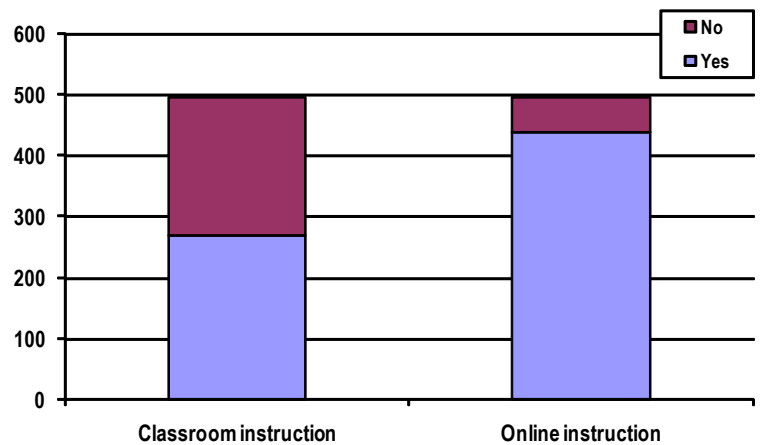
QUESTION 13b

What computers do you use for the following activities?

Answer Options	Personal computer at home	Personal computer in a Coastline classroom	Personal computer in Coastline's computer commons	Coastline Computer in a classroom	Coastline Computer in Coastline's computer commons	Response Count
Blogging	126	3	3	1	2	185
Personal website	142	4	3	3	4	181
Data or statistical analysis	145	6	3	1	7	198
Presentation development	145	8	4	4	5	190
Video or audio chat (e.g. Skype)	149	4	4	3	3	128
Accessing library databases,	172	13	7	11	16	151
Watching course videos	173	14	7	10	7	179
Journals, books, etc.	175	8	6	4	6	145
IM, chat, blog, social networking (Facebook, Twitter, etc.)	177	7	5	3	2	149
Accessing Seaport Coursework/online courses	186	12	6	9	8	192
Searching the Internet (e.g. Google)	189	17	7	9	8	151
Word processing (e.g., writing paper, reports, etc.)	189	18	7	10	8	178
Accessing MyCCC	193	17	8	16	8	193
					answered question	201
					skipped question	15

What computers do you use for the following activities?
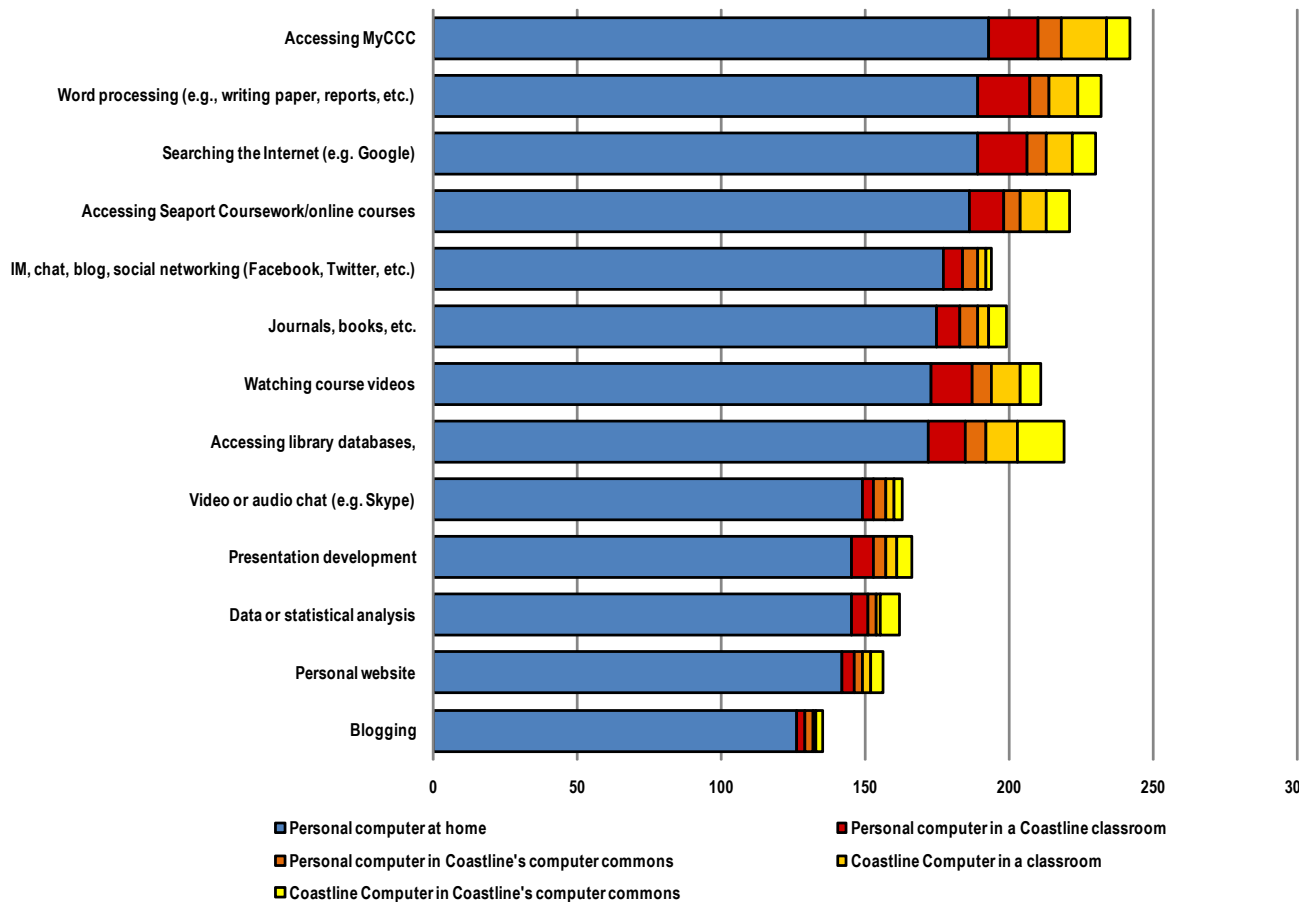
QUESTIONS 14a15b

Which of the following course components and/or activities do your instructors use in their Seaport classes? How would you rate the quality and effectiveness of this material?

Course Compontents Used

Answer Options	Yes, used in course/s	No, did not use	What is it?				Response Count
Audio resources	213	216	25				454
Discussion forums	408	57	6				471
Instructor introduction	431	31	7				469
Interactive applets	143	205	106				454
Online grading metric	408	43	18				469
Online syllabus	441	26	6				473
Presentations/lectures	345	115	4				464
Simulations	106	288	56				450
Video lectures/demonstrations	248	203	8				459
Web-conferencing (CCC Confer)	70	346	34				450

Quality of Components

Answer Options	Poor Quality	Average	Above Average	Outstanding	Did Not Use	No Opinion	Response Count
Audio resources	88	74	75	47	82	57	423
Discussion forums	38	102	142	106	53	22	463
Instructor introduction	18	123	145	94	59	24	463
Interactive applets	85	49	54	28	87	111	414
Online grading metric	22	109	131	107	59	29	457
Online syllabus	22	119	137	110	62	16	466
Presentations/lectures	53	100	118	81	58	31	441
Simulations	106	31	36	31	91	111	406
Video lectures/demonstrations	80	66	76	70	79	54	425
Web-conferencing (CCC Confer)	115	23	25	18	108	113	402

Effectiveness for Your Learning

Answer Options	Poor	Average	Above Average	Outstanding	No Opinion		Response Count
Audio resources	8	97	75	43	192		415
Discussion forums	34	160	130	75	61		460
Instructor introduction	9	194	107	75	73		458
Interactive applets	7	70	47	32	247		403
Online grading metric	8	147	131	91	77		454
Online syllabus	8	165	127	121	40		461
Presentations/lectures	22	126	118	81	90		437
Simulations	6	45	45	33	269		398
Video lectures/demonstrations	14	87	83	67	168		419
Web-conferencing (CCC Confer)	6	41	25	15	306		393
					answered question		476
					skipped question		53

Which course components and activities do your instructors use in their Seaport classes?

Legend: Yes, used in course/s — No, did not use
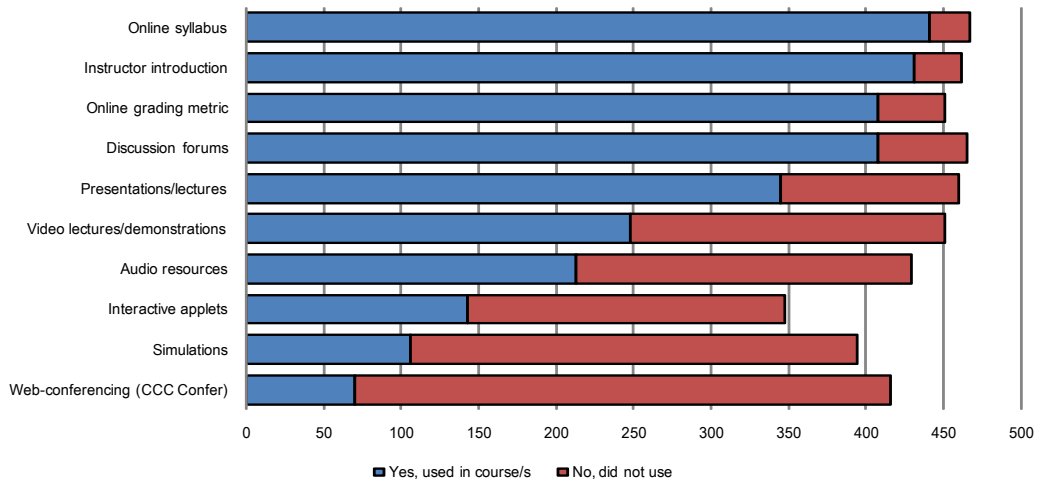
How would you rate the quality of course components and activities your instructors use in their Seaport classes?

Legend: Poor Quality — Average — Above Average — Outstanding
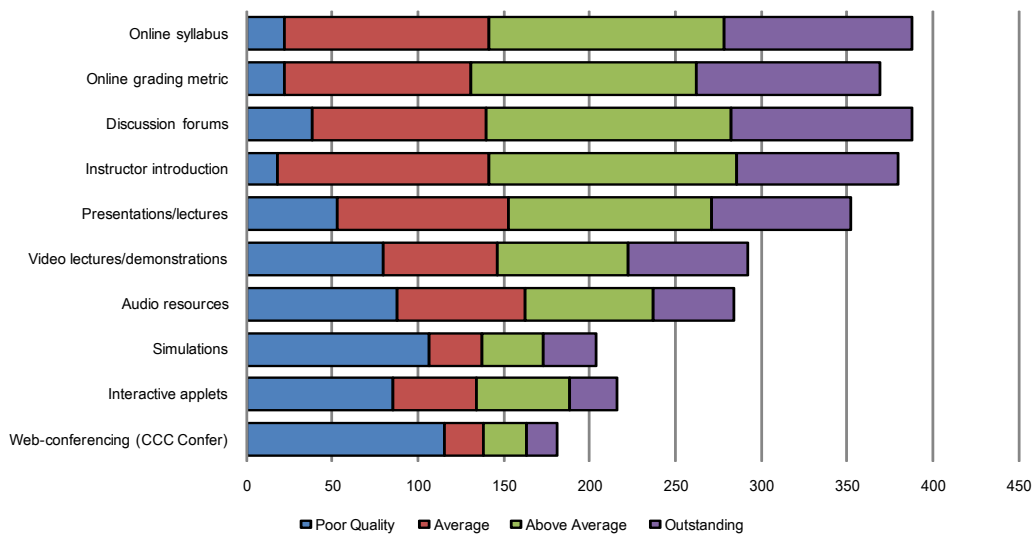
How would you rate the effectiveness of course components and activities your instructors use in their Seaport classes?

Legend: Poor — Average — Above Average — Outstanding
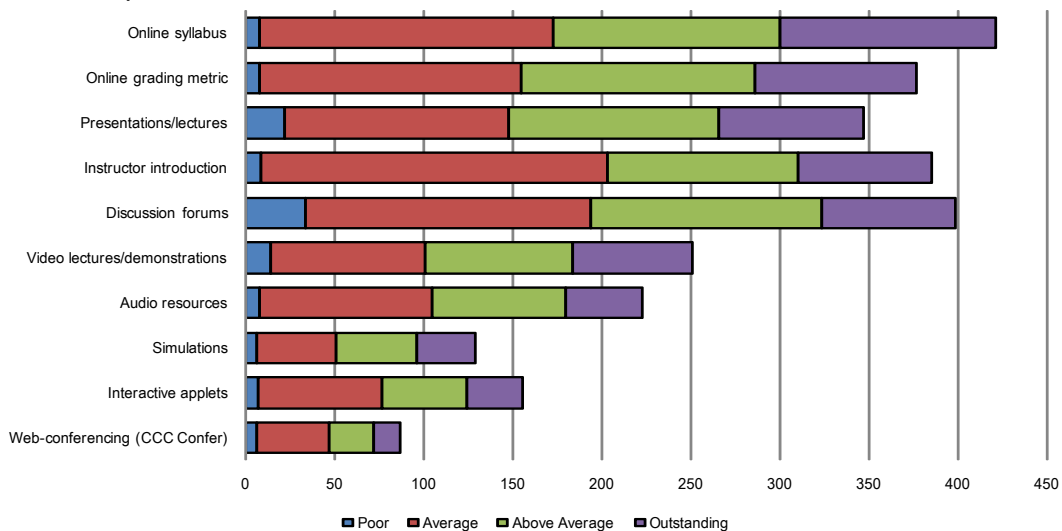
What course structure do you prefer?

Answer Options	Response Percent	Response Count
I prefer taking courses that are about 25% face-to-face and 75% online.	6.5%	28
I prefer taking courses that are about 100% face-to-face and do not use an online delivery method.	7.2%	31
I prefer taking courses that are about 50% face-to-face and 50% online.	17.5%	75
I prefer a flexible mix, based on my learning needs	26.6%	114
I prefer taking courses that are about 100% online.	42.1%	180
answered question		428
skipped question		49

What course structure do you prefer?
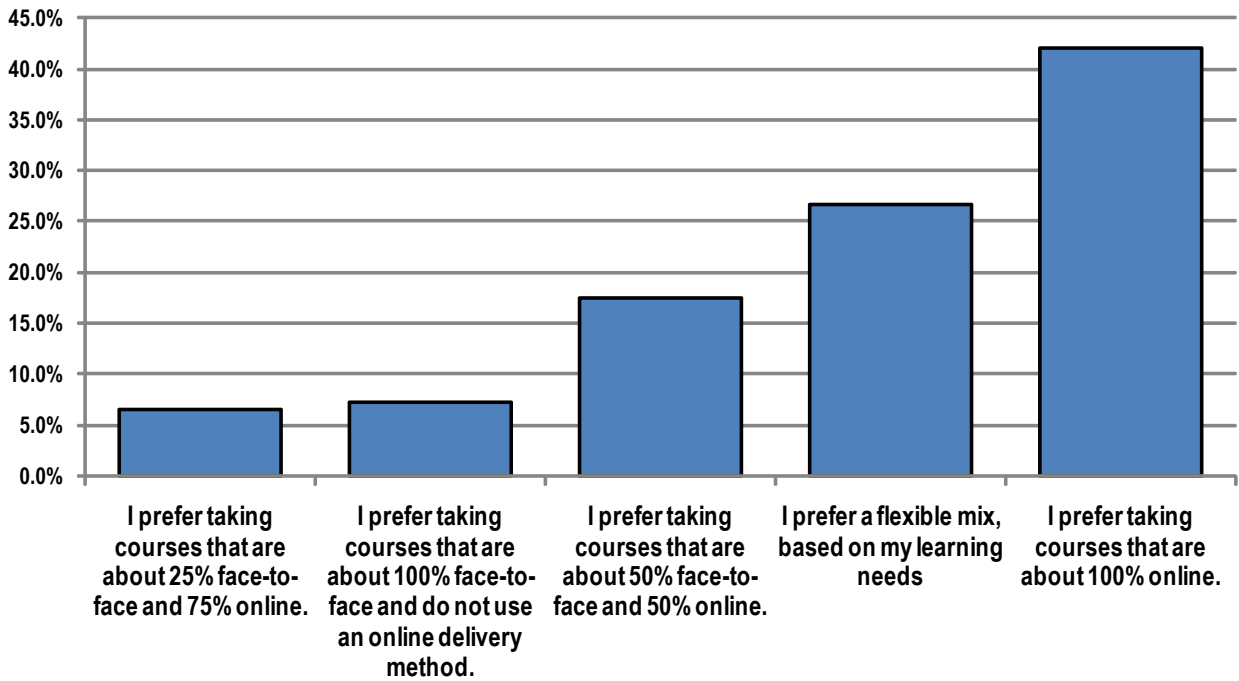
QUESTIONS 15a13c

Which of the following components and/or activities would you like to see used by instructors in Seaport (Coastline's Learning Management System)? Rank the importance of using each item from your perspective whether you have used them or not?

Recommended Use

Answer Options	Yes	No	No Opinion	What is it?			Response Count
ePortfolio	184	88	184	130			586
Blog	196	190	200	0			586
Social media interface	208	176	156	46			586
Wiki	242	128	162	54			586
Video bookmarking	266	100	150	70			586
Interactive simulations	326	68	148	44			586
Plagiarism review	346	62	144	34			586
Media/assets sharing	348	64	130	44			586
Chat or instant messaging	350	136	100	0			586
Student resource sharing	422	56	96	12			586
Discussion groups or forums	482	44	52	8			586
Announcements and calendars	530	16	40	0			586

Importance of Use

Answer Options	Highly Valuable	Above Average	Average	Below Average	Low or No Value	No Opinion	Response Count
ePortfolio	58	52	92	16	26	342	586
Social media interface	64	60	102	26	118	216	586
Blog	66	54	112	54	102	198	586
Wiki	74	64	114	30	72	232	586
Video bookmarking	78	72	140	18	44	234	586
Chat or instant messaging	104	120	152	38	58	114	586
Media/assets sharing	108	110	130	10	30	198	586
Interactive simulations	114	110	124	10	22	206	586
Plagiarism review	124	90	146	26	36	164	586
Student resource sharing	168	124	132	8	24	130	586
Discussion groups or forums	206	154	132	14	18	62	586
Announcements and calendars	366	114	52	12	0	42	586

	answered question	**586**
	skipped question	**40**

Which of the following components and/or activities would you like to see used by instructors in Seaport?
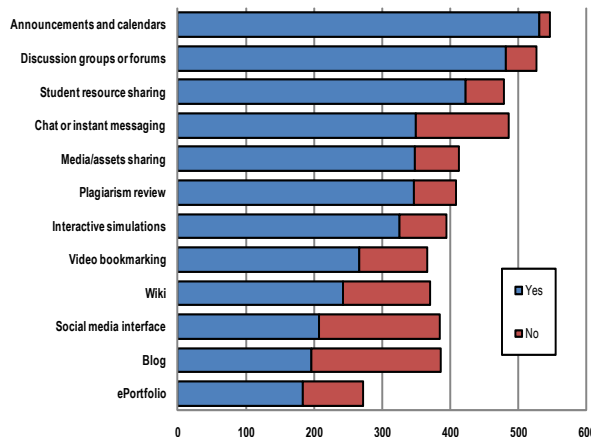
How would you rank the importance of the following components or activities for use by instructors in Seaport?
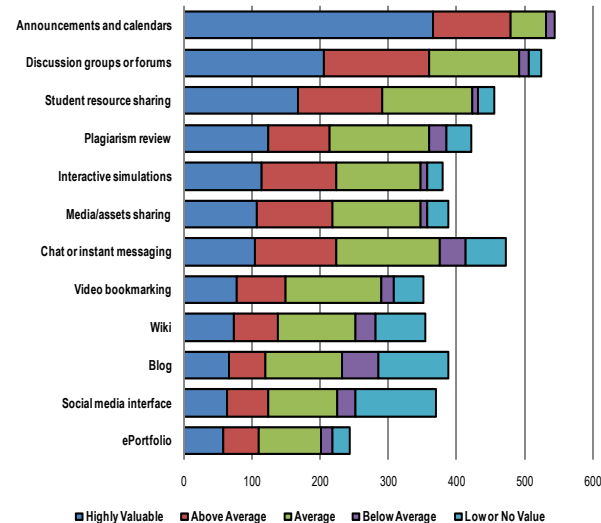
QUESTION 15c

Which of the following best describes your preference with regard to the use of educational technology in your courses?

Answer Options	Response Percent	Response Count
No preference	4.4%	10
no educational technology.	2.2%	5
use a small amount of technology	13.3%	30
use technology exclusively	17.3%	39
use a moderate amount of technology	28.8%	65
use a large amount of technology	34.1%	77
	answered question	**226**
	skipped question	**35**

Which of the following best describes your preference with regard to the use of educational technology in your courses?
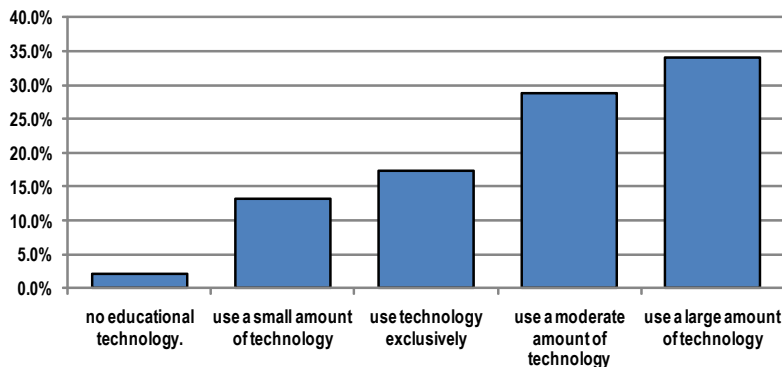
QUESTION 16a16b

In general, how would you rate the use of technology in the classroom and online at Coastline?

Answer Options	Superior	Adequate	Inadequate	No Opinion	Response Count
Classroom	54	192	32	202	480
Online	155	271	31	23	480
				answered question	**480**
				skipped question	**49**

Answer Options	Superior or Adequate	Inadequate	No Opinion	Response Count
Classroom	246	32	278	202
Online	426	31	457	23
Classroom	51.3%	6.7%	57.9%	42.1%
Online	88.8%	6.5%	95.2%	4.8%

In general, how would you rate the use of technology in the classroom and online at Coastline?
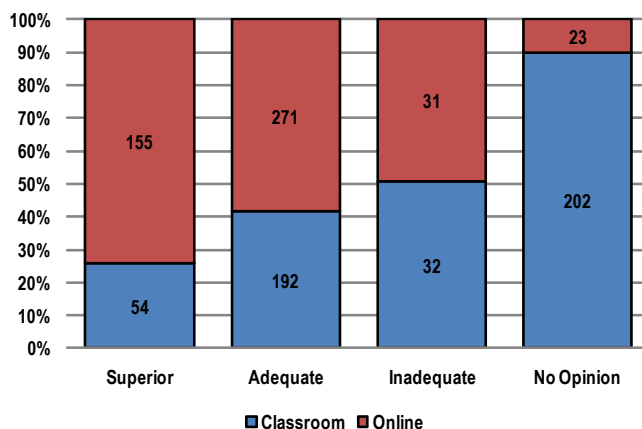
QUESTION 16c

How are you currently using technology in your learning as a student?

Frequency of Use

Answer Options	Frequently	Occasionally	Seldom	Never		Response Count
webcams for virtual contact with my instructor	5	17	10	193		225
creating a website for an assignment	7	16	25	175		223
videoconferencing to participate with my classmates	8	29	25	161		223
using simulations and games	9	14	25	177		225
creating a digital video for assignments	12	14	29	168		223
videoconferencing to participate with my instructors	12	43	45	124		224
accessing Podcasts or Vodcasts	35	30	38	121		224
watching movies/television for assignments	37	70	43	75		225
using programs or equipment specific to my discipline	45	52	39	87		223
visiting discipline-specific web sites	49	68	44	64		225
chat rooms or discussion lists in my classes	57	47	47	75		226
presentations in class using a computer, projector, and presentation software	83	56	41	44		224
searching the web for research information for my classes	133	70	20	3		226
downloading and/or uploading class materials, readings, or assignments	151	49	17	9		226
email to communicate with my instructor(s)	154	49	10	12		225

Satisfaction at CCC

Answer Options	High	Above Average	Average	Below Average	Low	Response Count
webcams for virtual contact with my instructor	15	15	67	14	54	165
creating a website for an assignment	21	17	76	6	43	163
videoconferencing to participate with my classmates	21	7	74	19	46	167
using simulations and games	22	17	80	11	50	180
creating a digital video for assignments	23	14	67	15	44	163
videoconferencing to participate with my instructors	24	11	69	17	47	168
accessing Podcasts or Vodcasts	27	29	69	12	36	173
watching movies/television for assignments	34	33	81	24	24	196
using programs or equipment specific to my discipline	35	29	87	12	21	184
visiting discipline-specific web sites	36	38	84	17	16	191
chat rooms or discussion lists in my classes	38	43	94	18	17	210
presentations in class using a computer, projector, and presentation software	49	28	79	13	20	189
searching the web for research information for my classes	72	48	82	7	6	215
downloading and/or uploading class materials, readings, or assignments	81	60	61	8	4	214
email to communicate with my instructor(s)	87	57	64	9	4	221
				answered question		**226**
				skipped question		**35**

How frequently are you using the following technologies in your learning?

Categories (top to bottom):
- email to communicate with my instructor(s)
- downloading and/or uploading class materials, readings, or assignments
- searching the web for research information for my classes
- presentations in class using a computer, projector, and presentation software
- chat rooms or discussion lists in my classes
- visiting discipline-specific web sites
- using programs or equipment specific to my discipline
- watching movies/television for assignments
- accessing Podcasts or Vodcasts
- videoconferencing to participate with my instructors
- creating a digital video for assignments
- using simulations and games
- videoconferencing to participate with my classmates
- creating a website for an assignment
- webcams for virtual contact with my instructor

Legend: ■ Frequently ■ Occasionally ■ Seldom ■ Never

How satisfied are you with the following technologies in your courses at Coastline?

Categories (top to bottom):
- email to communicate with my instructor(s)
- downloading and/or uploading class materials, readings, or assignments
- searching the web for research information for my classes
- presentations in class using a computer, projector, and presentation software
- chat rooms or discussion lists in my classes
- visiting discipline-specific web sites
- using programs or equipment specific to my discipline
- watching movies/television for assignments
- accessing Podcasts or Vodcasts
- videoconferencing to participate with my instructors
- creating a digital video for assignments
- using simulations and games
- videoconferencing to participate with my classmates
- creating a website for an assignment
- webcams for virtual contact with my instructor

Legend: ■ High ■ Above Average ■ Average ■ Below Average ■ Low

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QUESTION 17a

How often do you use the following technologies and how important do you believe they are to your learning?

Useage

Answer Options	Daily	Weekly	Monthly	Once per Semester	Never Use	What is it?	Response Count
Post a video or audio podcast	10	22	37	29	163	1	262
Page layout software (Quark, Pagemaker, InDesign)	11	21	21	18	176	17	264
Audio editing software (Garageband, Audacity)	12	18	20	23	180	16	269
Web page creation software (Dreamweaver)	13	20	11	22	187	9	262
Blog	19	42	24	17	164	1	267
Photo sharing (posts to Flickr, Picasaweb, Photobucket)	21	38	62	29	113	1	264
Video or audio chat (Skype)	22	55	43	27	116	0	263
Presentation software (PowerPoint)	24	72	73	59	35	1	264
Database program (Access, Filemaker)	27	41	27	25	138	9	267
RSS aggregator/readers	29	23	11	18	125	57	263
Digital video (iMovie, iDVD, Adobe AfterEffects	30	36	45	22	134	0	267
Image editing software (Photoshop, Elements, iPhoto)	30	57	51	24	101	3	266
Microblogging (Twitter, Tumblr)	31	25	21	10	176	1	264
Literature search tools	53	90	44	17	54	8	266
Spreadsheet program (MS Excel)	66	68	56	29	44	1	264
Voice or video mail	68	41	22	15	116	2	264
e-Textbooks	71	61	19	27	86	2	266
Videos streaming/sharing (YouTube, Viddler)	78	82	42	19	42	1	264
Instant messenger/text chat (AIM, Yahoo, Google, iChat)	105	41	24	15	81	0	266
Online calendar (Yahoo, Google, other)	105	44	17	4	97	1	268
Adobe Acrobat	108	91	31	10	27	4	271
Music streaming (iTunes)	110	55	34	14	53	0	266
Social network (Facebook, MySpace)	117	57	23	8	60	2	267
My Yahoo, iGoogle (or other customized homepage)	147	31	10	4	73	0	265
Word processing program (Word, OpenOffice)	168	74	13	6	5	0	266
Email	234	29	6	1	3	0	273

Importance

Answer Options	Critical	Above Average	Average	Below Average	No Value	No Opinion	Response Count
Audio editing software (Garageband, Audacity)	5	16	36	20	43	127	247
Blog	6	23	53	24	55	85	246
Post a video or audio podcast	6	22	58	26	44	87	243
Microblogging (Twitter, Tumblr)	8	16	44	15	86	77	246
Page layout software (Quark, Pagemaker, InDesign)	10	13	44	11	45	119	242
Photo sharing (posts to Flickr, Picasaweb, Photobucket)	10	20	73	30	46	65	244
RSS aggregator/readers	12	25	41	12	25	128	243
Video or audio chat (Skype)	15	42	67	26	41	58	249
Web page creation software (Dreamweaver)	16	23	39	13	33	122	246
Database program (Access, Filemaker)	17	29	51	18	25	105	245
Image editing software (Photoshop, Elements, iPhoto)	23	42	75	21	20	68	249
Digital video (iMovie, iDVD, Adobe AfterEffects	24	25	64	20	29	86	248
Music streaming (iTunes)	30	42	76	19	47	34	248
Social network (Facebook, MySpace)	30	43	56	37	57	28	251
Videos streaming/sharing (YouTube, Viddler)	31	55	94	23	19	26	248
Voice or video mail	34	33	63	21	32	64	247
Instant messenger/text chat (AIM, Yahoo, Google, iChat)	46	53	64	19	38	28	248
Presentation software (PowerPoint)	55	70	80	12	9	21	247
My Yahoo, iGoogle (or other customized homepage)	58	44	59	13	35	40	249
Literature search tools	63	73	53	6	15	39	249
Online calendar (Yahoo, Google, other)	64	45	48	10	30	54	251
e-Textbooks	71	65	54	8	14	38	250
Spreadsheet program (MS Excel)	72	61	69	6	11	30	249
Adobe Acrobat	93	67	65	12	7	16	260
Word processing program (Word, OpenOffice)	173	46	22	4	0	5	250
Email	184	35	29	3	1	5	257

answered question	276
skipped question	37

How often do you use the following technologies?

Email
Word processing program (Word, OpenOffice)
My Yahoo, iGoogle (or other customized homepage)
Social network (Facebook, MySpace)
Music streaming (iTunes)
Adobe Acrobat
Online calendar (Yahoo, Google, other)
Instant messenger/text chat (AIM, Yahoo, Google,..
Videos streaming/sharing (YouTube, Viddler)
e-Textbooks
Voice or video mail
Spreadsheet program (MS Excel)
Literature search tools
Microblogging (Twitter, Tumblr)
Image editing software (Photoshop, Elements, iPhoto)
Digital video (iMovie, iDVD, Adobe AfterEffects
RSS aggregator/readers
Database program (Access, Filemaker)
Presentation software (PowerPoint)
Video or audio chat (Skype)
Photo sharing (posts to Flickr, Picasaweb, ..
Blog
Web page creation software (Dreamweaver)
Audio editing software (Garageband, Audacity)
Page layout software (Quark, Pagemaker, InDesign)
Post a video or audio podcast

0% 10% 20% 30% 40% 50% 60% 70% 80% 90% 100%

■ Daily ■ Weekly ■ Monthly ■ Once per Semester ■ Never Use

How important are the following technologies to your learning?

Email
Word processing program (Word, OpenOffice)
Adobe Acrobat
Spreadsheet program (MS Excel)
e-Textbooks
Online calendar (Yahoo, Google, other)
Literature search tools
My Yahoo, iGoogle (or other customized homepage)
Presentation software (PowerPoint)
Instant messenger/text chat (AIM, Yahoo, Google, iChat)
Voice or video mail
Videos streaming/sharing (YouTube, Viddler)
Social network (Facebook, MySpace)
Music streaming (iTunes)
Digital video (iMovie, iDVD, Adobe AfterEffects
Image editing software (Photoshop, Elements, iPhoto)
Database program (Access, Filemaker)
Web page creation software (Dreamweaver)
Video or audio chat (Skype)
RSS aggregator/readers
Photo sharing (posts to Flickr, Picasaweb, Photobucket)
Page layout software (Quark, Pagemaker, InDesign)
Microblogging (Twitter, Tumblr)
Post a video or audio podcast
Blog
Audio editing software (Garageband, Audacity)

0% 10% 20% 30% 40% 50% 60% 70% 80% 90% 100%

■ Critical ■ Above Average ■ Average ■ Below Average ■ No Value ■ No Opinion

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QUESTION 18a

How important do you feel the following technologies are for teaching and learning in classrooms at Coastline?

Answer Options	Not Important	Useful	Critically Important	No Opinion	Rating Average	Response Count
Document cameras (Elmos &	30	109	41	98	1.33	278
Mobile wireless laptop carts	45	110	79	44	1.81	278
Ceiling mounted projection units	21	132	90	35	2.00	278
Additional classroom access to	18	128	101	31	2.08	278
Student laptops	24	116	108	30	2.09	278
Network printing	12	118	114	34	2.12	278
Whiteboards (SmartBoards)	13	113	114	38	2.09	278
Teacher laptops	17	112	116	33	2.12	278
Faster internet speeds/access	8	82	173	15	2.49	278
Seaport resources/courses	8	79	175	16	2.49	278
Campus-wide wireless access	6	64	192	16	2.55	278
					answered question	278
					skipped question	35

How important do you feel the following technologies are for teaching and learning in classrooms at Coastline?
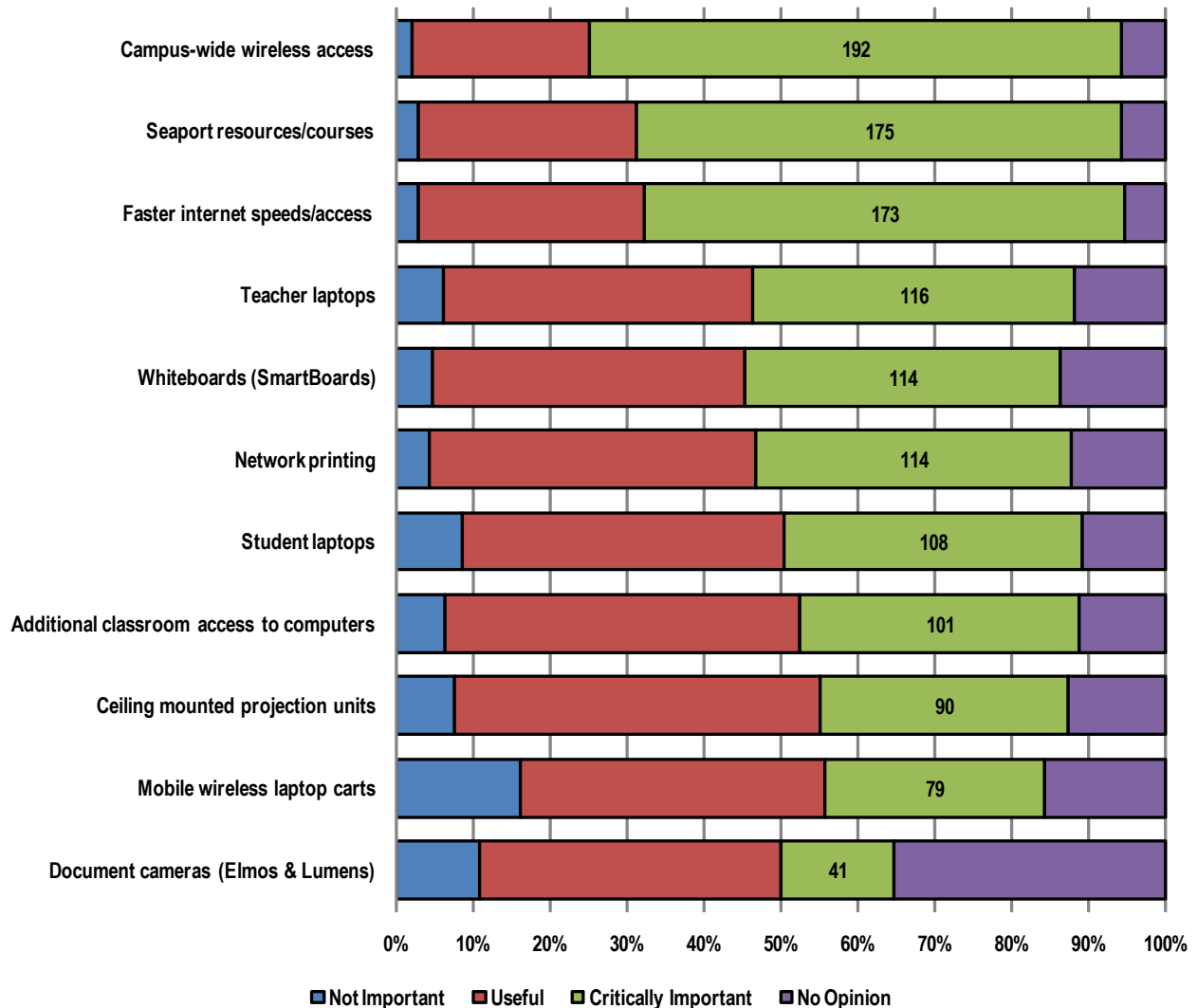
QUESTION 18b

Rate how educational technology has played a role in your learning at Coastline in regard to the following statements.

Answer Options	Strongly disagree	Disagree	Agree	Strongly agree	Rating Average	Response Count
Because of educational technology, my instructors demanded higher quality work	8	54	91	40	2.84	193
Because of educational technology, my instructors expect more work	7	69	73	44	2.80	193
Online library resources and services help me succeed in my coursework	5	26	109	53	3.09	193
Using educational technologies result in a better portfolio to show future employers	7	35	97	54	3.03	193
Educational technology makes it easier to see how ideas learned in class apply to real life	5	27	107	54	3.09	193
Educational technologies make it easier to work with other students	5	37	95	56	3.05	193
Educational technology facilitates prompt feedback from my instructors	3	23	109	58	3.15	193
Because of educational technology, my classes are more student centered	6	34	93	60	3.07	193
Educational technologies help me obtain clarification when information does not make sense	5	17	109	62	3.18	193
Educational technologies help me produce one or more versions of an assignment before the	3	18	105	67	3.22	193
Educational technology used in classes will be useful in my future career	2	18	103	70	3.25	193
Educational technology helps me succeed in coursework	4	7	112	70	3.28	193
Educational technologies help me to interact with my instructors	5	10	103	75	3.28	193
I am more engaged in classes that use educational technology	7	22	88	76	3.21	193
Educational technology has helped me be more efficient with my study time	5	18	93	77	3.25	193
Most of the educational technologies available to me have been easy to learn	2	7	104	80	3.36	193
Educational technology has made me feel like I have control over my learning	5	15	91	82	3.30	193
Advantages gained by using educational technologies outweigh the disadvantages	3	9	97	84	3.36	193
Educational technologies help me complete assignments on time	4	6	98	85	3.37	193
					answered question	193
					skipped question	23

Rate how educational technology has played a role in your learning at Coastline in regard to the following statements.

Educational technologies help me complete assignments on time
Advantages gained by using educational technologies outweigh the disadvantages
Educational technology has made me feel like I have control over my learning
Most of the educational technologies available to me have been easy to learn
Educational technology has helped me be more efficient with my study time
I am more engaged in classes that use educational technology
Educational technologies help me to interact with my instructors
Educational technology helps me succeed in coursework
Educational technology used in classes will be useful in my future career
Educational technologies help me produce one or more versions of an assignment before the final product is due
Educational technologies help me obtain clarification when information does not make sense
Because of educational technology, my classes are more student centered
Educational technology facilitates prompt feedback from my instructors
Educational technologies make it easier to work with other students
Educational technology makes it easier to see how ideas learned in class apply to real life
Using educational technologies result in a better portfolio to show future employers
Online library resources and services help me succeed in my coursework
Because of educational technology, my instructors expect more work
Because of educational technology, my instructors demanded higher quality work

☐ Strongly disagree ☐ Disagree ☐ Agree ☐ Strongly agree

QUESTION 19a

Should Coastline develop an initiative that would require every student to have a laptop for checkout and/or purchase?

Answer Options	Response Percent	Response Count
Yes	43.5%	121
No	56.5%	157
answered question		278
skipped question		35

Should Coastline develop an initiative that would require every student to have a laptop for checkout and/or purchase?

☐ Yes
☐ No

43.5%
56.5%
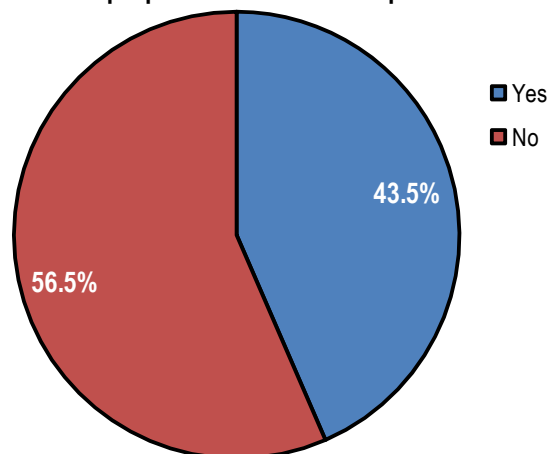
Rank the importance of the content format you prefer on Coastline's websites for the following:

Text

Answer Options	Best	Worst	No Opinion	Response Count
Event or activity information?	103	23	66	192
Official business?	139	17	37	193
Course or instructional information?	147	17	29	193

Images

Answer Options	Best	Worst	No Opinion	Response Count
Event or activity information?	118	8	67	193
Official business?	105	18	69	192
Course or instructional information?	131	16	46	193

Video Streaming

Answer Options	Best	Worst	No Opinion	Response Count
Event or activity information?	82	26	84	192
Official business?	66	37	89	192
Course or instructional information?	106	20	67	193

Vodcasts (download video)

Answer Options	Best	Worst	No Opinion	Response Count
Event or activity information?	43	40	109	192
Official business?	36	41	115	192
Course or instructional information?	69	25	98	192

Podcasts (download audio)

Answer Options	Best	Worst	No Opinion	Response Count
Event or activity information?	43	43	106	192
Official business?	40	41	110	191
Course or instructional information?	73	23	96	192

Interactive Example

Answer Options	Best	Worst	No Opinion	Response Count
Event or activity information?	81	14	96	191
Official business?	77	16	98	191
Course or instructional information?	108	6	78	192
			answered question	**193**
			skipped question	**23**

Rank the importance of the format you prefer for: <u>Text</u>

Course or instructional information?

Official business?

Event or activity information?

■ Best ■ Worst   0%   20%   40%   60%   80%   100%
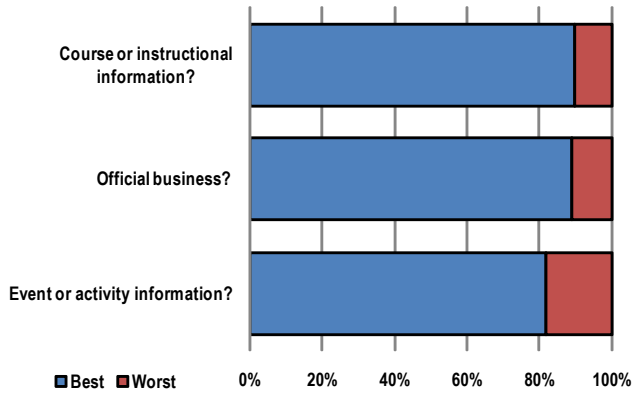
Rank the importance of the format you prefer for: <u>Vodcasts</u>
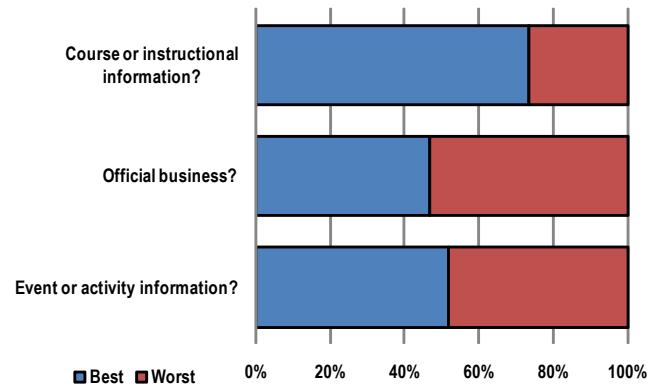
Course or instructional information?

Official business?

Event or activity information?

■ Best ■ Worst   0%   20%   40%   60%   80%   100%

Rank the importance of the format you prefer for: <u>Images</u>

Course or instructional information?

Official business?

Event or activity information?

■ Best ■ Worst   75%   80%   85%   90%   95%   100%
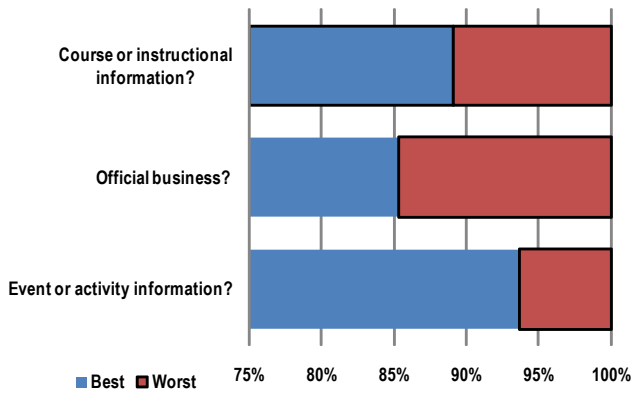
Rank the importance of the format you prefer for: <u>Podcasts</u>

Course or instructional information?

Official business?

Event or activity information?

■ Best ■ Worst   0%   20%   40%   60%   80%   100%
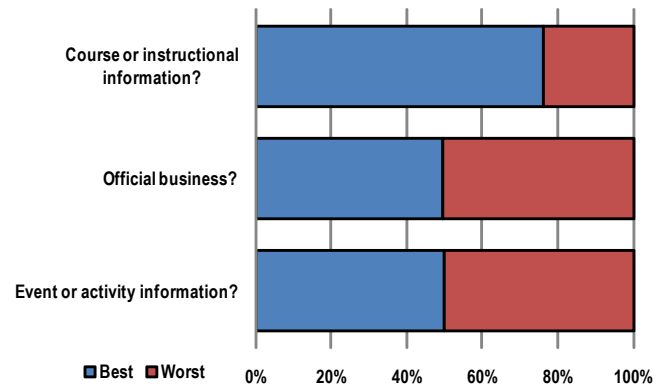
Rank the importance of the format you prefer for: <u>Video Streaming</u>

Course or instructional information?

Official business?

Event or activity information?

■ Best ■ Worst   0%   20%   40%   60%   80%   100%
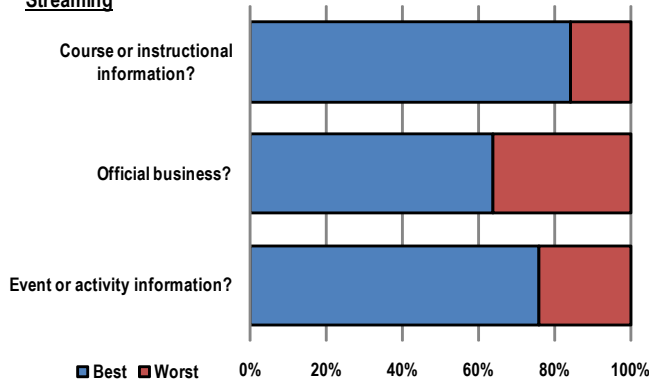
Rank the importance of the format you prefer for: <u>Interactive Example</u>

Course or instructional information?

Official business?

Event or activity information?

■ Best ■ Worst   0%   20%   40%   60%   80%   100%
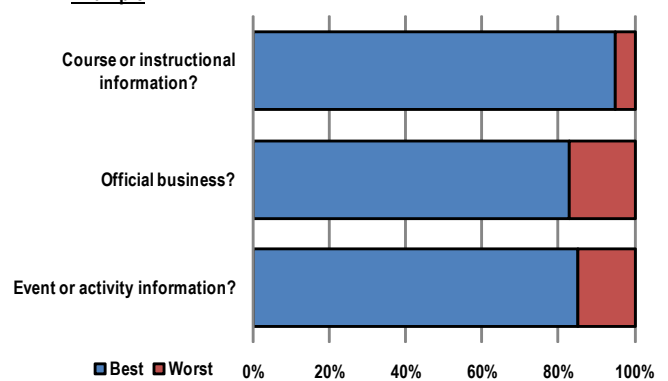
Please describe the BEST or most exciting use of educational technology that you have encountered – one that truly helped you to learn.

Answer Options	Response Count
	205
answered question	205
skipped question	108

1. Watching a YouTube video that was linked to an online lecture
2. I completed my BA online with CSU Chico, which has a stunning online education department. They are state of the art. The online coursework there was amazing, online students could watch and participate in live lectures while students were in class. I felt like I was actually part of the class.
3. iPad Blackboard App (similar to Seaport - but for other schools)
4. Instructor Moderated, Live Discussion Forums. (Instant Feedback).
5. PowerPoint presentations and video lectures and other links that instructors post.
6. Blogs
7. Having a writable tablet with internet access because I can do homework anywhere and as a single parent of 4 I'm always on the go.
8. Self-paced learning
9. Video lectures and online homework assignments. Also live feed from one classroom to another classroom at another campus.
10. Watching videos that related to the course material showing the situation in a real life scenario
11. Learn how to use a SmartBoard
12. Online courses. It really helps me learn much and save a lot of time
13. Video you tube & power point presentation
14. Sources from internet
15. The web class meeting with the teacher
16. How to use Excel.
17. Video Lectures helped me understand complex concepts when I have choice to replay the lecture over and over.
18. Apple tech
19. I like to use PowerPoint in order to make a presentation. It's completely helpful. Users are allowed to make their presentations lively, and the effects of Microsoft PowerPoint help the audience or viewers follow the presentation easily.
20. The use of electronic library media sites during classes where papers needed to be written on arguments.
21. This is the first online course I have ever taken. So I would say that the breadth and depth of the material presented was impressive. It was also too much....for an introductory course, the work load was considerable.
22. Online study guides
23. Recorded (audio and video) lectures available online for students. Either recordings from the POV of students or a page by page note jotting and audio recording of PowerPoint lecture presentations.
24. Interactive concept lessons--choose answers and manipulate objects to produce the correct results.
25. I had to take a Keyboarding Class. The teacher utilized the Video technique to show us how to access our class for keyboarding. this was very Helpful, rather than just reading the material & worked Best effective for this class.
26. Interactive how to videos.

27.   I loved the simulations used in my astronomy lab and astronomy class - VIREO.
28.   Lots of useful tools for online courses.
29.   I love the projector units that allow teachers to switch from broadcasting thier computer screen to broadcasting live video feed of a hard copy paper in front of them.
30.   e-books
31.   Interactive hands-on Flash application that acts similar to a game to help me learn terms, etc.
32.   The videos assist me in learning the material faster and easier
33.   CCC Conference study for a midterm. Really helped
34.   On-line courses / distance learning
35.   I thought that the overhead projector are useful for a large class size.
36.   My mathlab
37.   Video lectures, help when you're on a trip or busy away from home.
38.   Online courses are very helpful for students to study, to improve their skills.
39.   PowerPoint &video
40.   Just having everything online for you in one place is the most beneficial use of technology for my learning.
41.   This is my first on line course and is very stimulating.
42.   The boards used in the computer classes that are electronic whiteboards were a great addition!
43.   I use online video trainings weekly in my line of work. They are absolutely critical in making my job better and helping me learn more.
44.   Being able to view videos and demos on YouTube truly helped. also, being able to chat in real time with fellow students and point out problem and get help.
45.   Online classes that help me save my time
46.   PowerPoint Slides, Blackboard
47.   WebCT through sac state
48.   That I can do things at my own pace as long as I am motivate enough to keep up with the work
49.   The best was use of a PowerPoint that had audio and pictures and text. This was extremely helpful in my learning because it not only appealed to all my learning styles, but also gave me pictures, audio stimulation, and interactivity that kept me interested and helped my retention of the information.
50.   Blogs, Online grade access, online syllabus, Online Quizzes/Exams, Emailing instructor
51.   Online classes. Seaport is the best. I've had online classes at other schools in the district (OCC and GWC) Blackboard just isn't as effective as Seaport. Discussion boards however serve no educational purpose in my opinion.
52.   Being able to read from an online textbook is useful.
53.   The most exciting use of educational technology that I have encounter is everyone have one laptop in the class.
54.   Instructor interaction, sorry and the online sources
55.   PowerPoint
56.   Being able to view /work on a PowerPoint presentation and then create my own presentation!
57.   For my Cisco class, we were offered to use the schools online simulation of routers and switches for labs and practice. This is really helpful and made a big impact on my learning.
58.   Interactive software accessible remotely.
59.   I love the organization of Seaport, and the ability to follow through with my week to week work and where I stand. Online AND traditional classes. But my grades don't really reflect that love, ha-ha.
60.   Plain, black text, white background, and low- graphic Powerpoint lectures that are accessible from classroom, internet-connected computers have been incredibly useful to my education. Simple and sweet helps one to learn.
61.   One time I don't know how to log in to a computer at school, a student helper helped me with it. Because of it, I can do my home works and save my essay as well as follow my instructor's lecture online.
62.   Google search engine. Google makes it easier to research papers and find content related to the subject matter that I'm researching.
63.   Interactive sample tests

64. Virtual Labs for hands on learning.
65. When it was tough to as the use of Macs and its programs.
66. I've done a lot of online classes at CCC and some have been VERY rewarding and others have been very forgettable. The truly great classes are ones where teacher really take an interest in the students and come up with ways to communicate and really teach what needs to be known. Ways they have done this are with programs like "Course Compass" "Smarthinking" ect. There are also teachers who it seems like they just make sure you turned in assignments and give you a grade and don't spend any real time on the class. I think there needs to be more regulations and supervision on teachers who are teaching online classes.
67. One line textbook with homework and quizzes and grades online.
68. Seaport
69. Can take a class at any time.
70. Being able to download files required for the classroom.
71. Whiteboards are the best.
72. Video lectures helped me a lot. It teaches me more about how the process works and gives me a better visual.
73. To be able to review answers to homework and assignment questions immediately at home.
74. CCC confer, and Aplia
75. When instructors use video for lectures. When an instructor teaches an online course with no interaction except discussion and email, and the students use the textbook to learn, it is not as effective.
76. E-BOOKS.
77. Seaport quizzes
78. My Microsoft office classes had online videos showing how to use different tools.
79. I really line in etstudy for assignments and following progress through the course.
80. Seaport - I can take classes at home.
81. The best educational technology I have encountered is gmail (communication with my professors) and seaport. I love how Seaport is very simple and easy to use. I find it a lot better than MyOCC or MyGWC (I have used both). Seaport is a lot faster than both of the other engines and I think it is easier to use, too.
82. Use smartboards to do the exercise in front of class. so exciting
83. When I took the course Intermediate Algebra, the format of that class was very easy to learn and follow. There was examples on how to solve the problem, videos of someone actually working out the math problem for you, and if you missed an answer in the homework, there was options on how to help you solve the problem and solving a similar problem again. I also liked how you can click on the audio source for the ebooks and read along with the person. It was a great learning option!
84. Video recorded lecture
85. The best use of educational technology that i have encountered is the use of online resources. Extra resources help improve a student's ability to research and discover more information on the topic of research. Also, these resources provide a different base of knowledge besides the lecture or topic in-class. Finally, online resources can facilitate a student's learning experiences. For example, in calculus, many students struggle. But with extra online resources like math tutor sites or even Youtube can help a student learn and understand more.
86. Free computer lab for all students
87. The videos and quizzes provided by the professors online.
88. On-line courses: because they make taking classes possible, especially for working people
89. Seaport was a great introduction into online education.
90. At Goldenwest College my Pathophys teacher posted podcasts of her lectures and additional lectures for deeper learning that were available for download. These lectures are the only reason I received an A in this class because I was able to download the lectures and listen to them on my iPod while I exercised, ran errands, made meals, etc. It was without a doubt the most valuable use of technology I have encountered in education and I already have a B.A., M.A., and 3 Teaching Credentials and in all my studies this is the best use of technology I've encountered.

91. I took a history class in which the teacher used a variety of photo & video sharing from his own travels that really helped bring the class to life and provide real life experiences.

92. The math course I'm taking has online homework and assignments made by the publisher company. There's procedures on there that explains it better than the teacher sometimes.

93. online classes that allow me to fit school into a full schedule

94. PowerPoint presentations, if done correctly, are very helpful, and informative.

95. e-textbooks

96. I believe it is my first experience with online homework program that gives me tests and quizzes at the same time

97. White board instruction, videos on line

98. I am enrolled in another school's online classes as well as at Coastline and one of my instructors uses Elluminate Live to host web conferences that are completely interactive. All of the students can chat or use a webcam/microphone to speak or ask questions, and the instructor has a virtual whiteboard to show slides, write math equations etc... I have learned a lot from being a part of these online classes.

99. Audio and video lessons in my subjects that were available to me on my lap top! I preferred the video over the audio. I learn better by seeing and hearing!

100. Educational technology is exciting in it's self! The online discussions and quizzes have helped me research further that in turn has truly helped me learn.

101. More video

102. The Instructor-created video lessons/experiments for my Marine Science 100 Lab course. I liked seeing my instructor performing the experiments and explaining what was happening, rather than seeing some stranger from somewhere else in the world demonstrating.

103. Professor Richard Boddie (Political Science courses), prepared an exceptional video lecture which was a great teaching tool.

104. Using an interactive response system; similar to SmartResponse

105. Wireless technology - the ability to not have to be tied down to one location.

106. A majority of my coastline classes that I have taken have been online and I have to say compared to the other coast colleges, Coastline is the best. The teachers always make the class easy to understand and the objective of the class is clearly stated. This being said I would have to say the teachers are the best educational technology in my opinion. Somebody can create the best functional educational system but without a person that is competent enough to understand how to use it in a classroom or online environment it's really useless. The teachers that I have encountered online at coastline are helpful and most of all clearly states what they want. In an online setting that is what i believe is most important, since there is little to no face to face time with student and teacher.

107. The best is online Seaport courses

108. Being able to research on search engines like Google that helped me look up many things.

109. Seaport online courses offer numerous discussion interaction among students.

110. Audio has helped a lot in my Italian course, and a discussion board in my math class helped very much.

111. Online classes

112. The textbooks associated with the classes.

113. Interactive, live on-line instruction.

114. Any online aspect to the courses! The more the better.

115. Ebooks are a new technology, but I don't think it has an effect on whether you learn more or less compared to a standard ebook. I guess it would be more "green" for the planet mostly to eliminate printed material.

116. The on-line classes have been the greatest thing for me. Having little ones and being able to access my class whenever I want helps me to achieve my high standards and in return, teaches my kids the reach for the same. On another note, I love having knowledge at my fingertips and being able to get answers ASAP, whether that's you tube, dictionary, etc. Knowledge is everywhere, it's only getting easier to tap into and aids in helping people reach their full potential.

117. The best is that I do not have to be taught in the classroom, perhaps once in awhile. Online classes are the best to learn at your own time,
118. Easy navigation when accessing Seaport.
119. The use of Dreamweaver in my HTML class in high school helped me later on when I took another HTML class in college.
120. I like the Pearson Education system I use for my Math 100 class. It is highly interactive, yet easy-to-use.
121. The best educational technology that I have come across is e-books. They are affordable and convenient. I can read them on my phone, tablet, kindle etc.
122. Taught me time management, dedication, perseverance, and independence.
123. At this time, I would say CCC (seaport, student information, email), has been very helpful.
124. Online classes are great. I can, in most cases, work at my own speed and at whatever time is convenient for me.
125. Laptop in classroom
126. PowerPoint lecture slides and links that aid in teaching important class concepts.
127. The best educational technology is a laptop
128. For an economics class, the professor used online chat sessions which helped me immensely! During these sessions the professor would ask questions and help us understand certain concepts using the attached white board for illustrations. Even after the professor would sign off, students would still continue to talk and help each other understand the material. Great use of technology! One can experience a classroom setting but conveniently in the quietness of one's home.
129. All of the technology that I have used is about the same.
130. Being able to watch video episodes for Spanish class. Hearing, seeing and interacting is critical to online course success.
131. Khanacademy.org has great video demonstrations on great academic topics. Also video broadcasting over internet is great.
132. Online calendar and syllabus - as working student, helps to keep everything organized
133. The application "Pages" is one of a few that help me out with my education. It allows me to use a ready outline for essays and to export them to a different format if needed.
134. Search able text books
135. Video streaming, interactive white board. Discussion boards.
136. Just being able to do all of my school work online is great since I am disabled, it works perfectly
137. Interactive diagrams were used to explain astronomy principles in an etext book. Made it much easier to understand to see it visually.
138. In high school my ROP video production class. That was interactive and interesting.
139. I, personally enjoy Apple. Its technology, is the best. Its useful, and less confusion. The first ones to come out, and I say, they will be the last ones to leave. They're easy to manage, at your own comfort zone. The technology is productive.
140. in my opinion, CCC should have more computer lab for students to go there to study and do homework. Especially, i highly recommend to have netwrok printing in computer lab because that help us to print out at that time. We students can pay for that.
141. Online video lectures. Reinforces subjects read and discussed. Good review material.
142. I would have to say my trigonometry class on coursecompass. It is the best. For homework if you can't work out the problem there is a help button that will show you an example. And if you still can't work it out there is a button that will you help you solve it. After the computer solves it you are given a whole new problem to solve that is similar to the previous problem. This has helped me tremendously. Because sometimes you click the help button to see a similar problem it is always the same problem even in the next question.
143. Discussion forums
144. The New Cisco Equipments
145. Technology is a great accessory for learning but doesn't replace the importance of teaching excellence and student motivation.

146. Being able to look at assignments in my email sent from my professor.
147. The hybrid and online combined classes are great for those people that either want to come in class or don't, but still have enough enrollment to keep the class.
148. Video Lessons
149. In Dan Johnson's Political Science discussion class, I had the opportunity to interact with students at the Garden Grove campus via video conferencing. This encouraged classroom participation, and added more discussion.
150. Smartboard
151. Online tests that review the results after.
152. Used BlackBoard at Irvine Valley College. Intelligently laid-out. Required to turn in our work through Blackboard. Students blogged and posted work. Very useful aid to classroom instruction. Opened the classroom up for discussion so that even the shy ones posted their opinions. This created a greater bond between students and provided a much richer educational experience.
153. The video projector
154. Online program blackboard
155. I have not encountered any technology that helped me learn.
156. Since I spend my time doing my homework via Distance Learning, I have found that the layout of the class is the most important part. If I have trouble finding what information I need to in order to proceed with my class, things can be very difficult. I am very fond of the discussion forums because they allow students and teachers to communicate about the subject of study throughout the course.
157. Inter active online classes
158. Discussion boards
159. In class labs for CST.
160. This semester has been my first semester using online education. The culmination of reading, listening, and viewing during Dan Johnson's video lectures truly helped me retain the information by delivering the information to different sensory receptors.
161. So far, Seaport and it's adaptability for the instructors to distribute needed information to the students.
162. I thought the Elmo device was very beneficial. Not only did it make note taking easier for the students, but also the teachers. The teachers would be then be able to post the notes they wrote in class online, allowing them to be more accessible for the students.
163. The most exciting use of technology I have encountered in learning at Coastline has been in my Astronomy course, the Moodle Website for courses. Although not perfect, it is nice to have a separate place for that class and lab.
164. Using and watching teachers use ELMO'S.
165. Lessons outlined in Digital Slide Shows
166. Seaport online classes and registering online and e-books is the sole reason I was able to continue my education. So it is all very exciting and useful for me.
167. Laptops
168. Online class exams and quizzes.
169. Flexibility
170. Distance learning help us very much because we can't come to scheduled traditional class
171. Smart Board
172. Simulations of the placements of anatomical structures has helped me a lot in anatomy class.
173. Videos
174. Would like to see more video tutorials
175. Online tutoring websites
176. Wiley+. It gives me immediate feedback and shows me the correct answer. Sometimes the professor cannot go over all our questions, so this is a good idea.
177. Smart Board
178. For the past 3 semesters, I have taken the Calculus 1-3 sequence at Coastline. Instead of using Seaport, all three of my teachers have only used My Pearson for the class hw/textbook access/ discussion

boards/etc and it's a much more user friendly format than any other online class I've taken. Though Seaport is okay, it seems like partnerships with other companies makes for a way better learning experience since these companies are investing a ton of money and support into their product vs. the slightly less modern programming that Seaport uses. (no offense)

179. I like how online courses through seaport allow you to preview the quiz questions before you take the quiz. This forces me to make sure I know every single answer or look it up if I don't know it. If it were a normal quiz with no preview, after I took the quiz and I got the questions wrong I probably wouldn't take the time to look them up since I already lost the points.

180. Email.

181. The cst lab for networking and CCSP

182. Video teaching, PowerPoint

183. Some of the video presentations have been exceptional

184. Access to Cisco routers, switches and firewalls

185. Apple Macbook Pro. Without the efficiency and reliability of this machine I don't think I can do as well in school. It is so reliable that I wouldn't have been able to "rush" things when I needed to, if I didn't have this machine.

186. Astronomy Lab CLEA - online observatories

187. MyCourseCompass because I do homework on there so I learn from there.

188. Text books online

189. Having an online class that the teacher taught by posting a video of the lecture was the best PowerPoint is limited

190. Hands on Cisco networking lab.

191. Online discussion forums.

192. A class I'm taking at Golden West has a "my virtual child" simulation to help students learn the growth and development of children.

193. It was on demand video learning where students still had to follow the course weekly but at their own time and leisure, this also included blocks of instant messaging with live instructors

194. Micro/macro-economic Pearson website with proper feedback.

195. I think one of the most useful tools I've used during my educational experience is having access to course material online. This contains a variety of things such as lecture notes from the class, e-text books, and etc. Having access to lecture notes allowed me to go back and look up information that I either missed or didn't fully grasp during class. You don't always have enough time to write down everything the instructor says. Having an online text book really helps out poor students that really can't afford to pay $100+ for a book for each class. I understand that publishers need to make money too but it's hard for some students that barely have enough money to eat. Some libraries also have text books that can be checked out but there are usually only several books available.

196. It was when we had this program called second life... and we interacted as a class but online

197. It keeps me in contact with classmates and the instructor.

198. When I took Math C115 I used an eBook and also on the course there was online tutors you could use 24/7/. I think as a college student the use of internet and being able to use in 24/7, whenever needed, is really important. Every student has different schedules and it is always good to know you could have a tutor there whenever you needed it, and it always helped and always helped me learn better what I was struggling with.

199. PowerPoint.

200. Interactive discussions that are required. As well as PowerPoint used in online classes just as a teacher would for a classroom class.

QUESTION 20b

When you experience technical problems where do you go for help?

Answer Options	Response Percent	Response Count
Computer Commons	11.4%	22
Distance Learning	33.7%	65
Instructor/s	40.9%	79
MyCCC Help Desk	49.2%	95
Friend	36.8%	71
Online resources outside the college	44.0%	85
Other		9
answered question		193
skipped question		23

When you experience technical problems where do you go for help?

- Computer Commons
- Distance Learning
- Instructor/s
- MyCCC Help Desk
- Friend
- Online resources outside the college
- Other
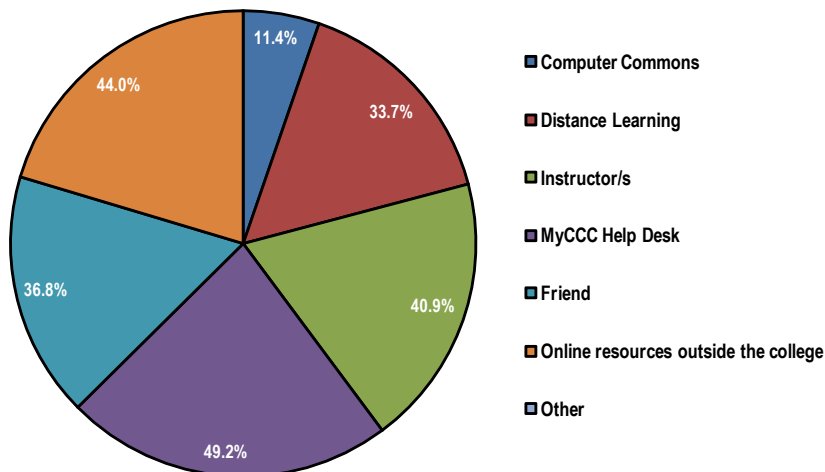
QUESTION S: 21a19c

What are the most interesting developments in educational technology that you are aware of (either available now or coming in the future) that Coastline Community College and its instructors should consider?

Answer Options	Response Count
	286
answered question	286
skipped question	288

1. working together in a class room without being face to face
2. Face to Face classroom discussion
3. I am aware of none.
4. Using computers in class
5. Keep doing what you are doing. Your system is far superior to OCC's.
6. If there are still telecourses, they should be shown online. Not all of them are.
7. windows 7
8. Transmitting lecture via webex or skype type resources
9. I'm not aware of any. I've always been happy with the delivery of my classes online at coastline
10. Online lectures
11. Instructors could set up a camera during on site classes and stream lectures to ustream.tv or something more private if needed. Lectures could be seen live or be viewed later on by students
12. The ability to video conference a class should be great if you have to be away from the class but you're able to log in and attend the class.
13. Windows 2008 Active Directory
14. Could use Skype or Ventrilo to talk.
15. iPad with learning apps designed for the individual courses.
16. etextbooks downloads: less expensive, does not kill trees, less weight and easy to find specific material. Etextbooks can also use video to enhance learning.
17. The use of the internet
18. Seaport.

19. Kino, iPad, or ebook for textbooks
20. IPads
21. I like to use computer, so I want to learn it.
22. eReaders, textbook support on eReaders or computers (so we don't have to purchase large textbooks or carry them around)
23. I would like Coastline to develop a mobile web site for students to access their mobile phone (not a smart phone), as well as, the seaport.
24. Uploading podcasts of lectures for absent students or for students that would like to go back for review.
25. Use of tablet computers and smartphones
26. Agenda/Calendars.
27. i do not know anything about technology, but i hope CCC have improve more network site in the future.
28. More class
29. Computer
30. Wiki
31. SMKS combined with web based application.
32. iPad-exploration of the possibilities. Also, social media. I'd like to learn the pros and cons and how to use them for personal and business applications as well as using them in some way educationally.
33. Streaming lectures
34. Video Conferencing
35. Google Apps > Education
36. I think they should consider having a webcam chat for online classes, that way there is still interactions between students and instructors
37. I am not very up to date on upcoming technologies, so I don't feel I can contribute a helpful answer to this question.
38. The virtual contacts with fellow peers or instructors. Along with that, each person's ability to view what's on the other person's screen; as to be in front of it w/o actually being in front of it. I don't recall the name for that. Won't say it's something that is an educational technology but should be as well.
39. Independent study and phone based apps that allow you to continue your studies
40. Video streaming, Skype conference/ class discussion meetings, social media.
41. Live interaction using the internet
42. I believe that Coastline should focus on utilizing Internet video to bring "rock star" educators to every student for background and inspiration, utilize free eTextbooks to allow frequent updating and reduce the cost of materials, and establish a corps of students and volunteers to assist in the one-on-one needs of students when and where needed.
43. Apps. if we did start with computers or tablets we could have so many viable apps.. For example a math apps. Imagine a student writes down a problem he/she is having trouble with, raises his/her hand and asks the teacher "how do you do this problem" and presses send. the teacher sees the problem on his tablet and responds. or better yet sees the problem and thinks its a decent problem and sends it to the projection screen and can work out the problem from his tablet from the back of the room without standing in the way, going through makers, or having to erase something he already spent time writing to make more room (because the program could just save as you go, and have a back button, maybe even give statistics on how your doing as well as the rest of the class(maybe students could have access to this too). and iv got a bunch of ideas on how you could do safer testing while using these tablets.
44. iPads
45. Well I have used my Adroid phone to log into Seaport and been able to submit discussion assignments by phone, which is fantastic!
46. I think, educational technology have to update day by day.
47. Touch screen
48. Podcasts
49. 50% face-to-face and 50% online

50. My philosophy instructor uses PowerPoint presentations to teach lessons in each unit. Along with the presentation we can view a recording the instructor made of lectures related to each lesson, and during the lecture he refers to, and pulls up slides from the relevant PowerPoint presentation. I watch the videos via Windows Media Center-the videos are not very clear. I am not sure what technology he used to prepare the lecture, but it could be better.
51. READING SOFTWARE; INSTEAD OF HAVING TO READ BORING POWERPOINTS WE COULD LISTEN TO THEM INSTEAD.
52. Have more laptop for students
53. Neural interfacing. Commands at the speed of thought. :) Nice concept. Think the problem out and watch it unfold on screen in front of you.
54. I feel more access to my classes through hand held devices might help to keep on track with assignments that are due.
55. I think it is computer lap with micro phone and printer.
56. Communication between classmates
57. Applications for smartphones. Blackboard already has one available. It would be really nice to have access to my classes no matter where I am.
58. Use of video conferencing via an online server to connect the instructor and all the students at the same time.
59. Mac computers.
60. I'm sorry I don't have much time to follow technology.
61. Seaport access and applications on iPhones
62. Seaport
63. None to my knowledge
64. Use of eCollege, use of cccconfer.org to meet with instructor and students.
65. I think the Pearson's mymathlab in mystatlab are very useful
66. SmartBoard
67. Perhaps more types of test taking skills that are available for itouches and ipads. It can make learning more fun.
68. IPad App for seaport Better apple integration.
69. Mobile applications
70. Teachers creating podcast for students to watch, would be helpful for lab to have a video of how to do the lab before going to class
71. Web Advisor, used by Chapman University in Orange, CA.
72. I think overall CCC does a great job of using technology to make classes more available to online students than other schools Ive tried. CCC offers a large choice of online classes and many more than the other schools in orange county.
73. Again, video conferring or live chat and computer simulations to enhance visual learning styles
74. Using all internet based text books that can be downloaded through the CCC site so costs are reduced, ease of use is improved, and trees are saved.
75. Confer
76. Course lectures uploaded on YouTube
77. I personally feel that Coastline needs to utilize Wikis. They offer endless possibilities for collaboration. With educational technology I feel that it is not so much the hardware and software that are important, but the way that they are being utilized in classes that is critical.
78. More video/online courses
79. E-Books to at least supplement regular texts.
80. I don't of any, but if there was a live classroom interaction for instructors and students that would be cool!
81. Blogs
82. The iPad and touch screen laptop for me because I can take hand written notes on the lap top and don't need to carry lots of notebooks plus, easy access to search for information.
83. iPad, interactive online chats.

84. Apple
85. Online education period
86. Interactive when it comes to online classes.
87. Apple tech
88. I think CCC should consider about using Skype in helping student with their education. For example, after school, the instructor or TA (if available) may use Skype to help student who is struggling with Accounting problem. Skype allows us to talk and show the explanation via webcam. I think it's really helpful. Students make an appointment with their instructor and meet up on Skype. They can even learn or solve a hard problem within few minutes.
89. The check out/rental of laptops from the bookstore would be very beneficial for the students, instructors, and school revenue.
90. I am not the most computer literate person, but I would think that having wireless access available on campus and having a couple more locations for computer labs would be helpful.
91. New white board technology
92. Tablet PC's or something similar that would help with organizing and note taking.
93. E-boards that allow display through a computer and digital writing.
94. Cell phone jamming technology
95. Instructors to review their online instructions before posting for adequate information. Helpful for students to achieve their goals, with less errors.
96. Ipads
97. Mobile apps for study. Like flash card apps to study foreign language or technology vocabulary.
98. Video classrooms, like through Skype
99. Don't know of any. Videos and audio on seaport should be able to be used on either Mac or PC. I am a Mac users and cannot view videos on seaport from home.
100. Hopefully, more classes in languages like Portuguese for online classes
101. FireFox 2 search engine. Higher grade video recording (lectures, online classes)
102. Online tutoring Mathematics is very helpful for all of students because we can ask the questions, or the problem in our homework any time.
103. Podcasts. Recording someone explaining it to you, like a lecture or something. Would be better than just reading/learning it on your own.
104. I definitely see on line learning the wave of the future. At least one component of the future education experience.
105. I am not really aware of any new developments that are not already implemented in the Coastline curriculum.
106. I think that Coastline professors should be available via email or chat all day. In the world we live in, technology and communications are pivotal for success. I work for one of the largest computer companies in the world, and I am available 24 hours a day, and handle a lot of my schooling and business in odd hours. Having to wait 2-3 days for an email response from a professor isn't acceptable.
107. Maybe being able to take a quiz through a mobile device???? a lot of students take online classes because they have other stuff going on that prevents them from physically attending class. It would be great if we could take short quizzes during lunchtime at work for those that can
108. Blackboard learning system
109. Applications on phones. Although most instructors prefer their students to not have cellular devices in class, the applications on 'Smartphone's' leave way for great strides in advancement. Applications such as the blackboard app (which Coastline isn't a part of) Allows students to access their coursework and MyCCC sites on the go.
110. I would like to see most textbooks available via e-book. Then the student can print out only what they need.
111. I think coastline does a pretty good job of keeping up with technology as is. I know the distance learning program is already well developed, I would just continue to push toward more classes being available entirely online.

112. The SmartBoard is incredible!
113. The most interesting developments in educational technology that i am aware of is the high speed internet.
114. I-pads - interactive lectures with lecturers from abroad - smart-boards
115. Cloud computing of teacher instruction, for enrolled students to view live classroom teacher instruction, customized testing for each student, so the questions a student misses, the feedback should give a more detailed lesson, study material, and information on that particular area of the question missed.
116. Webcams.
117. Only thing I can think of is upgrading Seaport in the future. I'm not a designer, so I wouldn't know what may need to be done. I do have an opinion on student laptops, although I do have one, i don't bother to bring it to class. I'd rather not. So i would disagree witha requirement.
118. I don't really know of any educational technologies that are coming in the future. I hear podcast are supposed to be a big thing, but I don't think those will be helpful for education. I suppose cheaper, e-texts that you can keep for life instead of subscription would be an excellent educational resource.
119. Online classes are saving my time and help me have time to study.
120. Tablets and smart phones have been increasingly popular. CCC and its instructors should discover different ways to reach their students by way of tablets and smart phones.
121. Smart board would be really helpful for the teachers.
122. Course compass is fantastic. Smarthinking is also one of the most valuable resources I have ever used and I think it would be a big mistake for the school to stop providing it.
123. The speed of the internet
124. With math such as Calculus, the instructor uses coursecompass.com and that website is very helpful.
125. Smart Pads.
126. Skype instruction/presentation from instructors
127. Online exams instead of Scantrons
128. Telepresence.
129. Keep Seaport
130. I think being able to "check out" a laptop would be a very good idea. I think students would utilize that opportunity if it was a lot cheaper to rent for the semester than to buy. My boyfriend would have checked out a laptop this semester, he needed one really badly. (preferably and apple computer, though!!) One thing Seaport can improve on is its tests. It needs a button that you can press to switch from page one to page 3, instead of having to load page two and then load page three. My boyfriend and I really had a hard time with that when we were taking our tests if we wanted to go back and check our answers. We'd have to go page by page. If you could change that, it would make taking a test so much easier!!!
131. I really enjoy the online class formats and I think Coastline should consider having more classes available online.
132. Use of iClickers to gauge class progress and understanding of material
133. As of now, I believe the most interesting developments in educational technology are the ipads and the smart phones. With these new technology, students are able to record lecture, take pictures of the homework or lecture topic, and even download ebooks that help facilitate their learning experiences.
134. Free computer lab for all students
135. I do not know of any new developments not already used by Coastline.
136. Smartboards are a great resource especially for students whose primary language is not English. I teach high school and the Smartboard is an excellent resource for ELL/ELD students. Additionally, for science teachers it allows for sharing online videos, virtual labs, and interactive assignments.
137. I think on line course are great
138. I think smart boards are great tools. I also like the use of internet with high speed in the class, very helpful for sharing online videos.
139. More true life stories, such as seen in C
140. Virtual classroom

141. I believe it is the software that helps students do homework and study online from their homes or work place. It is so much easier and time efficient
142. E-books are becoming more popular, but I don't think they should be replaced by hardback textbooks.
143. I believe that online classes should show a constant running average in a class room in reference to grades. It keeps both teachers and students aware of the success and how things are working in the online classroom environment. I had this at Irvine Valley College and it was GREAT!
144. Video conference
145. I haven't heard of anything that would be critical for educational purposes.
146. Please consider researching how courses are offered through Rio Salado Community College, Maricopa district in the Phoenix, Az area. Many of the instructors I have encountered through Coastline online courses act simply as "facilitators". Technology exists so that students can work through assignments together using webcams or Skype and should be suggested in each online course.
147. Using Smartphones or tablets as interactive response tools like the app linked below. http://www.turningtechnologies.com/studentresponsesystems/mobiledistancelearning/higheredrespons eware/
148. Not that was not already discussed in the survey.
149. I have honestly not heard of many Coastline technological rumors, probably due to the fact that I only take one or two online classes here a semester and I am a full time student at OCC. Based on this quiz I can guess that they're thinking about implementing a laptop system and a better and faster internet system. These are two advances that I would be excited about and I believe they would be the most beneficial to the students and staff.
150. Something with easier access to the professors
151. Live chat weekly for students
152. Video lectures.
153. Video lectures and technical simulations of class material.
154. Video and audio participation in classrooms via remote locations
155. I don't really know that much about upcoming technology - wish I did though!
156. More available online courses. I think now days everyone wants to go back to school but they are restricted because of other commitments like Work, Children, Family. With today's pressure of life and the downfall of our economy, I think its much to important to give people a chance to progress their educational goals through online courses. After all you cannot afford to even have a family without a Degree now days. I mean if you think about it, If everyone was able to do almost everything they needed to accomplish from home, pay bills, work, education, appointments, emailing medical facilities, ordering groceries, etc. We would have much more time to enjoy life and I think ultimately people would be much less stressed and/ or depressed. Not only that but it would eliminate overhead for many companies/employers and liability if their employees worked solely from home (given their jobs can be performed over the internet). Fewer lines, less time wasted on waiting 2 hours to see your doctor just for a test result, I think very soon this will be a reality in our daily life.
157. I love the fact that a lot of school districts are giving teachers iPad to keep records on. I think it would be an amazing tool for students as well. I like the idea of everyone being able to have access to these wonderful things, even if unaffordable. I like the "renting" option..you could even offer a rent to own option...hum....
158. Everything should be updated and on the same level as other institutions...even Universities for that matter.
159. PowerPoint with interactive pictures or examples work best for me.
160. This is not directed to CCC, but to MyMathlabs. MyMathlabs should have a better system or something because recently the website takes a a while to load and access.
161. Smartboards, and more things like the Pearson Online Education system.
162. I think coastline should HIGHLY consider the use of Tablet PC's for the future. They are more versatile with the apps available, more portable than a laptop with a longer battery life and are just a great over all technology. There is a app available (also for phones) called EverNote. This app allows someone to

record things such as lectures, and then on the same page, type and write. This is a huge asset to students, and could also highly benefit those with learning disabilities.

163. As a student in the Paralegal Studies program and having worked in legal, with great disappointment, I would have to say the facilities and technology in the legal department is "POOR" - and the curriculum relative to what a student should be taught in terms of technology is horrible. The classes need to incorporate a similar curriculum to that offered in the Paralegal Program at UCI extension--Law X401 learning spreadsheets, court forms, time sheets, case management software, document assembly (preparing Table of Contents, Table of Authorities, Pleading set up), the instruction/director is not familiar with these programs---and they are not taught. Our program is very "dated" and in all honesty, a graduating student going into a law firm will be lost in the area of legal document production and technology. Most law firms are not going to hold our hands while we learn what we could have been introduced to in the Paralegal Studies program. The director needs to be "current" with what is happening and changing in the area of technology and law, The Legal Department at the Costa Mesa Center needs to be "cleaned up" and "organized" the center is a mess. And we need to learn on computers...in the classroom would be nice. Thank you

164. The internet
165. Video recorded lectures if student misses classes. Or interactive video conferences for office hours.
166. Laptop for every student
167. Video lectures! The professors should record themselves teaching their course.
168. I am not aware of any new developments
169. Blogging, Facebook and Twitter. One can get a message to many people at once and people's responses may trigger something in someone elses mind about the subject.
170. Online group learning and lectures, both live and on-demand.
171. You should get people in your computer labs that actually will help and are not assholes, like the guy that every time I asked for help refused to give it or told me OCR had not been perfected,
172. Video streaming. Conference calls.
173. e conferencing
174. Interactive software such as Mathematica for mathematics or Stellarium for astronomy should be used and expanded. Seeing things visually and being able to interact with then will change how people learn.
175. I much prefer the blackboard system offered at IVC & OCC to CCC's Seaport. it makes more sense and feels more user friendly.
176. Making it possible for every student to have a useful tool for education.
177. I highly recommend using PowerPoint lecture and whiteboard at school.
178. Lecture notes on iTunes. This is really convenient for me. I like it that I can carry lectures with me without any paper, but it would be better if I could make notes. I also like participating with discussions on wiki.
179. Having lectures or brief notes online.
180. Student access to coastline equipments from home (like cisco equipments). also we need the instructors to guide the students in the labs !!!!
181. I am not aware of any. What I see as a problem with Seaport are web design/usability issues, consistency, and low quality of video.
182. I think coastline is in good technology standing, although I think some e-textbooks would be better and if every student can have a laptop.
183. Being able to purchase and view textbooks online was an exciting educational development for me. It took some getting used to at first, but after an adjustment period I was able to utilize the online textbooks greatly.
184. I don't know. In regard to question #4, I almost answered "no" because I thought the question was whether students should be REQUIRED to have laptops. However, I changed it to "yes" because I believe you may have left out the word "access" after the word "have".
185. A computer at every seat
186. Better blackboard
187. I do not know of any educational technology.

188. I am not too familiar with new learning technologies but I am sure that Coastline could benefit from adding something more that helps their teachers and students have better communication.
189. WiFi access at the campus so those with laptops could do their class assignments where ever they happen to be.
190. Authorized VMware classes
191. I am not currently aware of any other technology available for the classroom.
192. Real-time online, and interactive, video lectures/instruction/Q&A.
193. I thought the smart boards were really nice. They allowed everything to be written in one area, without having the writing constantly erased for more space.
194. I believe that the instructors at CCC (online anyways) need to work on their course websites before adding new technology. In almost all of my classes I have a hard time finding the information that I need because instructors put it in the least appropriate place and I have encountered mixed information in several classes (i.e. giving several different due dates or instructions for the same project/paper).
195. IPad's as a tool to educate students, especially those with special needs.
196. I am fairly new to the educational technology and am unable to give an adequate answer.
197. Definitely having iPads four courses and also the professors having them as well
198. Statewide emergency alert for all Coastline students
199. Everything done online
200. More development of e-material
201. Grades online
202. iPads. eBooks.
203. Online textbooks
204. To use a system that is better than Blackboard.
205. At Orange Coast College, for an Ecology class, a teacher of mine is using a Mastering Biology program for Virtual Labs. She dealt directly with the publisher and the Ecology section was part of a larger package but it was under $20. I think that if Coastline were to integrate this in their curriculum, they would be able to offer more science classes online rather than in the classroom setting.
206. Definitely online text books because they can save a lot of money.
207. I think the latest developments have been close to worthless. IT should focus on improving quality and consistency of current implementations, like email, grading and library services. New technologies are usually a waste of valuable resources, and sometimes do more harm than good.
208. Smartboard
209. More video presentations.
210. No opinion. Content with what is being used now
211. Emailing to smart phones. In this day of age almost everyone has a smart phone of some kind. They make it so affordable that every student should consider getting this. If you have a smart phone and a reliable computer, there is software you can buy for 9.99 called EasyTether. What it does is it shares your phones internet with your computer, so now you can browse online anywhere that you get a phone connection. It was very handy for me in the last week of my 8 week class. Also with smart phones, emails, almost become like text messages. To send emails from a computer to a phone back to a computer was super convenient and a lifesaver.
212. Second life - we used it in an online statistics class - lots of potential!
213. MyCourseCompass
214. Use of chatting or apps for submission of assignments
215. eBooks
216. Remote access to simulations/labs so work can be done outside of classroom hours.
217. iPad/iPhone specific websites and online resources. They are not programmed to view well on the iPhone/iPad.
218. I have seen a lot of innovative use of connected tablets like iPads.
219. On demand video training with access to prewired lab equipment (maybe not for entry level students)

220. Self-paced courses with instructor feedback such as McGraw-hill connect and Pearson websites. Love them!
221. I really appreciate and enjoy the online courses. I don't exactly live near Coastline Community College and my work schedule doesn't always fit well into the regular school schedule. Therefore, having access to my class whenever I have time is great. It really allows me to move forward with my educational goals and not put everything else in my life on hold. I hope that there will be more online courses offered in the future.
222. Digital paper as opposed to normal paper. Classes would be cooler if they went digital, since a lot of paper is wasted every day.

QUESTION 21b

If Coastline offered workshops explaining and demonstrating how to use learning technology resources available at Coastline would you attend?

Answer Options	Response Percent	Response Count
Absolutely	19.7%	38
Maybe	47.7%	92
No	32.6%	63
answered question		193
skipped question		23

If Coastline offered workshops explaining and demonstrating how to use learning technology resources available at Coastline would you attend?
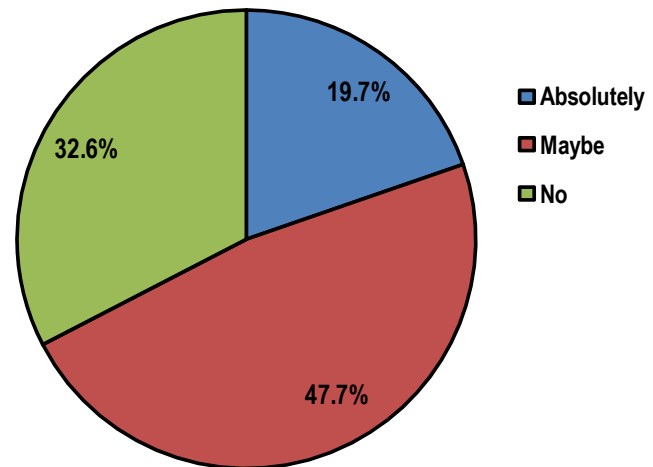
Is there anything else you would like to tell us regarding students' use of learning technology?

Answer Options	Response Count
	196
answered question	**196**
skipped question	**326**

1.   Wish there were more detailed Video lectures for math, chem and all science classes.
2.   The online classes have been well-run with relatively few problems. I have had good experiences with my distance learning classes through CCC.
3.   I just want to add that if it weren't for the online technology and the teachers who take the time to put all this together, I wouldn't be able to finish my classes especially when you have children and a busy work schedule. Keep up the good work.
4.   Only downfall is that when the system is down so is student e-mail which is used by many instructors for letting us know what is going on. An outside link to student e-mail outside of the CCC student portal would be so great.
5.   Not sure I know the difference between CCC Website and CCC Portal, I may have used incorrectly in my responses. I have taken all classes at CCC online and prefer this method for learning. THANKS!
6.   It has made furthering my education possible, without the option of online distance learning I would not even consider working towards a higher degree.
7.   Icons would get more people using the computer...
8.   We need Mac cross training
9.   Why aren't midterm and final exams given online? It is so much more convenient. After all, the courses are called on line. Shouldn't exams also be on line. Some other JCs do offer exams on line.
10.   No more budget cuts
11.   Enjoyed the experience, this is my first course and it has been very positive.
12.   In relation to my answer to no. 4, I think these workshops are a good idea for students I would not attend because I am mostly familiar with computers.
13.   Online learning is exciting and I can't wait to complete assignments using the computer vs. attending class
14.   It can be a little difficult in the beginning of each class to understand how the class will work online....usually seems to take about a week of navigating around website to figure everything out, but in general, i love online/distance learning. i like that i can go at my own pace and actually absorb the information instead of just hurrying to jot down the instructors notes but not getting a chance to really hear what they are saying! :)
15.   Definitely worth while
16.   Include optional reminders for course dates, i.e. assignment due dates, drop/add dates...
17.   I take classes at both OCC and CCC. It seems like they would both be utilizing the same system, Blackboard or Seaport? I really enjoy the online option for certain classes. As an older, working mother it allows me to juggle my time and work towards completing my education.
18.   I think the nature of an instructor is to assign more homework because of on-line use. The online accounting homework software are not user friendly. The time to input the data versus computing the answers to the problems is more. Sometimes I forget what I learned because of the time it took to enter the answers. Regarding a class such as an online excel class, computer information systems or even

managerial accounting; I believe that more work is naturally assigned because it's online. More work doesn't allow a student to ask all questions, strengthen the weaknesses or learn the skills that weren't learned the first time. I believe in quality versus quantity.

19. It makes learning better!
20. Nothing. Thank you for taking the time to create this survey. =)
21. I think learning languages in class is better than learning it online.
22. Need more computer lab.
23. The CCC portal could be less confusing to new students. A better user friendly site for students would be an excellent improvement.
24. My answers concerning instructors was difficult due to differences - some much better than others.
25. Coastline has made it much more convenient for me to pursue my degrees. Thanks!
26. I take visual arts classes, so the answers may not really answer what you are trying to find out.
27. Some of the existing issues with Seaport are much too difficult to explain in writing, however, most of it is easy to use. It is very important to forward your CCC email to your personal email, because then you never miss one, nor to you miss them because the system is down
28. The first question asked how I would like to be contacted - my reply was "other" because I dislike having to log into yet another email address. I attend two different schools, have work and personal email addresses and the last thing I want is one more place that I need to log in. I attempted to use the auto forward but missed emails because it just stopped working. Overall I believe technology is ESSENTIAL in creating a valuable learning experience for students. In the workplace, understanding of technology is definitely an advantage (in any career) and it is fantastic that Coastline understands the importance of this and is willing to make an effort to increase students tech knowledge.
29. System rebuilds should not be done prior to mid terms. That was not helpful!
30. Technology can be a distraction for students if the internet is fully opened to them. They may browse Facebook or other sites that have no value to education.
31. I really don't use your "learning technology" so I'm not really sure what you're talking about. Your CCC student website is terrible, it's un-intuitive, takes forever to find anything even in the student portal I log in to. Things are not placed in an intuitive, clear manner. The projectors in the classrooms are terrible, unclear, old, ours has a yellow hew to the image all the time making it really hard to read. I am appreciative of the computer classes you offer in CIS, you are above the rest of the LA basin's offerings and I commend you on that. Free wireless in the GCC - awesome, thanks. You have a library? Wow, didn't know that. But how would I know that? Your website portal is terrible. Bookstore - why in the world couldn't I order my book online? Why did I have to go in to the bookstore, place my order and then return to pick it up 10 days later? Is the manager just a control freak? This was very inconvenient and most of the class didn't have their book until week 7. That's ridiculous.
32. Overall, I have really enjoyed the online learning process!
33. If Coastline offered workshops explaining and demonstrating how to use learning technology resources available at Coastline, I would prefer the workshop to be available on the Internet.
34. Instructors should be better equipped to aid in students' learning technology.
35. I really enjoy the online classes and think they are the best way for busy students juggle school, work, and their social lives.
36. I would like to see more on-campus classes in the future.
37. I think learning technology is very effective and convenient for a student such as myself. I work 40 hours a week and it's nice to be able to attend school through the use of learning technology.
38. It would be nice if the professors would have video lectures.
39. I love that I can have control of my study time and the lesson schedule is laid out in black and white.
40. I would love class podcasts!
41. Your program is allowing me to attend college. The eight week format is awesome & the instructors that I have had so far have been much more accessible than in a traditional environment. The class discussion format is extremely useful because a question asked by one is answered for all & is available for the whole term as a reference. The online format allows extreme flexibility in when & how I work on my

classes and gives me the opportunity to complete them much faster than the traditional classroom. I really appreciate that your program offers enough classes to complete an A.A. degree in many different areas. You are providing one of the most complete online programs in the country. Your online format is the best available in matching my learning style as it provides an independent study type program that also has all of the advantages of the traditional classroom setting. Your instructors have always responded promptly to any questions & concerns that I have had & the materials (books, videos & online media) have been very easy to use & very self explanatory.

42. The issue is probably more with the quality of images the instructor produces (California Geology, for example) for use rather than the technological platform. Some images were extremely distorted and appeared to have been produced years ago for overhead projectors and as a result, were impossible to make sense of in the process of completing coursework.

43. I didn't understand this question at all: "Rank the importance of the content format you prefer on Coastline's websites for the following" I don't like how math professors only put their syllabus on the CourseCompass site that I have to pay for. I can't see it on Seaport for free. I use my Smartphone to check things like how many students are registered in a class that I want to enroll in, the grade I got on an assignment, due dates, etc. For the last two, it is a lot of clicks (or often misclicks) to get where I want to go. Perhaps have a mobile style sheet? The discussion boards in Seaport could use some work. I can't start a thread (but maybe the professor closes that off?). Seaport opens in a new/popup window. This is annoying. Especially on my Smartphone- it comes as a popup overlay and reduces the amount of screen real estate.

44. I think it is pretty dam good, but there is always room for improvement. In education we cannot stay where we are.

45. I haven't really had any complaints, overall a good experience. I do have an iPad and would be interested in any advancements in that direction regarding class work with apps or an app for seaport etc. Thank you.

46. CCC needs a better internet server

47. I did not like the online experience. Instructor's organization was important and some were not organized or did they not reply to online discussions in timely manner.

48. If there is more technology to allow more courses to be offered online, especially Computer Technology courses that would be awesome.

49. The MAIN reason I go to Coastline is because their technology and online courses are superior to other community colleges in the district. I don't have time to waste going into classes, and online classes are much more efficient, due to the technology available and in use at Coastline.

50. I would like each syllabus to contain a "How to Use the Learning Technology Available for this Class for Greatest Success" section with the instructors' suggestions about how to best proceed with the course material & resources.

51. I have taken a number of online courses. The more comfortable the instructor is with the technology results in a better organized course presentation and I achieve a better grade in these well organized courses. The instructors have to know how to use the technology and maximize its potential to help the students learn.

52. It is a great source to learn than being in a class room

53. I think it is important to learn and use.

54. The instructors should also be up to date in technology and update their lessons with current dates. They should at least care even though it's a telecourse. The system should not be down for maintenance right before midterms and finals. I could not log in to turn in my final assignment in an 8 week course because the system was down BEFORE spring break.

55. Offer multiple sessions of high demand classes. Also offer some CST classes during the day time. Some parents want to take classes when kids are in school. That will give them time with kids at night and avoid babysitting expense

56. I appreciate the quick response from my professors. Especially Professor Lee and Professor Rogoff, they have been AWESOME!

57. Michele has done an amazing job introducing us to the new world of site building.
58. Look as far into the future as your mind allows. Don't only solve the problem that is right in front of you, look out and see how learning will occur in the future (use your mind's eye - take some time with this. Close your eyes and think... How will a college student be learning 20 years from now?). Class content and participation will probably be delivered to the student's home. Everything needed will be available via an access portal and / or download to mobile devices. Textbooks will be highly organized so that reference, glossary, study guides, simulations, test preparation, and testing, will be inclusive. Immersion will be more possible and the content highly developed and consistent as the course can be a finished product from the input of many teachers instead of a single, variable quality product from many teachers - each creating their own "class".
59. When problems arise with a weekly assignment and the student attempts to contact the instructor via email, the student should not be penalized for being late if the instructor does not respond in time for the student to resolve the issue and complete the assignment.
60. Technology is always improving so it's better to keep up to date on technology available within the college and continue improving them
61. Research of other successful software for students to use would be a great investment.
62. I think it would vitally important to increase faculty's use of technology both in the course and in preparation of course materials
63. Make sure the CCC website is running at all times and does not have any technical difficulties because when taking an online class it it hard to submit assignments when due.
64. The most important for students is, they do not have to worry anything about log in seaport and do homework, quizzes, and final online since students have problem with the school network.
65. Teachers must answer email, i have taken classes elsewhere where teachers are slow to answer and
66. Involve business community to partner and invest in the college with equipment and funds.
67. I'm taking an online digital editing class and feel that the curriculum is more an independent study class than a class that is taught..
68. I would like to get access to a online interpreter for virtual content such as podcasts or videos online. Other option would be to do the podcast video record in sign language or subtitles on videos.
69. Post the technology requirements in class descriptions...estimate costs. Instructors need to respond to email! Most do...one that was teaching adobe after effects would not answer...sent 4-5 emails! That is very unprofessional and disappointing.
70. I would like to see classes in printing quality art prints; From digital camera to editing software to high quality prints. This final step has been missing so far.
71. While in Seaport it would be nice to be able to use the Back button but I do not see that anywhere while in Seaport.
72. Provide deep discounts for equipment purchases.
73. I think the online classes are excellent, but you need more of them with larger class sizes. It is a shame that you have this technology set up and it works well, but that nearly every class has a waiting list. When you are doing something well and there is a huge demand for it, then you need to expand it. I would not want Coastline to invest in new technology, computer labs, etc. until it is able to fund an expansion of its online classes.

Appendix II: Part 3. Faculty Technology Survey 2010-2011: Responses

Questions1a1b1c

What is your gender?

Answer Options	Response Percent	Response Count
Male	41.1%	37
Female	58.9%	53
answered question		**90**
skipped question		**0**
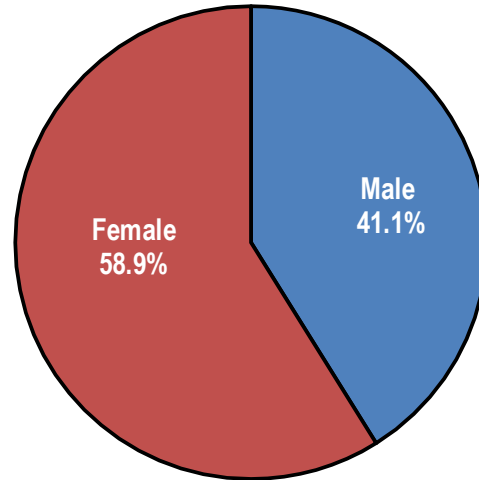
What is your gender?

Questions 2a2b2c

What is your age range?

Options	Response Percent	Response Count
Under 30	6.7%	6
30 - 45	16.7%	15
Over 45 - 60	37.8%	34
Over 60	37.8%	34
No Comment	1.1%	1
answered question		90
skipped question		0

What is your age range?
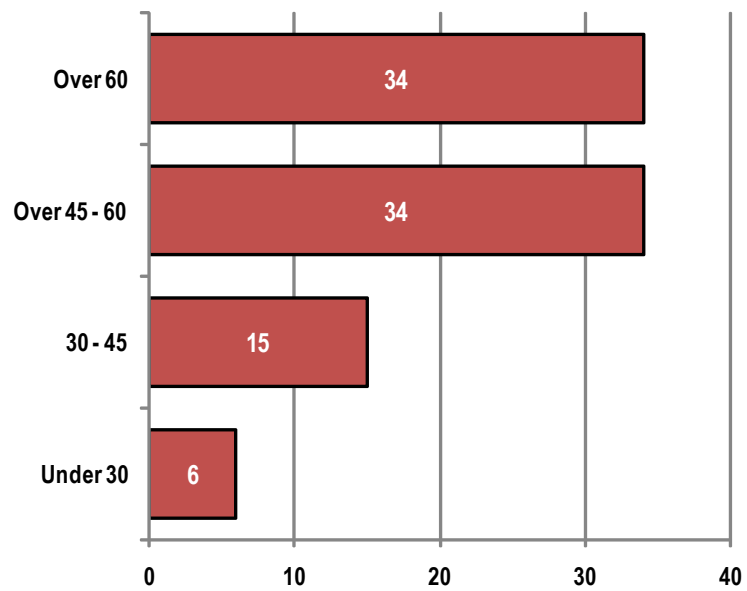
Questions 3a3b3c

Are you a full-time or part-time instructor?

Answer Options	Response Percent	Response Count
Full-time	41.1%	37
Part-time	58.9%	53
answered question		90
skipped question		0

Are you a full-time or part-time instructor?
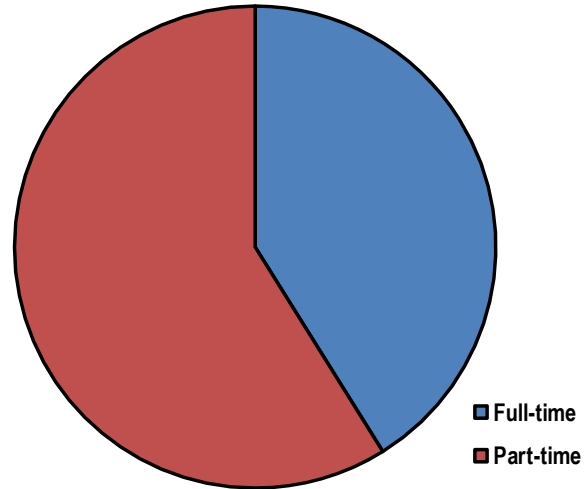
Questions 4a4b4c

What is your experience teaching in higher education?

Answer Options	Response Percent	Response Count
Less than 1 year	2.2%	2
1-2 years	2.2%	2
3-5 years	11.1%	10
6-10 years	10.0%	9
Over 10 years	74.4%	67
answered question		90
skipped question		0

What is your experience teaching in higher education?
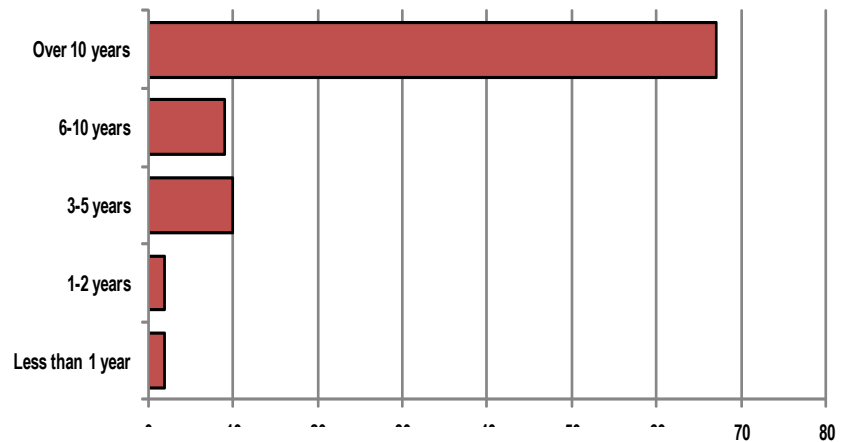
Questions 5a5b5c

How many online courses have you taught?

Answer Options	Response Percent	Response Count
None	18%	16
1-3 courses	27%	24
4-6 courses	7%	6
Over 6 courses	49%	44
answered question		90
skipped question		0

How many online courses have you taught?
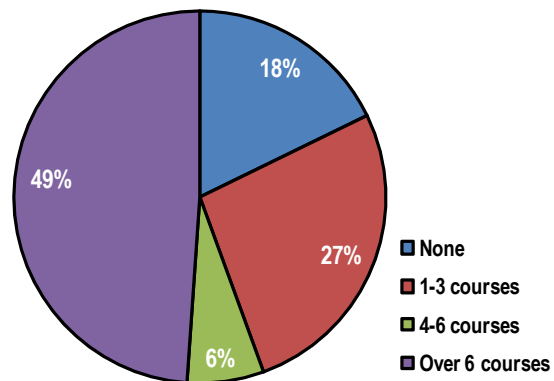
Questions 6a6b6c

What type of internet service do you use at home?

Answer Options	Response Percent	Response Count
No access	1%	1
Dial-up modem	1%	1
Digital subscriber line (DSL)	40%	36
Cable modem	56%	50
Satellite (HST)	3%	3
Cellular	18%	16
Wireless	14%	13
answered question		90
skipped question		0

What type of internet service do you use at home?
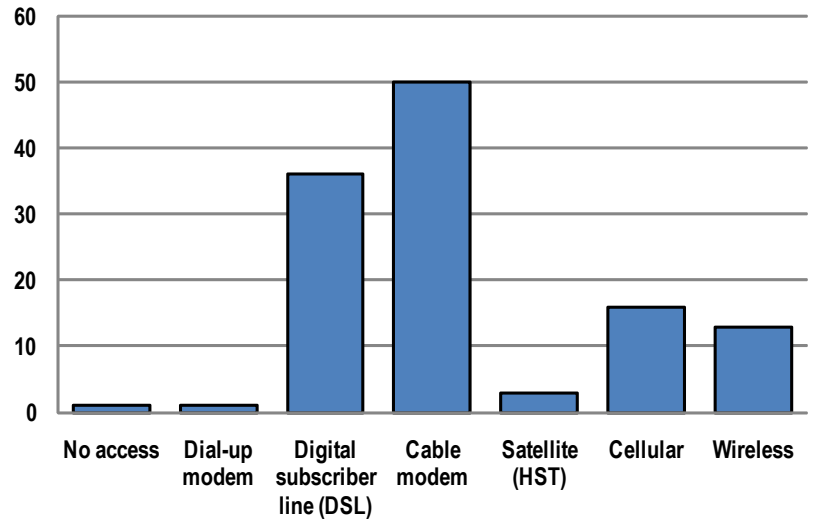
Questions 7a7b7c

What Internet browser/s do you use at home and work?

Answer Options	Home	Work	Response Count
Internet Explorer	70	61	80
Google Chrome	24	10	26
Mozilla Firefox	49	27	53
Netscape Navigator	9	4	10
Opera	2	3	5
Safari	24	13	31
Other (please specify)	0	4	4
answered question			90
skipped question			0

What Internet browser/s do you use at home and work?
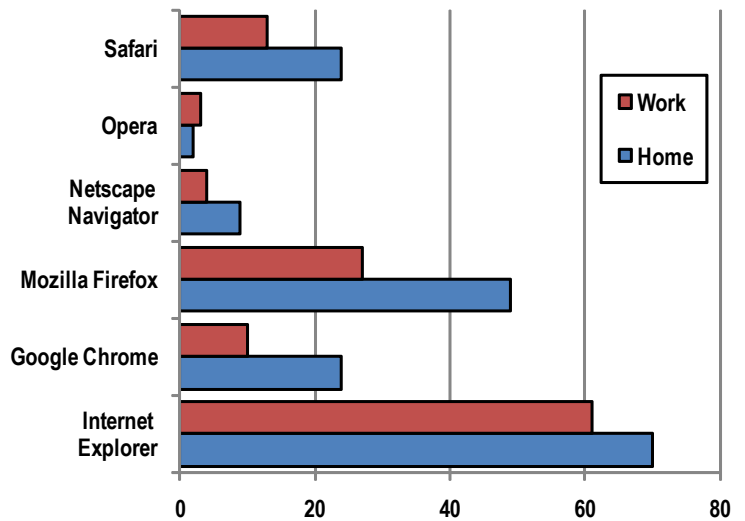
Questions 8a8b8c

What type of computer/s and peripherals do you use at home?

Answer Options	Response Percent	Response Count
Desktop	74%	67
Laptop	82%	74
NetBook	7%	6
iPad	13%	12
eBook Reader	16%	14
Scanner	50%	45
Desktop Video Camera	32%	29
Head Phones	34%	31
answered question		90
skipped question		0

What type of computer/s and peripherals do you use at home?
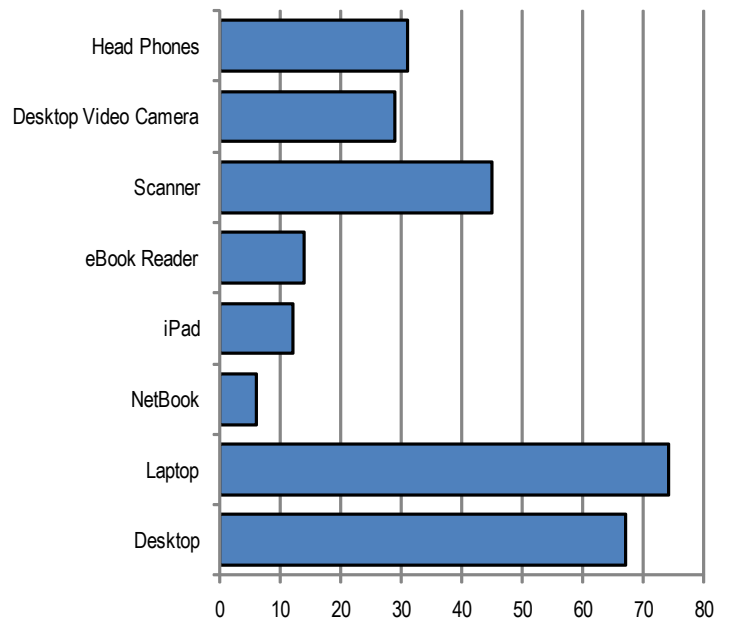
Question 9a

Rank the importance of the following technology initiatives the college should address in the next 5 years.

Answer Options	Low	Below Average	Average	Above Average	High	N/A	Rating Average	Response Count
Virtual simulations for local and remote access (i.e., laboratory	2	0	11	10	7	3	3.67	33
Live conferencing options for meetings and/or instruction	1	3	8	13	8	0	3.73	33
Incorporation of social networking software strategies into college	4	4	4	12	9	0	3.55	33
Lecture capture and automated distribution systems	0	3	11	5	11	3	3.80	33
Online 24/7 student helpdesk	0	3	7	11	11	1	3.94	33
Electronic textbooks	0	4	5	9	14	1	4.03	33
Small device convergence support and services	1	1	7	9	14	1	4.06	33
Improved and expanded automation of college processes/services	0	1	5	10	15	2	4.26	33
Interactive and self-paced online tutoring support	1	1	9	7	15	0	4.03	33
Automated/online self-help graduation road map for degree plans	1	2	7	8	15	0	4.03	33
Increased Wi-Fi access for students, staff, and faculty	1	5	5	6	16	0	3.94	33
Faculty/staff training to use new and emerging technology	0	0	2	10	21	0	4.58	33
Other							1.00	1
answered question								**33**
skipped question								**0**

Rank the importance of the following technology initiatives the college should address in the next 5 years.
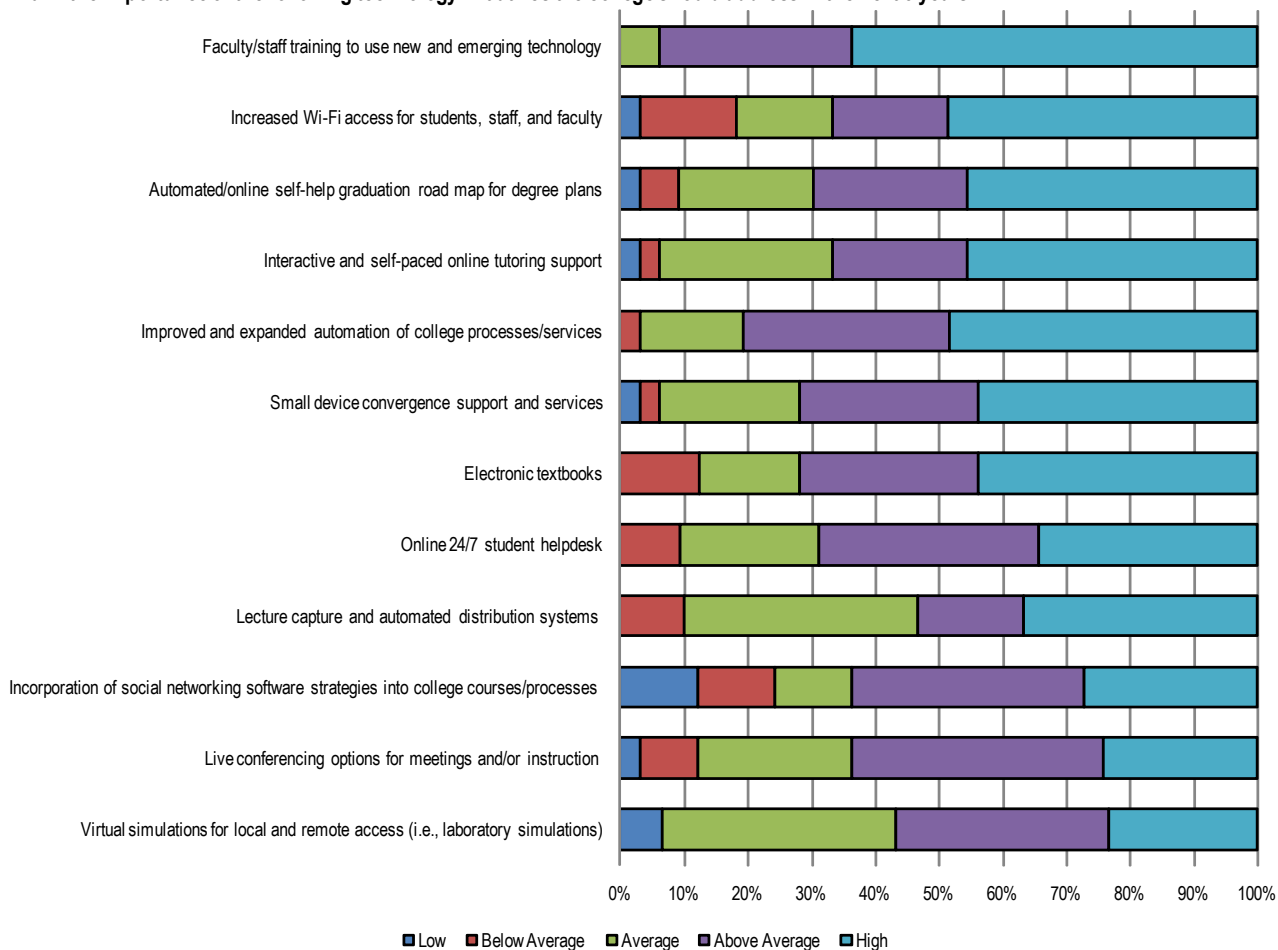
Question 9b

What type of printer/s do you use at home?

Answer Options	None	1	2 or more	Response
Laser (B&W)	14	8	0	22
Laser (Color)	15	7	0	22
InkJet	5	13	6	24

How are your printer/s connected to your computer?

Answer Options	USB	Parallel	Serial	Ethernet (10-	Ethernet	Wireless	Don't know	Response
Laser (B&W)	13	3	2	0	0	2	2	22
Laser (Color)	14	0	2	0	0	6	0	22
InkJet	9	1	0	1	0	9	4	24
answered question								**24**
skipped question								**0**

What type of printer/s do you use at home?
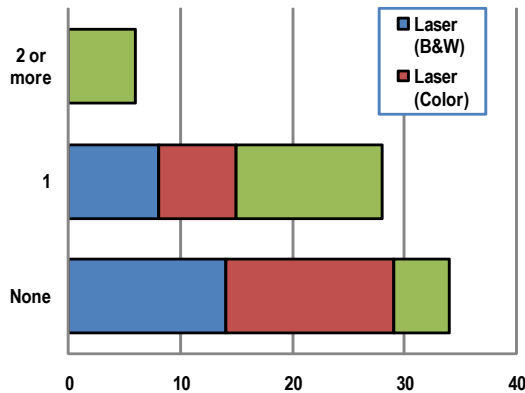
How are your printer/s connected to your computer?
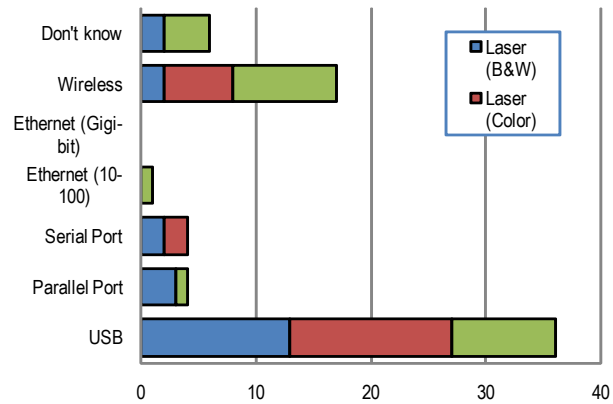
Questions 12b10c

What type of computer/s and operating system/s do you use at work?

Answer Options	Not Applicable	Windows XP	Windows Vista	Windows 7	Max OS	Linux	Don't know	Response Count
Desktop	9	27	4	8	2	0	3	53
Laptop	16	11	7	8	3	0	0	45
Netbook	29	1	0	0	0	0	0	30
iBook	29	0	0	0	1	0	0	30
eBook Reader	29	1	0	0	0	0	0	30
							answered question	56
							skipped question	1

What type of computer/s and operating system/s do you use at home?
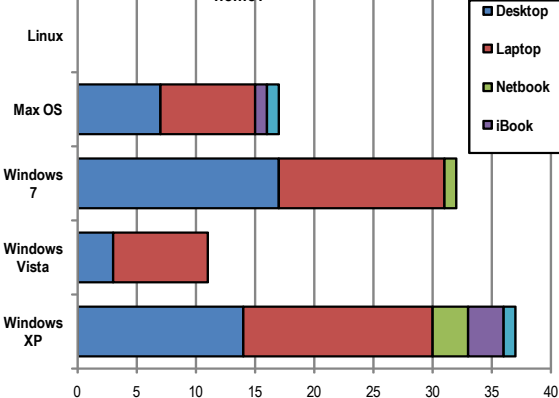
What type of computer/s and operating system/s do you use at work?
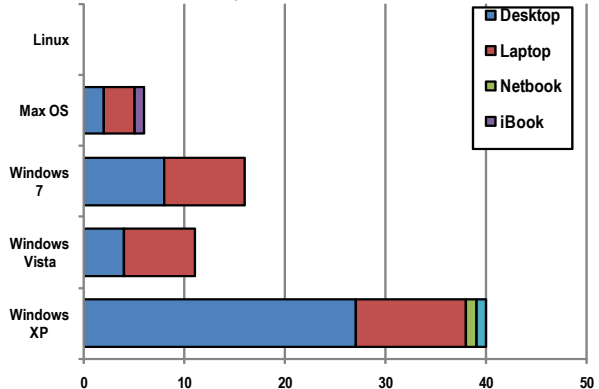
Questions 11a

How much of a barrier are the following factors in the use of technology in your teaching?

Answer Options	Low	Below Average	Average	Above Average	High	N/A	Rating Average	Response Count
Time required to learn about technology	3	6	9	8	6	1	3.25	33
Time required to use technology in a class	2	7	11	8	3	2	3.10	33
Network/Internet connection problems	3	6	12	6	5	1	3.13	33
Computer crashes, programs failing to run properly	3	5	10	9	5	1	3.25	33
Lack of current hardware and/or software	6	4	10	7	5	1	3.03	33
Classroom projection problems	3	10	5	6	1	8	2.68	33
Lack of on-site support	10	4	7	3	6	3	2.70	33
Access to technology-enhanced facilities	7	5	6	6	6	3	2.97	33
Student access to technology	3	7	12	7	2	2	2.94	33
Inadequate technical support for your students	5	6	16	1	3	2	2.71	33
Inadequate technical support for you	10	6	11	2	3	1	2.44	33
Copyright/intellectual property issues	10	7	9	2	3	2	2.39	33
Lack of money to fund initial course development costs	8	4	8	4	6	3	2.87	33
Lack of necessary technical skills	7	2	13	9	0	2	2.77	33
Lack of necessary online teaching skills	10	4	10	6	1	2	2.48	33
Question its usefulness in teaching my courses	8	7	10	3	2	3	2.47	33
Don't know how to get started	10	7	9	1	0	6	2.04	33

answered question	**33**
skipped question	**0**

How much of a barrier are the following factors in the use of technology in your teaching?
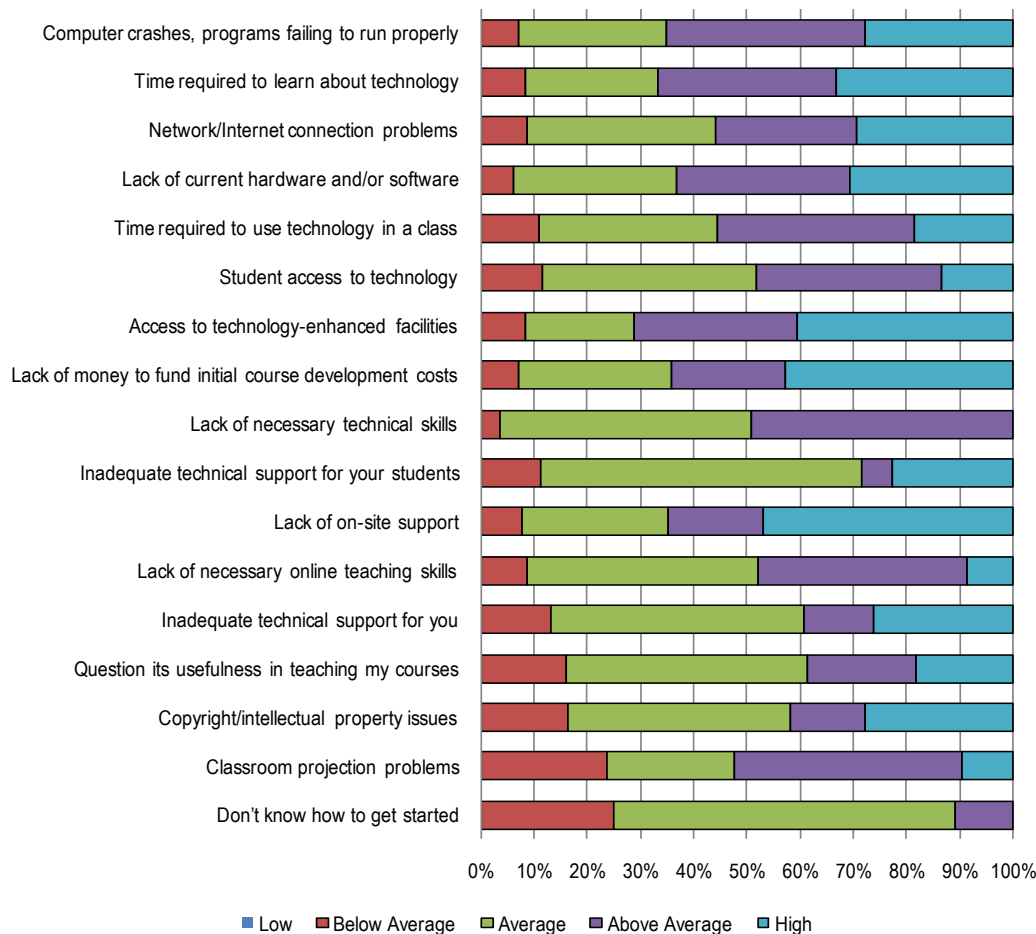
Questions 10b

How old are your home computers?

Answer Options	Less than 1 year	2-4 years old	Over 4 years old	Response Count
PC	8	11	5	20
MAC	2	5	1	8
			answered question	24
			skipped question	0

How old are your home computers?
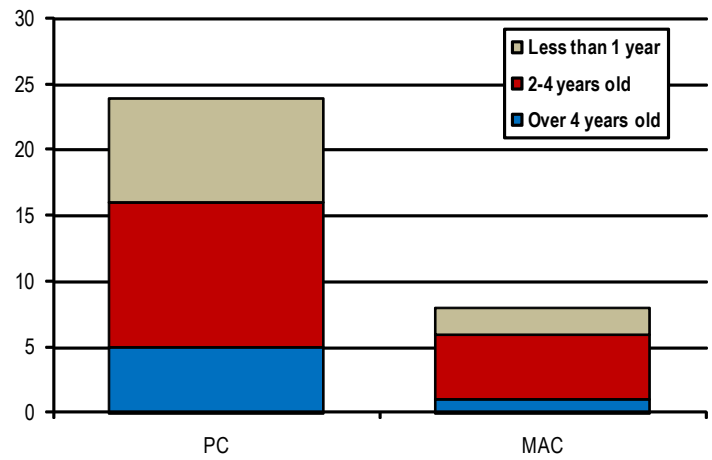
Questions 12a16b11c

Do you use a computer in your classroom for instruction and/or delivering presentations?

Answer Options	Response Percent	Response Count
Yes	77.5%	69
No	22.5%	20
answered question		89
skipped question		1

Do you use a computer in your classroom for instruction and/or delivering presentations?
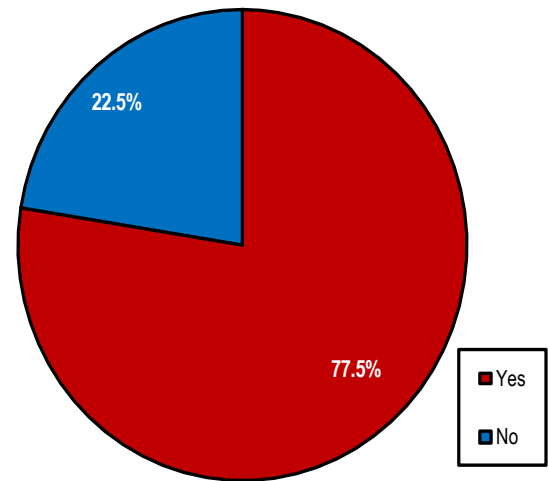
Questions 13a17b12c

Do you use Seaport for classroom and/or online instruction?

Answer Options	Yes	No	Response Count
Classroom instruction	39	50	89
Online instruction	69	20	89
	answered question		89
	skipped question		1

Do you use Seaport for classroom and/or online instruction?
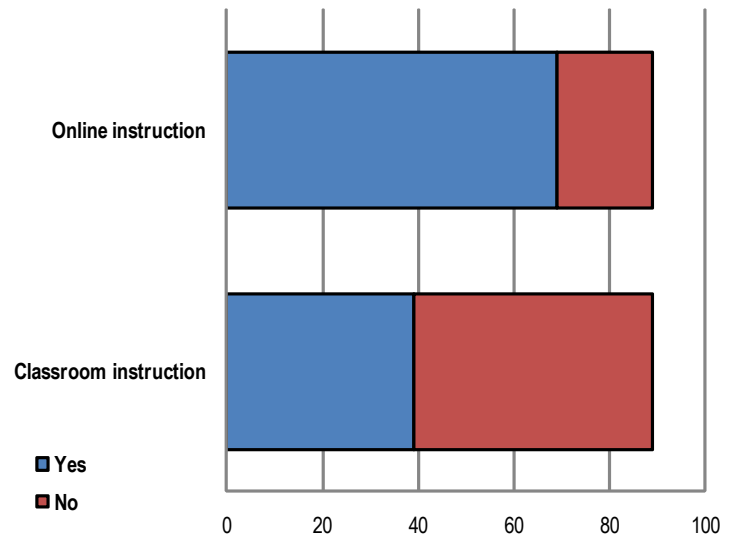
Question 11b

How many computers do you have?

Answer Options	None	1	2	3	More than 3	Response Count
Desktop	3	13	6	0	2	24
Laptop	1	10	8	0	3	22
Netbook	6	2	0	0	0	8
iPad	7	3	0	0	0	10
eBook Reader	7	4	0	1	0	12
				answered question		24
				skipped question		0

How many computers do you have?
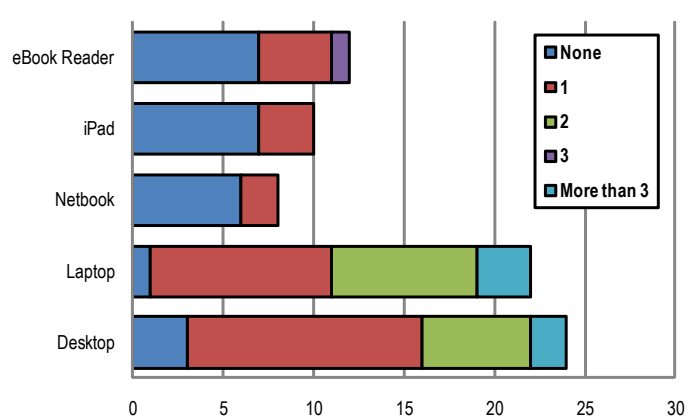
Question 13b

Other than OWA, do you use your home computer to login into a computer at Coastline?

Answer Options	Response Percent	Response Count
Yes	75.0%	18
No	25.0%	6
If you answered no to this question, please explain.		2
	answered question	24
	skipped question	0

Other than OWA, do you use your home computer to login into a computer at Coastline?
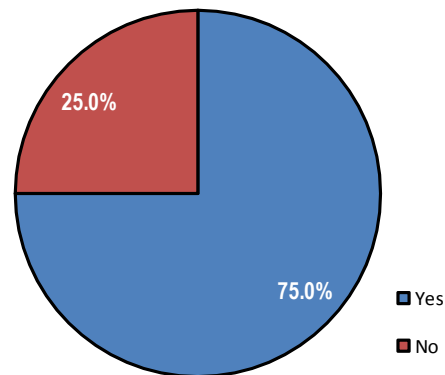
Questions 14a18b13c

What components and/or activities do you use/have in your Seaport classes now and/or plan to add in the future?

Answer Options	Use now	Do not use	Plan to use in the future	Will never use	What is it?	Response Count
Simulations	12	47	21	4	8	92
Interactive applets	18	43	16	1	14	92
Audio resources	31	39	18	1	3	92
Video lectures/demonstrations	40	34	18	0	0	92
Presentations/lectures	53	27	12	0	0	92
Discussion forum	63	23	5	0	1	92
Online grading metric	64	20	6	0	2	92
Online syllabus	78	9	5	0	0	92
Instructor introduction	85	4	2	0	1	92
					answered question	**92**
					skipped question	**1**

What components and/or activities do you use/have in your Seaport classes now?
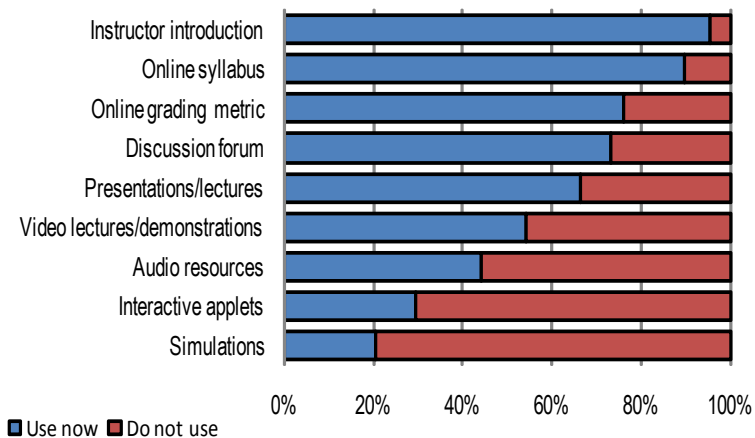
What components and/or activities do you plan to add ito your Seaport class the future?
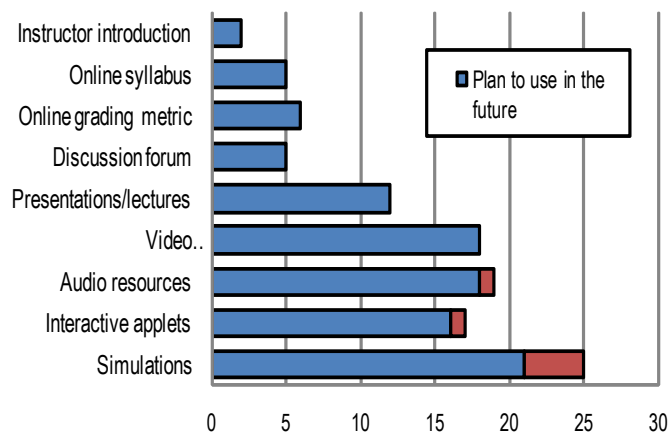
Question 15b

What video game console/system(s) do you have at home?

Answer Options	Response Percent	Response Count
None	37.5%	9
Wii	50.0%	12
Xbox	12.5%	3
Play Station	8.3%	2
Gameboy	16.7%	4
Other (please specify)		0
	answered question	24
	skipped question	0

What video game console/system(s) do you have at home?
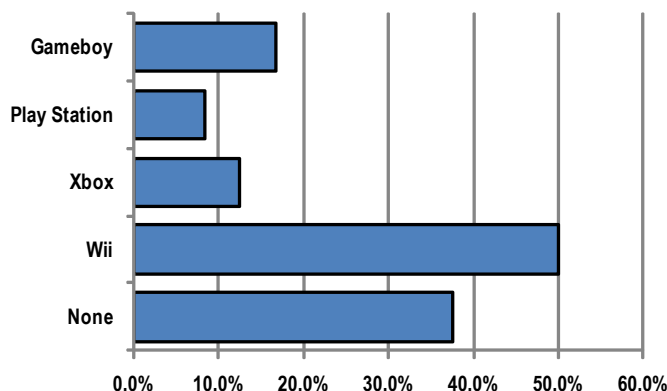
Question 15c

How important are the following technologies?

Answer Options	Very Important	Somewhat Important	Not Important	Unsure	Response Count
Using computer-based presentation systems/tools	13	12	2	3	30
Demonstrating application software that students need to use	16	10	2	2	30
Collaborating with staff and/or management	16	14	0	0	30
Providing students with resources/assistance to use technology to conduct research	17	10	1	2	30
Providing audio/video or multimedia presentations in your classes	19	9	1	1	30
Using distance learning technology	20	6	2	2	30
Inspiring students to use creative solutions and/or approaches	21	8	0	1	30
Helping students access, analyze, and use information	22	5	0	3	30
Presenting and/or managing information for students	23	7	0	0	30
Helping students solve new challenges and/or problems	24	6	0	0	30
Working to increase effectiveness as an instructor	25	4	0	1	30
Developing instructional materials to enhance teaching and learning	25	5	0	0	30
Communicating and interacting with students	27	3	0	0	30

How prepared are you to use the following technologies?

Answer Options	Very Prepared	Somewhat Prepared	Not Prepared	Unsure	Response Count
Providing students with resources/assistance to use technology to conduct research	9	16	3	2	30
Using computer-based presentation systems/tools	10	13	5	2	30
Collaborating with staff and/or management	11	16	0	3	30
Demonstrating application software that students need to use	12	13	3	2	30
Inspiring students to use creative solutions and/or approaches	13	14	2	1	30
Providing audio/video or multimedia presentations in your classes	14	9	6	1	30
Helping students solve new challenges and/or problems	15	12	2	1	30
Developing instructional materials to enhance teaching and learning	15	13	2	0	30
Working to increase effectiveness as an instructor	16	11	2	1	30
Helping students access, analyze, and use information	16	9	2	3	30
Presenting and/or managing information for students	17	12	1	0	30
Using distance learning technology	17	10	2	1	30
Communicating and interacting with students	23	6	1	0	30
			answered question		30
			skipped question		3

How important are the following technologies?le

	Very Important	Somewhat Important	Not Important	Unsure

How prepared are you to use the following technologies?
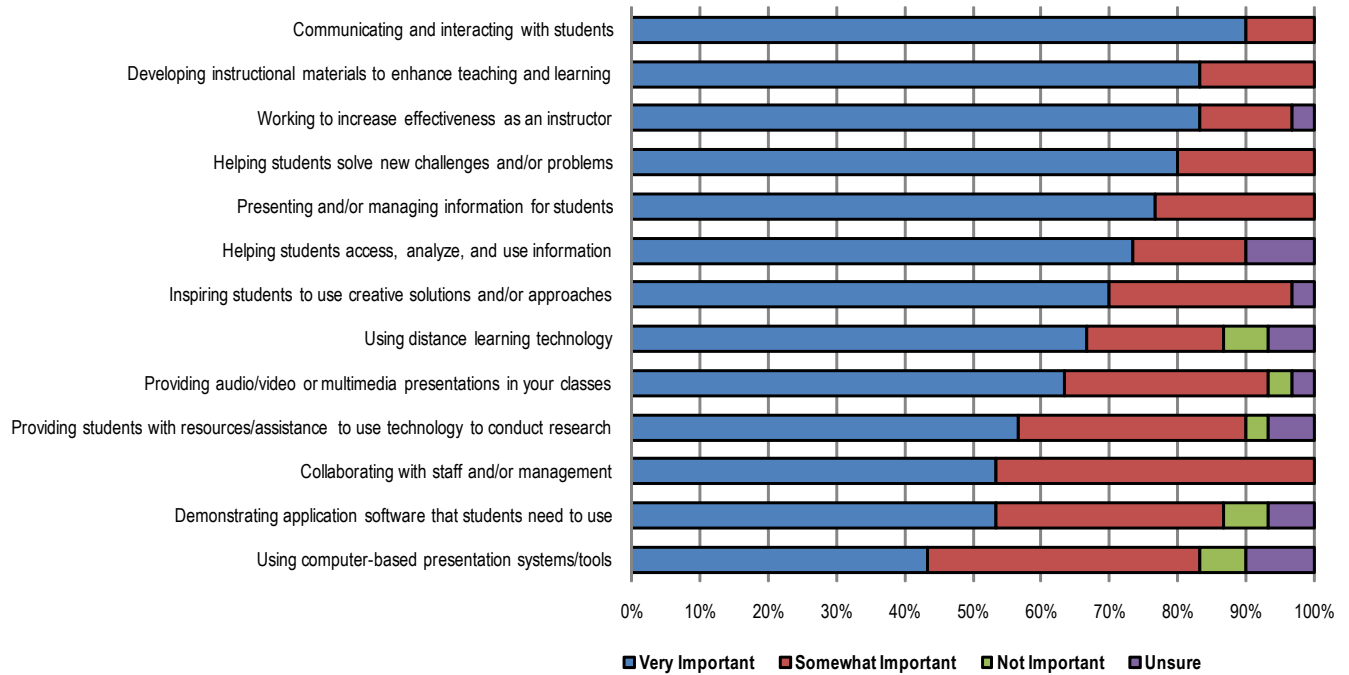
	Very Prepared	Somewhat Prepared	Not Prepared	Unsure
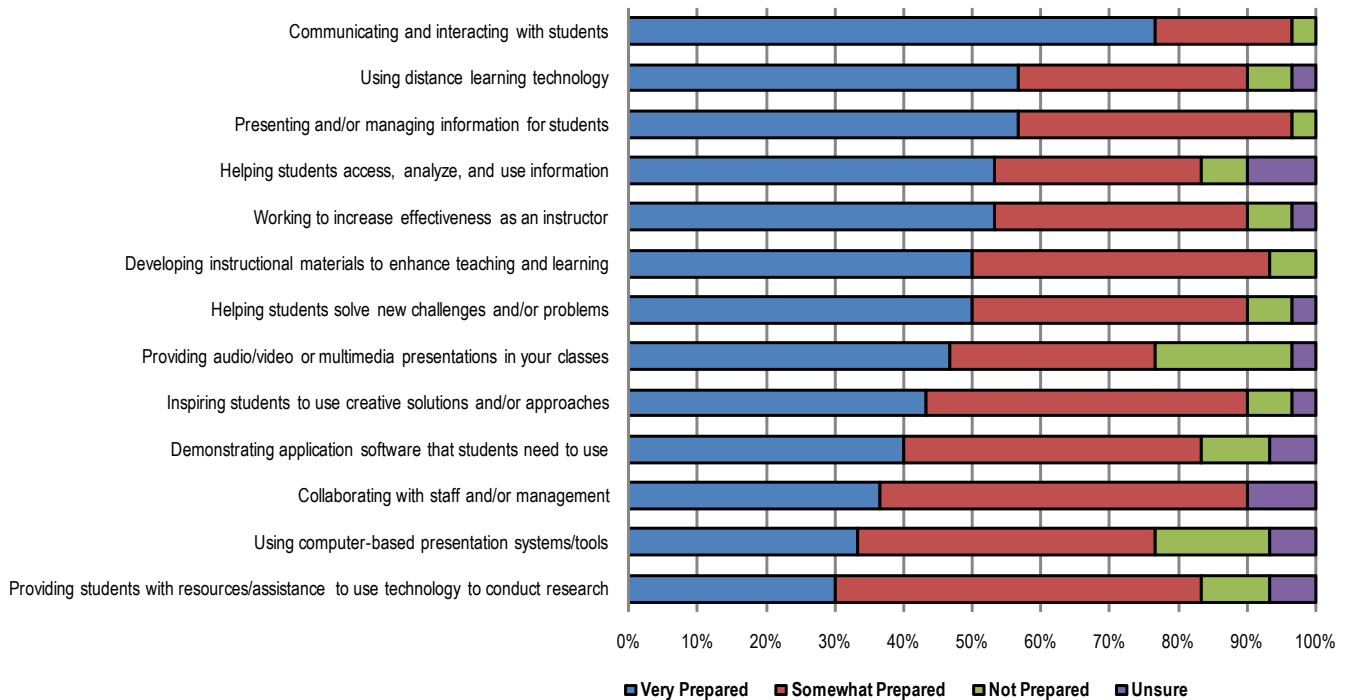
Question 16c

How prepared are you to use the following online technologies now (both at a distance and in the classroom)?

Answer Options	Very Prepared	Somewhat Prepared	Not Prepared	Unsure	Response Count
VOD casting	1	4	12	7	24
ePortfolio	2	7	12	3	24
RSS	2	5	10	7	24
POD casting	2	7	11	4	24
Video repository	3	8	9	4	24
Collaborative groups ware, e.g.,	3	9	7	5	24
Interactive applet/simulation builder	3	4	12	5	24
Audio/video storage for students	3	10	8	3	24
Student, group, or class Wikis	4	8	9	3	24
Social media site (Facebook, etc.)	5	12	6	1	24
Student, group, or class Blogs	7	7	8	2	24
On-line video conferencing	8	7	4	5	24
Chat	12	5	4	3	24

How prepared will you be to use the following technologies in the near future (both at a distance and in the classroom)?

Answer Options	Very Prepared	Somewhat Prepared	Not Prepared	Unsure	Response Count
RSS	1	8	6	9	24
ePortfolio	3	9	4	8	24
VOD casting	3	4	8	9	24
Interactive applet/simulation builder	4	6	5	9	24
POD casting	4	7	7	6	24
Video repository	5	9	3	7	24
Audio/video storage for students	5	9	6	4	24
Social media site (Facebook, etc.)	7	8	4	5	24
Collaborative groups ware, e.g.,	7	4	5	8	24
Student, group, or class Wikis	8	8	4	4	24
Student, group, or class Blogs	8	6	4	6	24
On-line video conferencing	8	6	4	6	24
Chat	11	6	4	3	24
				answered question	24
				skipped question	9

How prepared are you to use the following online technologies now (both at a distance and in the classroom)?
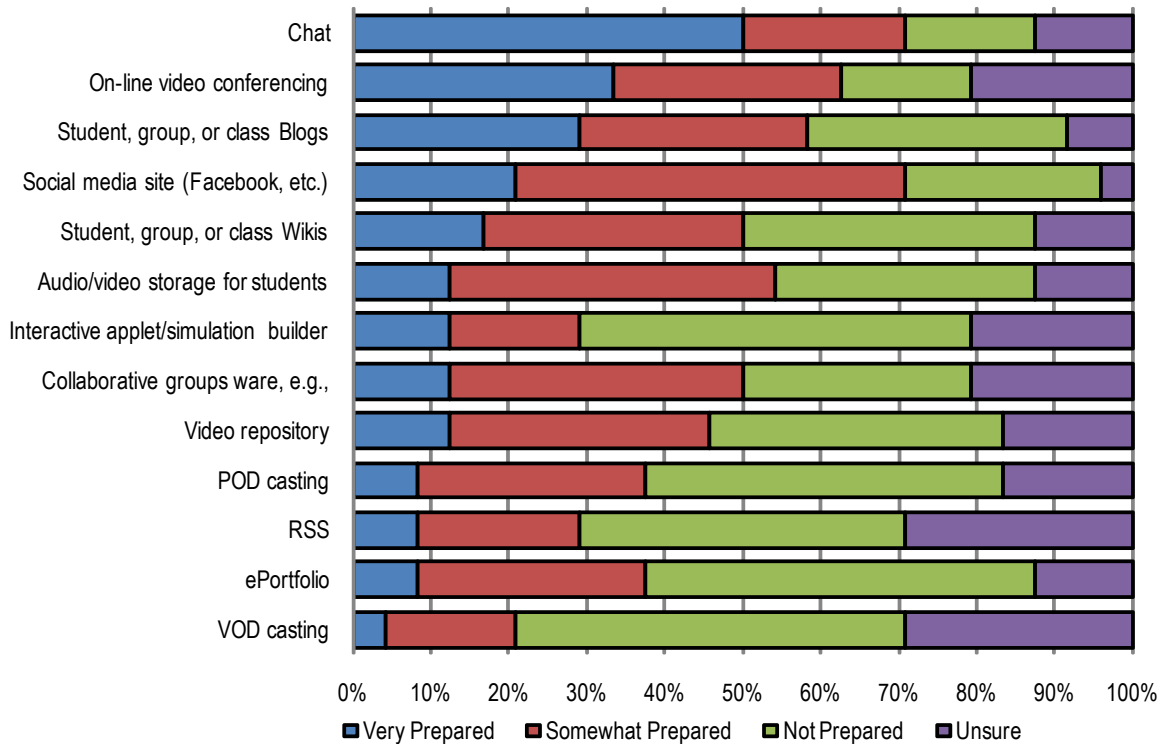
How prepared will you be to use the following technologies in the near future (both at a distance and in the classroom)?
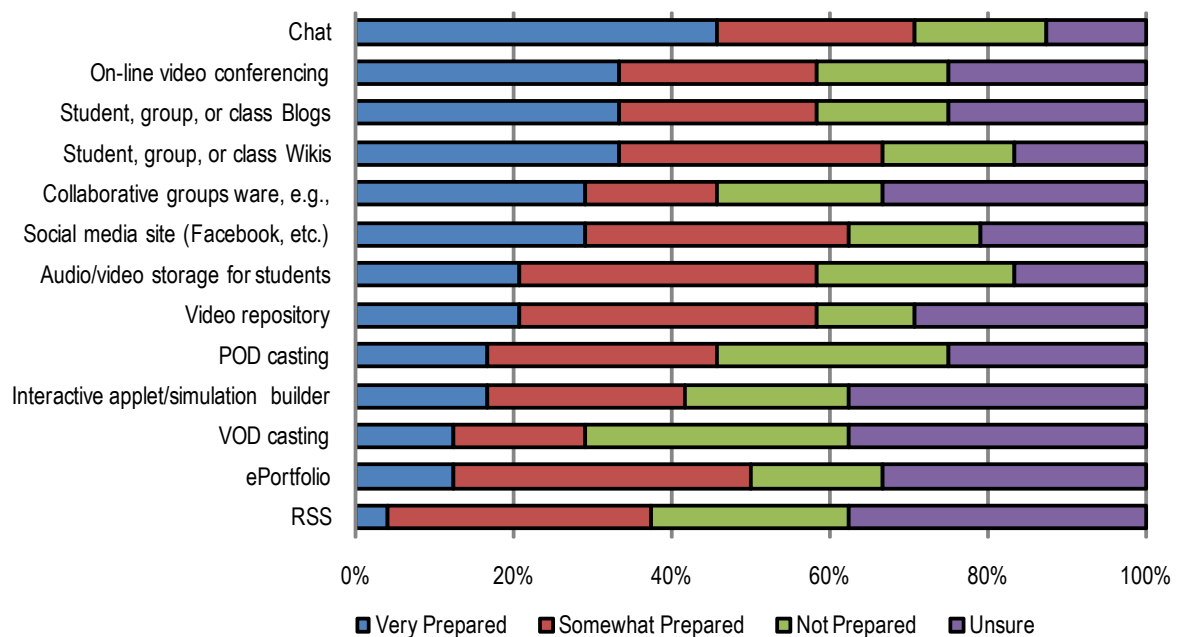
Question 20b

How often do you use the following in your classroom (select the best answer for each item)?

Answer Options	Daily	Weekly	Monthly	Quarterly	Twice per year	Yearly	Don't Use	Response Count
Laptop	8	2	1	0	1	0	11	23
College installed	4	9	1	2	0	0	7	23
Inkjet	4	1	0	0	0	0	18	23
Laser (B&W)	6	3	2	0	0	0	12	23
Laser (Color)	4	1	1	0	0	0	17	23
							answered question	23
							skipped question	1

How often do you use the following in your classroom?
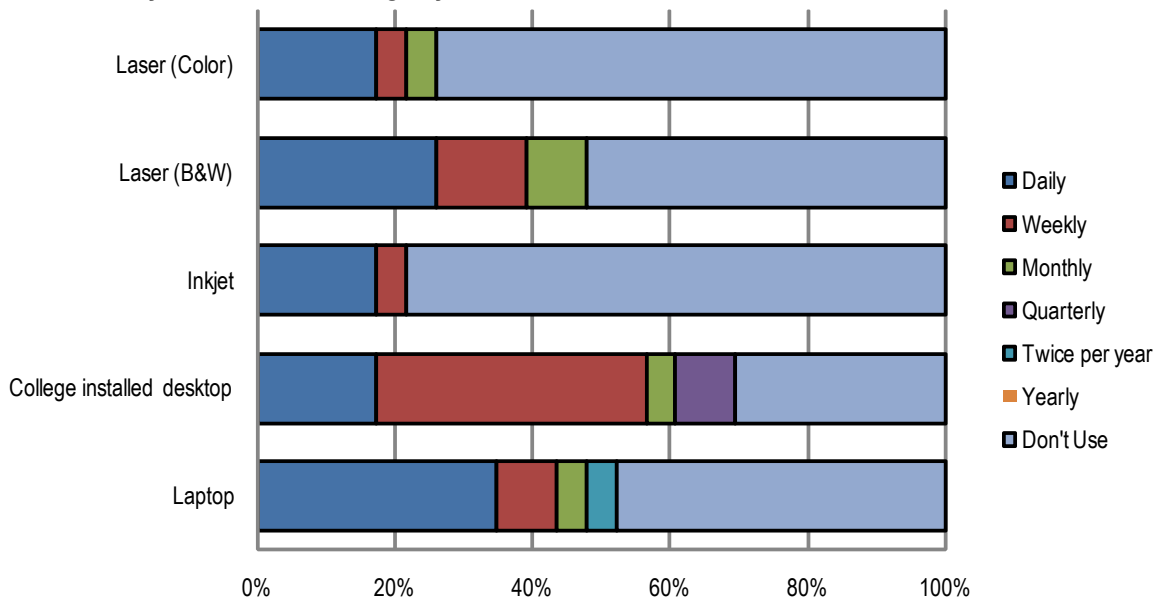
Question 21b

How often do you use the following technology in your classroom?

Answer Options	Daily	Weekly	Monthly	Quarterly	Twice per year	Yearly	Do not use	Response Count
Play video (DVD/Tape/Streamed)	3	1	1	2	2	1	13	23
Play audio	3	3	2	2	0	1	12	23
Present PowerPoint lectures	6	3	1	1	0	1	11	23
Search or demonstrate Internet resources	7	7	0	0	2	1	6	23
Display course website or Seaport activities	8	4	1	1	0	1	8	23
Demonstrate Software applications	4	4	2	1	0	0	12	23
Use Smartboards for classroom instruction	3	1	0	1	2	0	16	23
Use desktop video phone systems	1	1	1	1	1	0	18	23
Use cell or smart-phone systems	3	0	0	1	0	1	18	23
						answered question		23
						skipped question		1

How often do you use the following technology in your classroom?
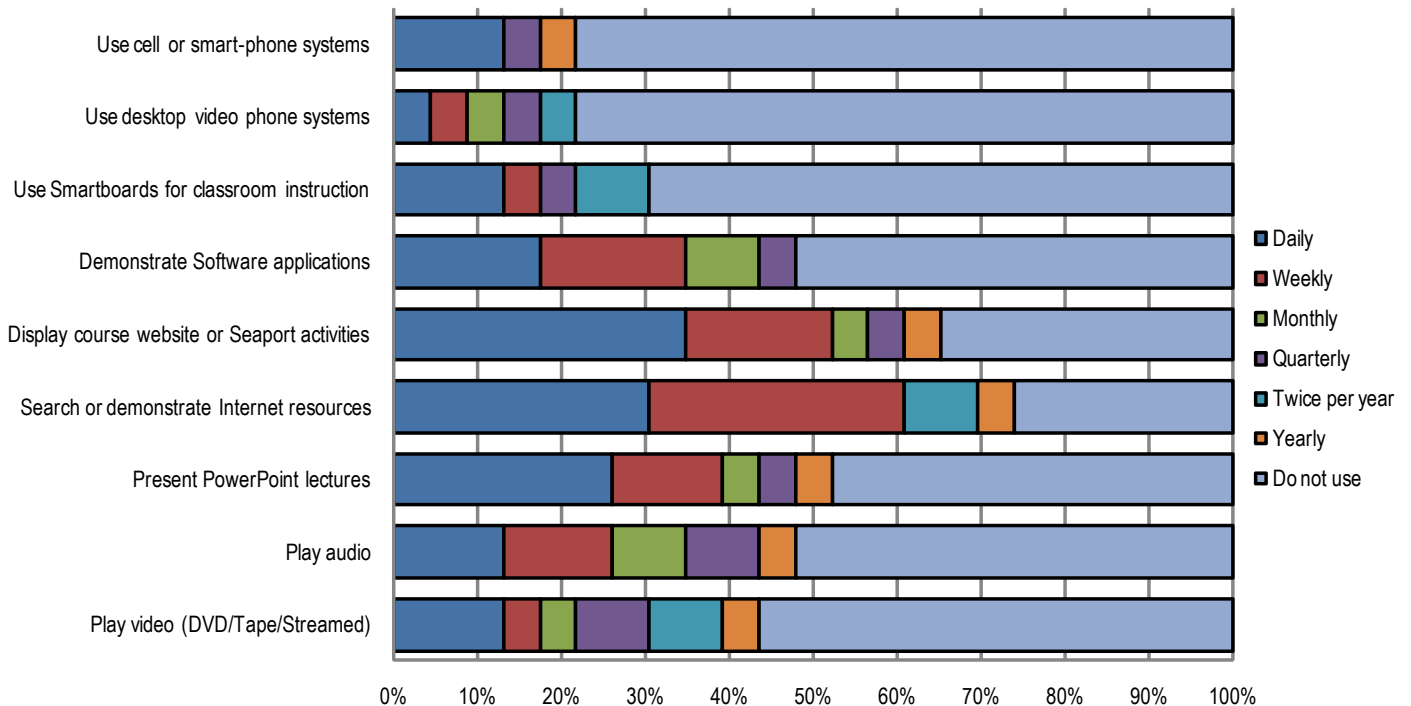
Question 22b

How often do you use the following for teaching and learning?

Answer Options	Daily	Weekly	Monthly	Quarterly	Twice a year	Yearly	Do not use	Response Count
Checkout and use audiovisual and supplemental technology equipment	0	3	1	1	1	0	17	23
Use (and/or have participated in) video conferencing and/or desktop conferencing systems	0	3	5	1	1	5	8	23
Have participated with TV studio/ISD for course production projects, marketing, and course promotions.	1	1	2	2	1	7	9	23
Have received assistance with instructional design and development (ISD) activities	1	1	0	4	3	3	11	23
Prepare myself or supervise creation of presentations/lectures for virtual delivery/distance	3	6	5	0	1	0	8	23
Use Banner Self-service for data input including grades and drops.	3	4	4	7	4	0	1	23
Use MyCCC (Luminis) Portal for data access including rosters/add codes.	4	7	5	5	1	0	1	23
Use college supplied computers for instructional work, e-mail, administrative work	7	7	3	1	0	0	5	23
Use Coastline's Seaport Learning Management System	13	4	1	0	1	0	4	23
Use computers for educational content creation (design and development, coursework)	17	2	1	0	0	1	2	23
Use my own home computer for college related instructional work, e-mail, and administrative	21	1	0	0	0	0	1	23
							answered question	**23**
							skipped question	**1**

How often do you use the following for teaching and learning?
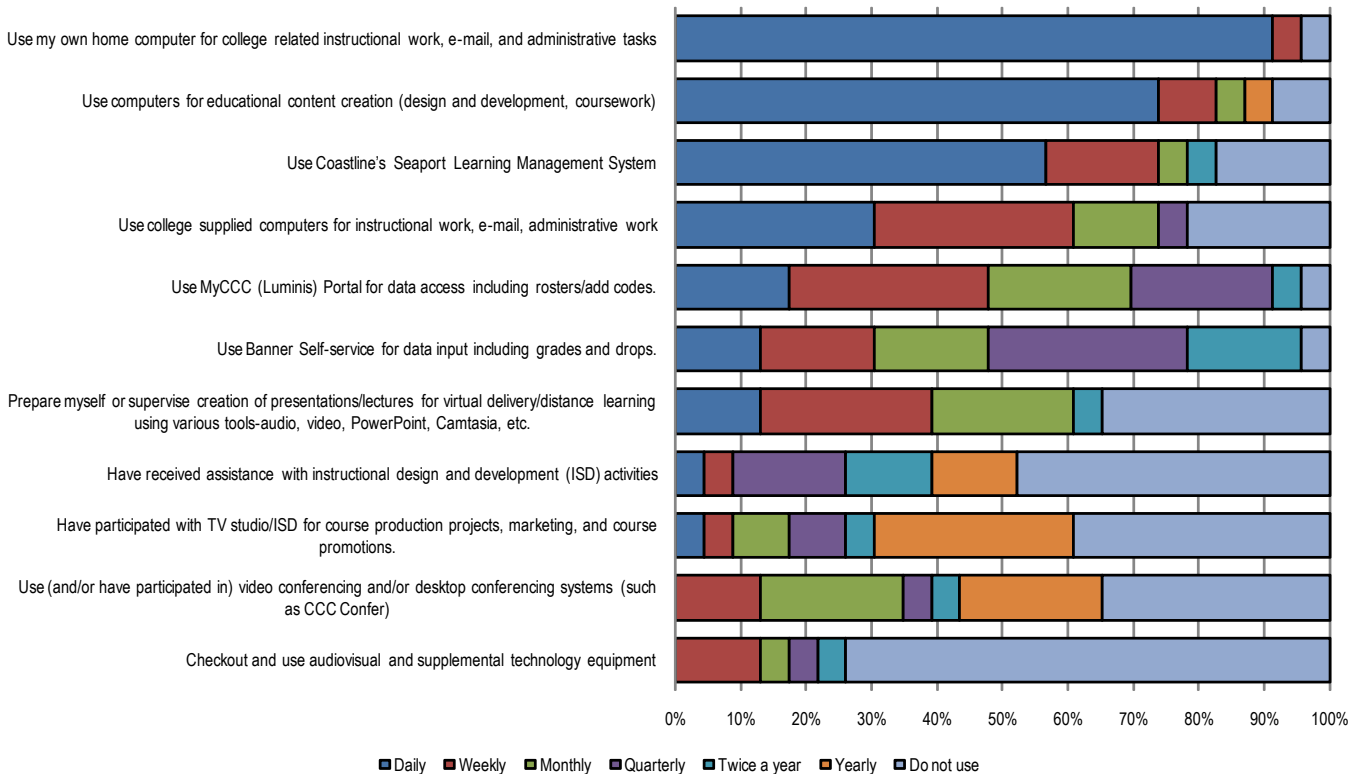
Question 17c

What online course management/facilitation tools or technologies do you use now?

Answer Options	Often	Occasionally	Never	Response Count
Blog	3	5	16	24
Wiki	3	5	16	24
Peer to peer grading	3	3	18	24
Chat rooms	4	7	13	24
ePortfolios	4	2	18	24
Synchronous interactive presentations (e.g., Breeze)	4	4	16	24
Interactive simulations	4	7	13	24
Instant messaging	4	2	18	24
Content databases/repository	8	6	10	24
Interactive tests/drills	10	8	6	24
Drop boxes	11	5	8	24
External links	14	6	4	24
Asynchronous discussion boards	16	3	5	24
FAQs	16	4	4	24
Calendar	18	5	1	24
e-mail	23	1	0	24

How do you rate the importance of the following online course management/facilitation tools or technologies for teaching and learning?

Answer Options	Very Important	Somewhat Important	Not Important	Unsure	Response Count
Blog	2	10	5	7	24
Instant messaging	2	9	9	4	24
Wiki	3	9	4	8	24
Peer to peer grading	3	9	5	7	24
ePortfolios	5	6	2	11	24
Synchronous interactive presentations (e.g., Breeze)	5	7	2	10	24
Chat rooms	6	11	3	4	24
Content databases/repository	8	7	4	5	24
Interactive simulations	10	6	4	4	24
External links	11	9	1	3	24
Asynchronous discussion boards	12	5	3	4	24
Drop boxes	12	5	5	2	24
FAQs	12	8	2	2	24
Interactive tests/drills	15	5	3	1	24
Calendar	16	6	1	1	24
e-mail	23	1	0	0	24
				answered question	**24**
				skipped question	**9**

What online course management/facilitation tools or technologies do you use now?
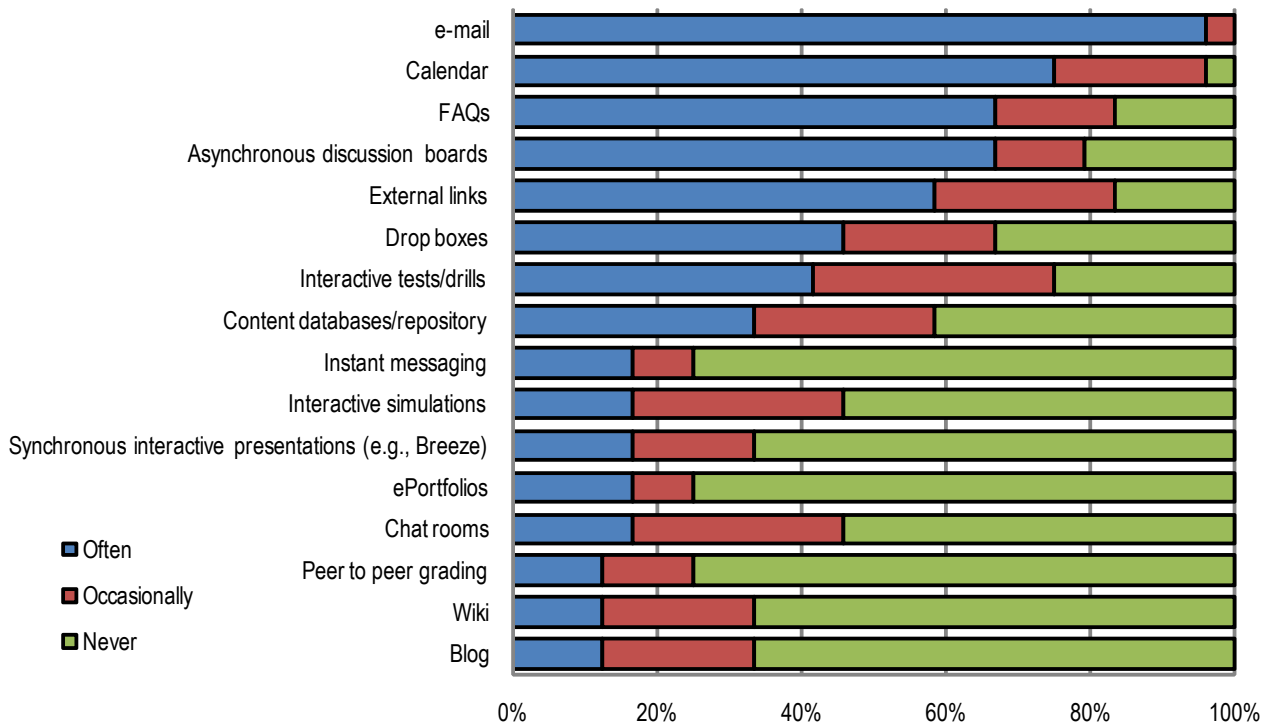
How do you rate the importance of the following online course management/facilitation tools or technologies for teaching and learning?
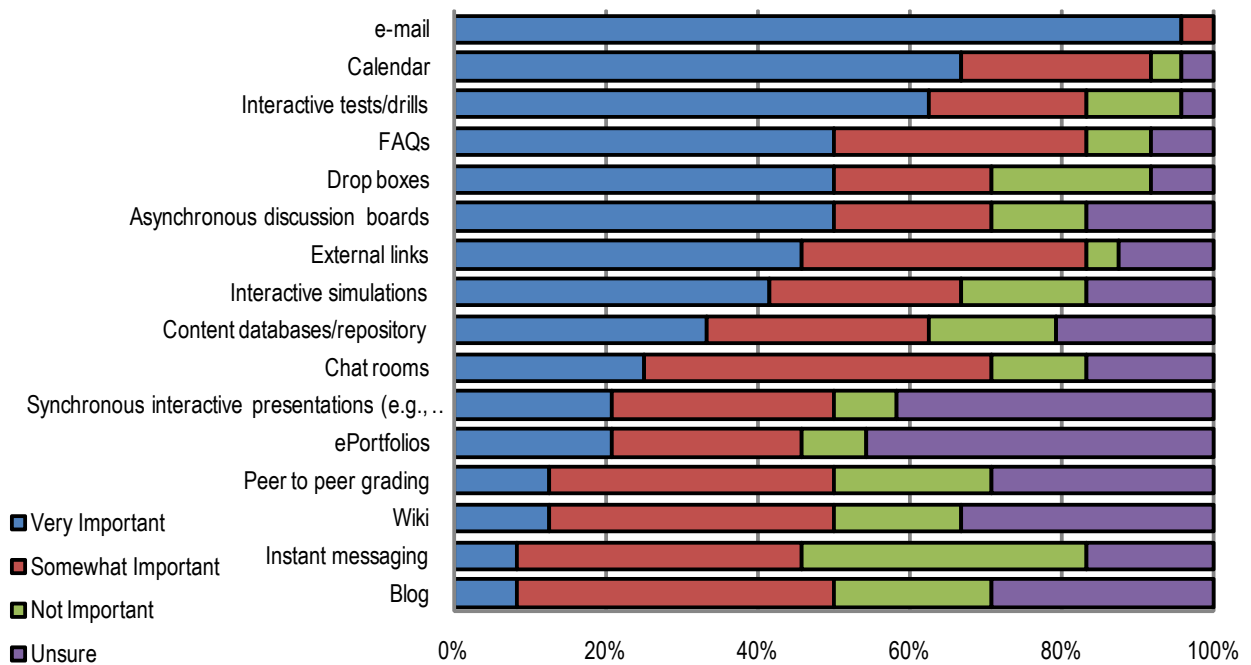
Question 18c

Currently: What is your reaction to the following?

Answer Options	Yes	No	Response Count
Students want online activities and/or learning resources for all courses	17	7	24
More complete online job-related certificate and degree programs are essential to attract and retain students	18	6	24
Online courses need more enhanced media and/or interactive elements	20	4	24
Online courses need more video and/or visual elements	22	2	24
Online resources and activities are equally important for distance and classroom instruction	22	2	24

For the future: What is your reaction to the following?

Answer Options	Yes	No	Response Count
More complete online job-related certificate and degree programs are essential to attract and retain students	19	5	24
Students want online activities and/or learning resources for all courses	20	4	24
Online courses need more enhanced media and/or interactive elements	21	3	24
Online resources and activities are equally important for distance and classroom instruction	22	2	24
Online courses need more video and/or visual elements	23	1	24
		answered question	**24**
		skipped question	**9**

Currently: What is your reaction to the following?
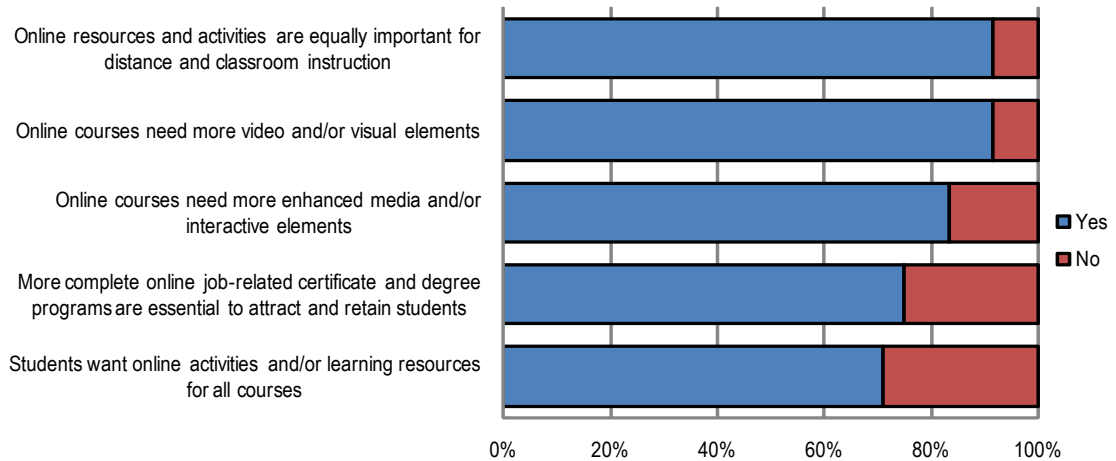
For the future: What is your reaction to the following?
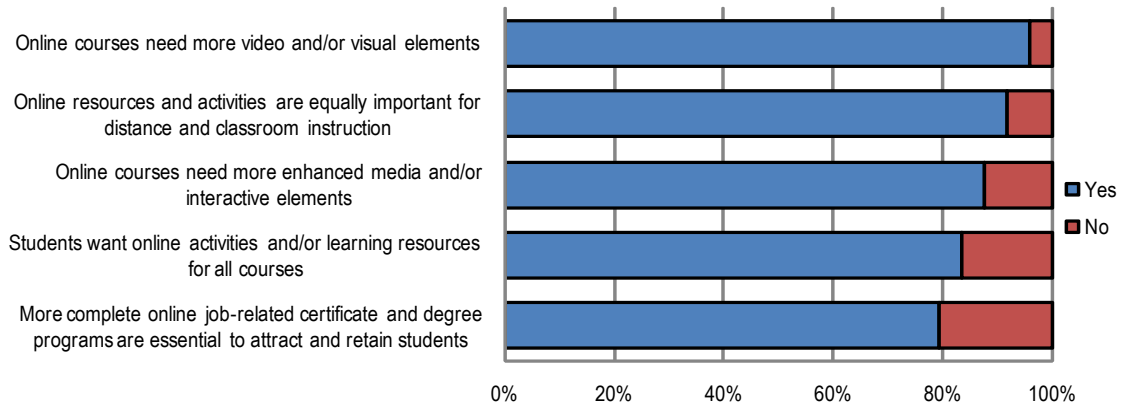
What do you value most about your teaching process, and how (in general) do you think technology can improve the student experience?

1. Ability to communicate with the students. Technology allows for more student interaction with
2. Above all, technology improves access to education for non-traditional students, and I value being able to provide education for these people.
3. Computers are a wonderful tool for my special education students to receive individualized one on one instruction, and receive stimulating feedback on the various programs.
4. Constant opportunities for students' interaction with the course content, interactive activities students can do both inside and outside of the classroom. Provide more computer labs or kiosks for student use. They must pay for a 1-unit class in order to use the computer lab at Garden Grove. Why isn't this open to all students?
5. Cost effective. Students get 'more bang for the buck' with DL as compared to the 'brick and mortar' campus.
6. Creativity and communication. Technology is excellent for communication and connection and provides an opportunity for students to increase their skills and confidence. This will help prepare them for more effective functioning in today's world.
7. Distance learning, TV presentations and other high technology media are very highly valued in the teaching process. Ease of delivery, visual, audio and immediate feedback through high technology improves the student experience.
8. Face time with students. Faster searches for information, but without plagiarism.
9. For some of the students, but not for all.
10. Getting to know my students and seeing them improve and the interaction I have with the students.
11. I am very glad to teach online and use the videos from YouTube, the interactive media offered by the Internet, and the museums, etc. that offer research for students.
12. I like the 1-1 capabilities of online teaching and requirements for all students to participate in "discussion"; the improved discussion board grading enables me to grade them more easily.
13. I teach all my courses on-line. Technology has really added to the student learning, and created much more work for me! I think information on plagiarism is very important--there should be a general learning component regarding plagiarism for all courses. I would like to see some security safeguards built into technology which would prevent cheating, as many of my quizzes are on line. How do I know, as a teacher, that the student is really completing the quiz?
14. I teach students how to draw what they see in their visual field. How to translate the 3-D of actuality onto a flat picture plane. I am a very hi-tech person with high end MAC/Photoshop related skills, but learning how to draw using technology that involves looking at a flat picture plane, whether its a page in a book or a computer retards my students progress and skills. Technology just isn't there yet - it has to be actual 3-D, even the finest state of the art digital imaging can't see how the human eye can - yet. Tech is great for email and doing discursive research, but when I teach an art history class I tell my students that unless they have been to the Vatican and seen the actual Sistine Chapel they have not seen anything - that a photograph of it isn't the thing itself - and to please not confuse the two. I think our society needs to be more aware of this - We confuse images of things with the actual thing itself. Technology can add to this confusion - or not...
15. I think once I get a grasp on Technology as it pertains to teaching I think that alone will enhance student's experience.
16. I value my ability to explain how to get organized and stay organized. I also value my ability to respond to students' questions quickly. It is important to me to teach students how to take tests and do well on them. I do this by giving them many, many opportunities to test, grade themselves, relearn concepts they missed, and retest. I value my ability to choose excellent textbooks for students.
17. I value my ability to latch onto students at whatever stage of learning I may be able to do the latching, to meet them beyond the boundaries of age or sex or culture of any kind, and to bring them into a new way of reasoning and thinking, to help them to feel and to see how 21st-century machines can be manipulated for world-opening, mind-enhancing, new experiences.
18. I value seaport very much as it has helped improve the student experience

19. I value the ability to utilize technology for clarification outside of face-to-face class. I just wish Seaport was more user friendly.....Blackboard is much better!
20. I value the face-to-face interaction in my teaching. Technology can improve my students' experience as a preparation for their entry into the working world or their future college classes. Some of them, however, do not have computers at home or have no internet access. This limits my ability to do whole-class activities with the internet.
21. I value the interactions between the students and myself. My courses are not online, but technology could help improve the student experience if it helped students find us and get into the system easily. I have had many complaints about how hard it is to register for classes and navigate our system. I have had many comments that it is not user friendly.
22. I'm all online, so it's incredible for me. Some of the above questions regarding "classroom" use, I was not sure how to answer because I'm online.
23. Individualized, flat socioeconomic model; good for equal access to school
24. Instructional videos
25. It is a great way to supplement my on site classes, providing them not only with all the materials they need to help them study outside of class, but also additional information that I don't have time to provide in class.
26. It is fluid and technology aids me in its ever changing fluidity.
27. It keeps the students engaged, and allows students to access their work 24/7
28. Live student/teacher interaction. I use technology to make class more interesting, varied approaches, etc.
29. More listening from a variety of speakers online or software.
30. My ability to deliver rich internet resources and be available to relate theory to practical via video conferencing.
31. Need reliable technology for students to be successful with a full range of teaching tools
32. Online instruction offers more flexibility of timelines for students and more immediate feedback for course work.
33. Seaport
34. Seaport is a great and very sophisticated CMS. Due the nature of the course I am teaching, I value all the features which can be used for enhancing communications among students and between students and instructors. The technology has changed students' learning significantly. It has also motivated students' learning in some sense.
35. Student and instructor access online and the flexibility that provides.
36. Students can access their courses at any hour of the day.
37. Students today are social media users. If Coastline can implement these resources into the distance learning activities, we will be better prepared to attract, retain and meet the needs of our students.
38. Teaching with technology is a must. We encounter technology in our everyday life
39. Technology can make learning fun and interesting. It makes learning more visual than conceptual.
40. Technology improves the student experience by allowing for virtual communities to present and discuss content
41. Technology must be available for instructors to create content and to instruct students anywhere, any time.
42. The best part of teaching is seeing students "get it." Since students each learn at different rates and in different ways, technology helps provide opportunities for each student to learn in their own way at their own pace.
43. The fact we can reach many students who cannot be in a classroom environment for variety of reasons, yet they are able to pursue their educational goals via online classes.
44. The interaction between students themselves and with the instructor. If is most gratifying to see students able to work together as a REAL team, not individuals putting together a project with no relationship to one another.
45. The teaching process involves giving students resources and opportunities to learn. My role is to facilitate that process. Technology is important because it can help create environments which are suitable for students to explore the materials on their own terms, while at the same time allowing communication and feedback with the instructor and fellow students.
46. Using new will always improve the student experience
47. When I can post mini-lectures, or sidebars, I will be able to offer expanded instruction/illustration of my topic material that students can play and re-play, to gain more in-depth knowledge without needing my personal attention (after class/office hour/email is presently how I handle this.) Students won't have to wait for an appointment to get and answer.

Please list exemplary/best practices the college should consider. Please indicate which suggestion the college should do first.

1. (1) A formula for tabulating SLOs is needed to make the process more meaningful and accurate.   (2) What additional components and/or activities would you like to see in Seaport (rank the importance of each item)? This is not a good survey question because faculty who are not tech gurus may not even know what these terms are referring to and so you need a column for N/O "no opinion"!
2. **(1) I like the way Michelle Ma and her staff use Twitter, Blogging, and Social Media to keep Coastline in front of people's eyes.   **(2) I feel Seaport is exemplary because its designers and programmers constantly assess faculty and students' requests and needs. **(3) I admire how our management, staff, and faculty make students feel like we truly value them and want them to succeed. All of these best practices are number 1s in my estimation.
3. Advanced gradebooks with upload capabilities and comments all in one. Tracking reports, journal, wiki, mashup and server space for file storage
4. As much as possible, keep up-to-date with computers and programs for both college employees and students.
5. Best Practice: Encouraging cooperation among students. Rationale: Include practices that provide opportunities for peer review for various assignments to include team projects where students are encouraged to share experiences and sources of information. This is in accord with Gibbons and Wentworth (2001) who stated that adult learners have a life-centered orientation to learning that is relevant and application-based. It can be concluded that as more adult students bring life experiences into the online environment, faculty should incorporate authentic experiences that are applicable to real world situations.
6. Coastline could better serve the returning students by offering regular training sessions in basic computer use, such as Microsoft Word, followed by open lab hours for students without their own computers. However, the labs would have to be kept up to date and running. If the software gets old and networks collapse at times, it's better not to attempt such a program.
7. Coastline should be listed as an institution that offers an on-line AA Degree and any changes required in curriculum should be made.
8. Everything that Coastline is doing with their ESL program is wonderful and I can't think of any other practices they could use at the moment.
9. Get bloody Seaport working. This is the WORST system I have ever used and I call for the resignation of the person and group who oversees this project.   A complete failure.   Best practice to consider is a revision to your current information technology system and stop talking, do something. Coastline is a joke when it comes to technology, stop this Dr. Adrian.
10. I am requiring a course "orientation quiz" for points. It means that students must carefully read the syllabus and FAQs. Still, there are students who DON'T take the orientation quiz, and they don't understand the basic principles of taking an online course or my "course rules" such as post by a deadline, or take the midterm by a certain date and time, or keep up on the readings. Perhaps the college could develop a general distance learning orientation as a voluntary activity; it might include "FAQ" type questions (how to study) and how to use the drop box. That way, students who have never taken a distance learning course will know what to expect.
11. I suggest that instructors be enabled to directly upload video clips (rather than submitting to tech people for upload) so I can immediately create a video clip on a hot topic, and share with the whole class. The present 'send to the tech dept. and let them post' procedure is an obstacle to rapid response. By the time I would get it posted, using current protocol, the teachable moment has passed, and the students' interest has moved on to a new topic.
12. I think the best practice is always how to assist students with learning so that the students' learning capacity can be reached higher and higher. I have really appreciated the school ISD department update the technology to better serving the students. I also appreciate the training the college has provided for professional development. Summer Institute is wonderful. Please keep it by all means.
13. If the college really values technology, a plan should be developed which includes training on a wide scale for all faculty, with time devoted during the Academic Year for introductory workshops, initial trainings, advanced trainings, and individual mentoring.
14. Improve the use of class room technology.

15. Lecture Practices: effective ways to present new information orally to fit differences in learning styles. At times information must be transmitted orally to a passive listening audience. But research has shown that after 10 to 20 minutes of continuous lecture, assimilation falls off rapidly. If the teacher must rely on the oral presentation of material, these techniques enhance learner retention. Lecture/Rhetorical Questioning: Talk in 7 to 10 minute segments, pause, ask pre-planned rhetorical questions; learners record their answers in their notes. Surveys with Exemplifier: Pause, ask directly for a show of hands: 'Raise your hand if you agree... disagree... etc.' or 'Raise your hand if you have encountered an example of that.' Ask for a volunteer to speak for the response group whose hands are raised. Turn To Your Partner And Pause, ask each to turn to the person next to them and share examples of the point just made or complete a given phrase or sentence. Halting Time (4): Present complex material or directions and then stop so learners have time to think or carry out directions. Visually check to see whether the class appears to understand. If they do, continue. Explication de Texte: By reading and analyzing passages from the text aloud, learners can see higher-order thinking skills and that 'criticism' is a participatory intellectual exercise. Guided Lecture: Students listen to 15-20 minutes of lecture without taking notes. At the end, they spend five minutes recording all they can recall. The next step involves learners in small discussion groups reconstructing the lecture conceptually with supporting data, preparing complete lecture notes, using the instructor to resolve questions that arise. Immediate Mastery Quiz: When a regular immediate mastery test is included in the last few minutes of the period, learners retain almost twice as much material, both factual and conceptual. Story Telling: Stories, metaphor, and myth catch people deeply within, so no longer are listeners functioning as tape recorders subject to the above information overload limits. What human beings have in common is revealed in myth; stories allow the listener to seek an experience of being alive in them and find clues to answers within themselves. The 10 to 20 minute limit no longer applies. Group Discussion Triggers: effective ways to present a common experience to engage a group in a discussion. Awareness of complexity and enhanced understanding result when learners discuss the meaning of events with each other. But to be successful, groups need a common experience to draw them into participation, establish a personal connection with the content, and provide a shared referent from which to exemplify their ideas. There are many kinds of triggers, but all are designed to precede group discussion. Participants, therefore, become connected with both a concrete example of the content and each other. Short Readings: Brief assignments to read in class (especially effective are contrasting viewpoints). First Person Experience: Works written in a personal voice, autobiographies, biographies, oral histories, diaries, and memoirs, when used as counterpoints to abstract texts, bridge the gap between their own lives and the content under study. Students more readily take part in discussions when they can personally relate to the material. Individual Task with Review: Problems to solve that apply the concepts presented. Students complete a worksheet or other task and compare the results with their neighbors before the whole class discusses the answers. Self-assessment Questionnaires: Short surveys of learner attitudes and values. Total Group Response: Human Graph: Learners literally take a stand on an imaginary graph or continuum. The first few volunteers justify their choice of position, and then the remainder of the class joins them without comment. Case Studies: A case study is the factual account of human experience centered in a problem or issue faced by a person, group or organization. It can raise a variety of complex issues and stimulate discussions of alternative viewpoints. Typically, case studies are written objectively and include a brief overview of the situation, its context, and the major decisions that must be made. Rather than expecting learners to have a right answer, learners develop their ability to articulate their thoughts, frame problems, generate solutions, and evolve principles that may apply to other situations. Visual Studies: Seeing first hand creates a common ground. Photographic essays, video programs, and personally made video recordings are examples of ways to bring into the classroom direct depictions of the concepts being discussed. Role Play: Learners explore human relations problems by enacting problem situations and then discussing the enactments. Together learners can explore feelings, attitudes, values, and problem solving strategies. It attempts to help individuals find personal meaning within their social world and resolve personal dilemmas with the assistance of the social group. Thoughtful Questions: effective ways to formulate questions that foster engagement and confidence. What does it mean to think? Some people would like to be able to think better, or, more usually, want other people's thinking to improve. But research shows that everyone is capable of thinking. The problem is to stop teachers from precluding the chance for it to happen. The right kind of questions opens the door to student's participation. The right questions focus the learner's attention upon applying their current understanding to the content or problem. The right questions are discoverable, that is, have follow-up

avenues that a teacher can follow to lead a student to find an adequate answer using resources available (Socratic). Each success on one of these problems is a lesson to the learner that he or she knows how to think. (And each failure, a lesson in the opposite.) Note that none of these tutorial questions asks for recall of facts or information (didactic questions). Discoverable Tutorial Questions: These eleven question formulations meet the criteria of being both perceptually based and discoverable. The responses to these questions lie shared experience, so all learners, who may not at first answer acceptably, can be led back to available evidence to find adequate answers. Description: What did you see? What happened? What is the difference between....? Reflection: What was interesting? What was surprising? Analogy: What else does it remind you of? What else does it look like? Common Purpose: What is the purpose of.....? What is the usual function of.....? Procedures: How does one normally do......? How was this done? What is the normal (non- creative) next step? Possibilities: What else could .....? How could we......? If we didn't have, or couldn't use, ...,what could........? Prediction: What will happen next? What will you see? What will be the effect? Justification: How can you tell? What evidence led you to.....? Theorizing: Why is it that way? What is the reason for it? Generalization: What is the same about .... and ......? What could you generalize from these events? What principle is operating? Definition: What does ...... mean? Define the word .... Wait Time: After posing one of these tutorials, learners need at least 5 seconds in order to process it and begin the formulation of an answer. Reflective Responses to Learner Contributions: effective ways to establish mutually beneficial communication by reflective listening. When a learner contributes to the discussion or asks a question, taking the initiative to learn, what is the best way to respond? To facilitate self-discovery and self-appropriated learning, effective teachers respond without changing the topic to share their own information or perspective from a posture of mutual respect, without domination. These three reflective responses, when used in sequence, constitute a responding convention, a standard way to develop habits of talking that release the potentialities of the learner and promote mutually significant sharing by both the teacher and the learner. Used in this order they sequence the amount of teacher control, starting with the lightest level. Paraphrase: While remaining alert to both the intellectual and emotional aspects of learner contributions, rephrase the underlying message the learner is sending in one's own words, not the learner's words. This especially applies when the learner says something new, something more than the commonplace. Avoid 'parroting' the learner's words or routinely beginning, 'I hear you saying.....' Both are irritating and condescending. Example: Student says, 'I am confused. I still don't know what you want from me.' Paraphrase: 'You see no way to start, huh?' Parallel Personal Comment: Without changing the topic or bending it in the slightest, talk about one's own current feelings or a past experience that matches exactly what the learner has said. The intention is to convey parallel aspects of yourself that validate the other's perspective or confirm your understanding of what the other is talking about. Usually statements start with 'I....' 'I was confused about that myself when I first read it.' 'I want to hear more about that.' Leading Query on Learner's Topic: Ask for clarification of aspects of the comment. Dig deeper into the student without bending or shifting it away to one's own agenda. Such responses include, 'Where does it break down?' 'Could you elaborate or give an example?' and references to others, 'Who can build on what she is saying?' Rewarding Learner Participation: effective ways to support learner actions with well-timed, encouraging positives. All teaching moves learners into areas of risk and incompetence. So often the job of a teacher is to find nascent deftness when it is easier to notice the maladroit. The methods chosen to administer those positives, however, send messages about what is important to achieve. Are learners supposed to work toward external approval...... or their own intrinsic betterment? Are grades the true reward......... or are learners supposed to learn to enjoy the quest itself? Teachers answer these questions through the manner in which they support improvement. The best rewards are not contrived, foster personal reflection and independence, and actually work, that is, learners maintain new abilities or do better. Effective teachers support emerging initiative, cooperation and perseverance with well-timed positives in these forms: Avoid Praise: Praise, the expression of judgment, is less successful in rewarding learner performance than the techniques listed below. It tends to foster approval seeking rather than independence. 'I like how complete this is.' (Implies pleasing me is important) 'Good question.' (Implies some other learner's questions are not good) 'That's a great welding job.' (Implies a learner should seek the teacher's approval versus 'a correct weld,' which is feedback, not praise) Description: Describe objectively those aspects of learner performance needing support. To avoid making a personal evaluation, state a culturally accepted conclusion a group of dispassionate observers would concede: 'You have addressed each item.' 'That question is probably shared by many here today.' 'That weld is just like the book.' Narration: Detail the action a learner takes

immediately as it occurs. Narrations usually begin with 'You ......' 'You're raising an issue that needs discussion.' 'You're obviously trying to fit the pieces together.' 'You remembered the first step.' Self-Talk: Talk about your own thoughts or prior personal experience. 'I have wondered that, too.' 'Questions like that have always intrigued me.' 'It took me four months to achieve a weld like that one.' Nonverbal: Communicate your recognition through body language and facial expressions. Smile broadly. Thumbs up. Move to convey excitement and enjoyment. Personal Feelings: Describe your emotional reactions as a participant learner, a member of the group, expressing deep, genuine, personal feeling. 'What a joy for me to listen to this discussion!' 'I am amazed by what you have done.' 'I wish I could wave a magic wand to make everyone do that well.' Intrinsically-Phrased Reward Statements: Positive expressions about emerging learner performance and achievement highlight internal feelings of self-worth and self-satisfaction. (Praise is an extrinsic judgment.) Enjoyment-'That was fun!' 'What a pleasure it must have been to do.' Competence-'You did it!' 'An accomplishment.' Cleverness-'That was tricky.' 'Intelligent.' 'Unique.' Growth -'You've taken a step forward.' 'What changes have occurred?' Active Learning Strategies: effective ways to foster active, constructive participation All research on people, and on their brains, shows we learn by doing. Learning is a Constructing process. Here are the choices available in the literature on teaching. The problem lies selecting the type of activity to match the purpose the teacher has in mind. Construction Spiral: Pose problem questions in a three-step learning cycle-(1) each individual writes down their thoughts, (2) all share in a small groups of three, and (3) compile the answer on the board in front of the whole class avoiding any evaluation or changes to what the class offers. Let the group correct itself. If weaknesses appear or more sophisticated understanding is needed, pose a second problem in the same manner. First questions usually begin at a reflex level to engage the students. Used to construct understandings and concepts. Round: Each person has a 2 or 3 minute opportunity to express his or her point of view on a given topic, or passes, while others listen. Used to elicit a range of viewpoints and build a sense of safe participation. Brainstorm: Solicit, and compile for all to see, alternative possibilities without judgments. Used to generate ideas, encourage creativity, involve the whole group, and demonstrate that people working together can create more than the individual alone. Writing in Class: Focus questions, in-class journals, lecture or reading summaries and in-class essays can improve the learning of the subject matter and, with clear objectives and feedback, improve writing skills, too. See also Classroom Assessment Techniques. Concept Models: Given handouts that ask a series of leading questions, students work in small groups to figure out how something works or build a conceptual model. They make their own diagrams and record their own observations. Workshop Biology Project, for example. Simulations and Games: By creating circumstances that are momentarily real, learners can practice coping with stressful, unfamiliar or complex situations. Simulations and games, with specific guiding principles, rules, and structured relationships, can last several hours or even days. Peer Teaching: By explaining conceptual relationships to others, tutors define their own understanding. Question Pairs-learners prepare for class by reading an assignment and generating questions focused on the major points or issues raised. At the next class meeting pairs are randomly assigned. Partners alternately ask questions of each other and provide corrective feedback as necessary. Learning Cells: Each learner reads different selections and then teaches the essence of the material to his or her randomly assigned partner. Examinations (18): Scheduling an exam stimulates learners to study. Completion, true-false, and multiple choice force memorization of facts and statements. Essay examinations force an overall general concept of the material. It is a rather obvious way to involve learners in doing something and getting them to think about what they are doing. Cooperative Group Assignments: ways to assign formal cooperative tasks. One form of active learning deserves special attention because it overtly places the learners as workers, demands that each process beliefs and construct expression with co-workers, and forces the achievement of a group goal. That interdependence affects three broad and interrelated outcomes: effort exerted to achieve, quality of relationships among participants, and psycho-social adjustment. Ninety years of research and 600 studies show cooperative learning tasks that have clear goals and performance measures result in more high-level reasoning, more frequent generation of new ideas and solutions, and greater transfer of what is learned within one situation to another. Cooperative learning groups embrace five key elements: positive interdependence individual accountability group processing social skills face-to-face interaction typically three to five learners work in heterogeneous groups. All cooperative designs have specific objectives, performance criteria and reward systems. In order for them to be successful, teachers must expect to spend time building cooperative skills and enforcing group self-assessment of them. Team Member Teaching: Knowledge Outcomes: Like a jigsaw puzzle, each member of the team is assigned a portion of the whole.

Ultimately responsible for knowing all, each group member teaches the others about his/her piece. Learners need explicit preparation in how to effectively communicate information to others. Team Effectiveness Design: Cooperative Skills and Knowledge Outcomes: Whatever material is to be learned is presented to teams in the form of a manuscript or text followed by a multiple choice test requiring conclusions or inferences, not locating information in the readings. After completing the test, learners join teams of five to discuss the questions and arrive at consensus as to the most valid answer to each question, without consulting the reading. Then a key is distributed and learners score individual answers as well as the team's. Student Teams-Achievement Divisions: Knowledge Outcomes: Learners study the material in heterogeneous groups as above, but instead of taking a test, learners play academic games to show their individual mastery of the subject matter. At a weekly tournament, learners are matched with comparably performing learners from other teams. Assignments to the tournament tables change weekly according to a system that maintains the equality of the competition. Performance Judging Design: Skill Outcomes: Here learners first study how to develop and apply appropriate criteria for judging performance on a skill, such as writing an essay, giving a speech, or constructing a tool chest. They test their cooperatively developed criteria on a product produced anonymously by someone else. Then the learners are assigned the task of creating their own product for other members of the team to review. Clarifying Attitudes Design: Attitude Outcomes: The teacher prepares an attitude questionnaire, usually a multiple choice inventory. Each learner selects from the range of alternatives those that most accurately represent his or her views. Next, teams meet to reach agreement on which of the alternatives represents the soundest action in a particular circumstance. They examine the differences between previous attitudes and discuss together how each may want to be consistent with the agreed-on description of the soundest attitude. Poster Sessions: Groups of three to five students each complete a poster or stand-alone display that conveys the group's work in (a) identifying and clarifying a controversial issue, (b) locating appropriate information and resources concerning their issue, and (c) critically evaluating the evidence they find. The posters are displayed in a public area of the college, so that not only can the students in the course learn from each others' work, students from other classes and other faculty can see it, too. Goals to Grades Connections: establish a logical agreement of goals and objectives, flowing to measures of performance, criteria, and grading. A formidable obstacle every teacher faces is how to analyze the content of a course, predetermine the outcomes desired, and communicate the necessary performance expectations to the learners in a detailed, congruous syllabus that logically connects goals to the measures for grades. That is, the objectives follow from the goals, the requirements are demonstrations of performance of those objectives, and the evaluation methods reflect attainment of the objectives to measurable criteria. This is rarely simple. At times teachers need their own cooperative learning groups in order to solve the myriad problems in coordinating course goals, uncovering the traditional discontinuities between goals and grading, and achieving assessment clarity. These are the basic criteria for the task: Goals Stated as Outcomes, Not Processes (25): Goals for the course are agreed to by the other faculty in the instructional unit to achieve outcomes desired from an integrated program of study. Process statements, such as 'students will participate in....' or 'students will undertake...' are avoided. Outcomes say that, at the end, students will be capable of doing 'x.' Objectives are Performances (26): Performances are actual behaviors or classes of behaviors that indicate the presence of the alleged ability that generally are agreed upon by the faculty of the instructional unit. These are the abilities that constitute each goal. Each is formulated using active, measurable verbs from Bloom's Taxonomy (knowledge, comprehension, application, analysis, synthesis, evaluation) and placed at the level of the taxonomy that reflects the amount of time allocated. Requirements are Detailed in Writing: All desired learner outputs, including the criteria for success and relative weights, are clearly specified to learners in advance. Grades are Referenced to Criteria (27): Learner achievement is measured with respect to a specified standard of quality, on a continuum from zero to perfection, not a percentage comparison to other learner's achievements. Modeling: represent openness, continuous learning, and trust. As a paragon of personal development, a teacher faces interpersonal challenges in every action he or she takes to engage, facilitate, catalyze, and give life to the opportunity to learn. Great teachers teach by example. It is the authentic life that instructs. These attitudinal qualities of being connected to learning in delight, illumination, and even rapture have been described in many ways, but none clearer perhaps than by Carl Rogers. (28) Openness to Experience in the Here and Now: Being truthful, personally in touch with one's own feelings and current experience. Incorporation into Oneself of the Process of Change: Openness to learning opportunities, belief in oneself as an effective learner, and modeling learning, and its accompanying mistakes,

visibly to learners. Unconditional Positive Regard for Others: Deep trust in the underlying goodness of each person, despite how they appear, and the explicitly expressed belief in each learner's ability to learn and grow. Double Loop Feedback: facilitating mutual awareness of how one learns to learn The times when the teacher should correct performance are often the most difficult as well as the most significant. It is easier to identify errors and deficiencies in the actions of others than to communicate them in a way that continues their willing engagement in correcting them. Because people rarely produce actions that do not make sense to them (they act intentionally), they naturally tend to become defensive, confused, or ashamed when criticized or given advice. Yet individualized correction is often the key to improved performance. An effective feedback procedure should enable reflection and self-correction without fostering hostility or defensiveness. Double loop feedback (29) is a method of providing correctives in a way that maintains the learner's continued engagement in the process of acquiring competence and self-confidence. It sequences the statements teacher's make by starting with least inferential and examining both the learner's performance and the evaluator's assumptions at each stage. In double loop learning an open-ended cycle is created where the teacher and the learner cooperatively examine both the learner's performance and the underlying perspectives the teacher brings to regard that performance. Optimal correction is possible when both parties responsibly work for error detection at each level of inference before proceeding to the next. In other words, get the facts right first; then work to agree upon what 'most people' would agree those facts to mean. As opposed to the natural tendency to think of judgments and opinions first, this procedure holds them in abeyance. Step 1. Objective Description of Physical Reality: State the facts as you see them: 'There are 14 misspelled words here.' 'Since I assigned the class the task, you have asked me four questions.' 'You pointed your finger at the person you addressed.' Get agreement before proceeding any further, for correcting errors may not be possible unless both parties agree to a common set of facts. Step 2. Culturally Accepted Meaning: Describe what a jury or group of informed spectators observing the event would conclude and check that generalization: 'It hasn't been spell-checked. That true?' 'You are using me as the first resource not the handouts or your friends, huh?' 'Wouldn't most people conclude that your non-verbal gesture implies an adversarial rather than cooperative stance?' Again, get agreement. Usually the learner will either justify or correct when the behavior is recognized as holding an accepted meaning. This level of inference is the same used by journalists and anthropologists to describe events and actions as viewed from a culturally specific viewpoint. That viewpoint, too, is also suspect and, to be fair, should be examined simultaneously----thus the term double loop. Step 3. Judgments and Personal Reality: After the above have been discussed and agreed upon, the judgments of both parties can be stated without inducing animosity or defensiveness. People naturally attach meaning to events in accord with their own life experiences. Nothing is wrong with this, but these opinions are unreliable. By keeping them out of the feedback discussion, both parties can attach meaning to events with greater reliability, often without judgments ever entering into the discussion. At times it may be wise to check first with the recipient before moving into this stage: 'Would you like my opinion?' 'That many mistakes imply you don't care if it is ever read.' 'I would like to see you find more answers independently.' 'Your message is more likely to be heard if you speak about yourself instead of attacking others.' Climate Setting: regulate the physical and mental climate. A large portion of teaching effectiveness involves setting the stage. The task of getting everyone comfortable enough to learn comes with the territory. Solve comfort issues first and the learning path is smoother. Research shows that successful teachers spend 10% of classroom time optimizing the arrangement of the physical setting as well as the psychological setting-a climate of collaboration, support, openness, pleasure, and humanity: Meet the Learner's Needs for Physical Comfort and Accessibility: Insure a comfortable environment where basic needs for all learners are met: lighting, heat, seating, quiet, etc. Define Negotiable and Non-negotiable Areas: Clearly specify those aspects of class performance that are the instructor's responsibility, such as essential procedures, external constraints, performance requirements (such as attendance, assignments), and summative evaluation - and those parts of the course that have mutual and negotiable responsibility (such as seating arrangements, breaks, groupings). Clarify the Instructor's Role: Impart the explicit assumption that the teacher is here to facilitate learning by providing resources, tasks, and support. The teacher is not the fount of all knowledge. The teacher trusts the learners to want to learn and therefore will take responsibility for their own learning. Students answer the question, "In order to make this learning opportunity the best for me, what would I like to see the instructor do?" The task is to achieve consensus on what role the instructor will take. Clarify the Learner's Role as Members of a Learning Community: Clarify expectations the learners have for the instructor and expectations they have for establishing constructive

relationships with each other. Students answer the question, "In order to make this learning opportunity best for me, what would I like to see my classmates do?" The class arrives at consensus on what obligations and responsibilities are expected by others. Fostering Learner Self-Responsibility: allow learners to plan and evaluate much of their learning. Effective teachers offer ways for the learners to take an active role, for at least a portion of the course, in diagnosing their learning needs, formulating learning goals, identifying human and material resources for learning, choosing and implementing appropriate strategies, and evaluating the outcomes. (31) Involve Learners in Mutual Planning: People tend to feel committed to any decision in proportion to the extent to which they have participated in making it. Involve Learners in Diagnosing Their Own Needs for Learning: A problem to solve is meshing the needs the learners are aware of (felt needs) with the needs their organizations, vocation, or society has for them (ascribed needs). One method is to present a model of competencies, which reflects both personal and organizational needs, so that the learners can identify the gaps between their current performance and where the model specifies they need to be. Another method is to compile the totality of learner understandings (and misunderstandings) about the current topic, have them represent their experience in some tangible form, and then develop questions that come to mind. These questions then can guide further inquiry. Involve Learners in Formulating Their Learning Objectives: Promote attainment of at least a portion of the course requirements through flexible contracts by which the learner: translates a diagnosed learning need into a learning objective, identifies, with help, the most effective resources and strategies for accomplishing each objective, specifies the evidence that will indicate accomplishment, and specifies how this evidence will be judged or evaluated. Involve Learners in Evaluating Their Learning: Teachers and learners together work to find out what learning occurs within the unique context every course presents. Classroom Assessment Techniques gather information to guide the adjustments both teachers and learners need to make to improve learning. (32) In the end, if people are to become independent, lifelong learners, they must learn to take full responsibility for their learning.

16. Make sure that all classrooms have Smartboards.
17. More collaboration to share resources and ideas, particularly between instructors. More opportunities for students to engage actively with the material through interactive exercises and project based learning.
18. More technology training and provide working technology in the classrooms.
19. Multiple-platform simultaneity Transdisciplinary work
20. Not sure at this point. I would like to see some additional technology training regarding video conferencing, virtual office hours.
21. Not sure, different disciplines have different needs and use cases.
22. Offer the majority of courses in DL, minority at 'brick and mortar' campus.
23. Online instruction should continue to foster learner self-responsibility and it should build for each course the learner completes. Receiving learner feedback for each course often before the course is completed is key to this success so instructors can assess what works and make adjustments accordingly.
24. Provide appropriate and current equipment and software for faculty. Provide technology education to optimize participation and effectiveness. Inform and invite faculty to use new technology through comprehensive e-mails with examples, videos, etc. Provide education for new technology at instructor's office.
25. Provide peer-to-peer assistance using paid tutors with the latest in online instructional technology including webcams and online meeting software.
26. Quiz server should have categories instead of one long list; we should be able to upload our own videos,
27. Require all online students to start the class by introducing themselves in the online forum, then respond to every student to make them feel like they are really part of a class not just a number.
28. Switch to Blackboard!
29. The college should offer a "Summer Institute" for students as well as for instructors. The college should consider a "kiosk" kind of interactive computer on each campus for students to "self scroll" view the college course offerings.
30. The one on one contact, a lot of students do better by it.
31. Use of consistent grading rubrics to compare outcomes across assignments
32. You are doing a good job

Appendix II: Part 4. Management Technology Survey 2010-2011: Responses

Question 1

What is your gender?

Answer Options	Response Percent	Response Count
Male	50.0%	10
Female	50.0%	10
	answered question	20
	skipped question	0

What is your gender?

- Male
- Female
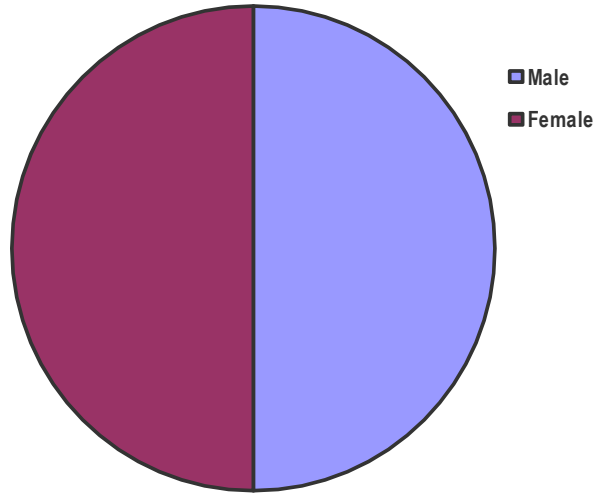
Question 2

What is your age range?

Answer Options	Response Percent	Response Count
Under 30	0.0%	0
30 - 45	30.0%	6
Over 46 - 60	55.0%	11
Over 60	15.0%	3
No Comment	0.0%	0
	answered question	20
	skipped question	0
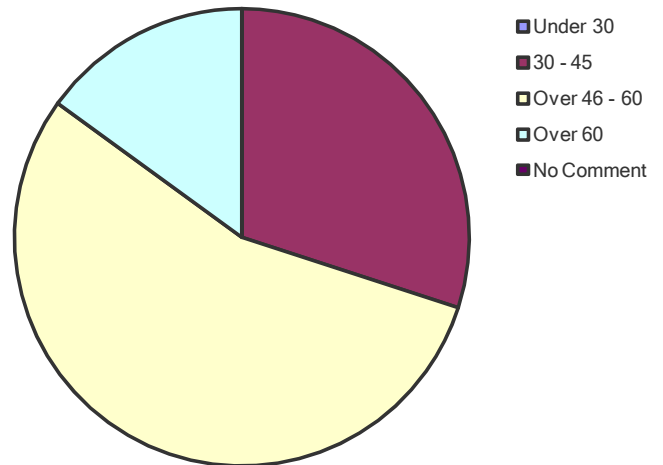
What is your age range?

- Under 30
- 30 - 45
- Over 46 - 60
- Over 60
- No Comment

Question 3

How many years have you worked at Coastline Community College?

Answer Options	Response Percent	Response Count
Less than 1 year	10.0%	2
1-2 years	0.0%	0
3-5 years	5.0%	1
6-10 years	25.0%	5
over 10 years	60.0%	12
answered question		20
skipped question		0

How many years have you worked at Coastline Community College?

- Less than 1 year
- 1-2 years
- 3-5 years
- 6-10 years
- over 10 years
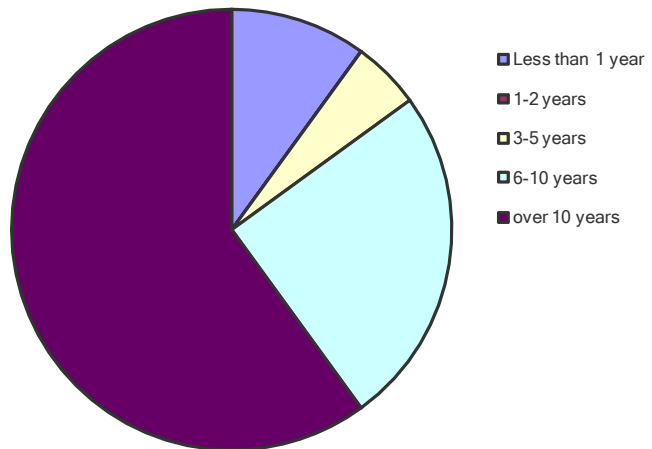
Question 4

How long have you been a manager/administrator (select one)?

Answer Options	Response Percent	Response Count
Less than 1 year	0.0%	0
1-2 years	0.0%	0
3-5 years	10.0%	2
6-10 years	25.0%	5
Over 10 years	65.0%	13
answered question		20
skipped question		0

How long have you been a manager/administrator?

- Less than 1 year
- 1-2 years
- 3-5 years
- 6-10 years
- Over 10 years
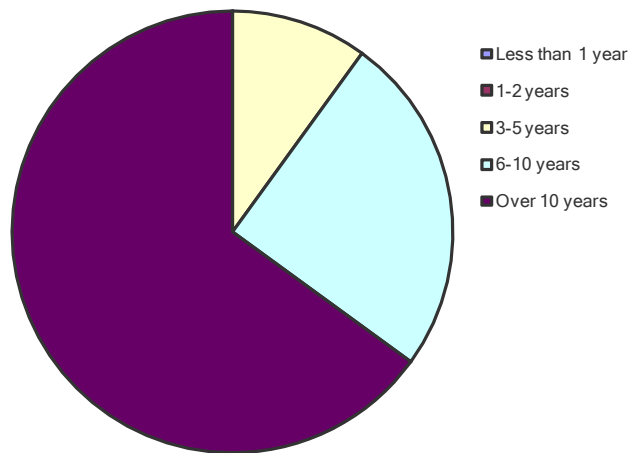
Question 5

What type of computer/s and peripherals do you use at home (select all that apply or skip if none)?

Answer Options	Response Percent	Response Count
Desktop	73.7%	14
Laptop	68.4%	13
NetBook	21.1%	4
iPad	10.5%	2
eBook Reader	10.5%	2
Scanner	42.1%	8
Desktop Video Camera	31.6%	6
Head Phones	47.4%	9
answered question		19
skipped question		1

What type of computer/s and peripherals do you use at home?
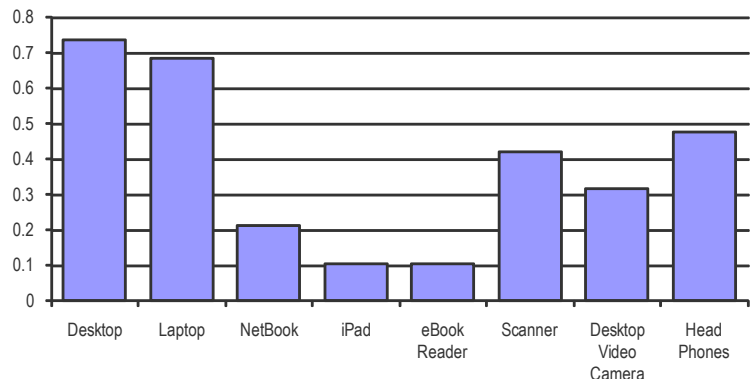
Question 6

What operating system/s do you use at home (select appropriate answer for each drop-down box or skip if none)?

Answer Options	Windows XP	Windows Vista	Windows 7	MacOS	Android	Linux	Other	Don't know	NA	Response Count
Desktop	6	2	5	2	0	0	0	0	0	15
Laptop	3	1	6	2	0	0	0	0	2	14
Netbook	3	0	3	0	0	0	0	0	3	9
TabletPC	0	1	0	0	1	0	0	0	3	5
									answered question	19
									skipped question	1

What operating system/s do you use at home (select appropriate answer for each drop-down box or skip if none)?
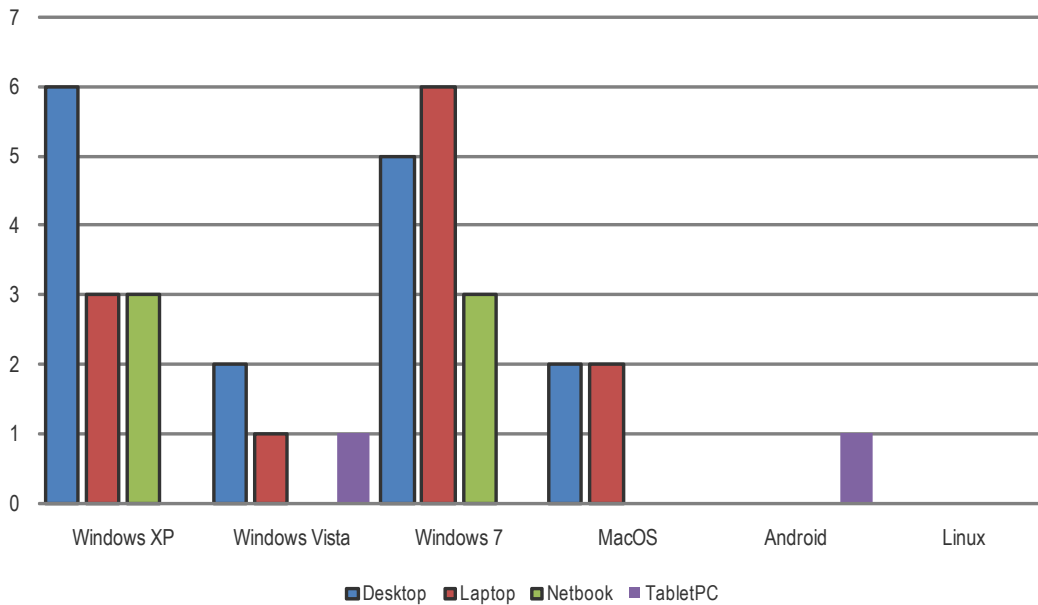
Question 7

What type of internet service do you use at home (if none select no access, if you use more than one service select as many answers as appropriate)?

Answer Options	Response Percent	Response Count
No access	10.0%	2
Dial-up modem	0.0%	0
Digital subscriber line (DSL)	25.0%	5
Cable modem	60.0%	12
Satellite (HST)	0.0%	0
Cellular	0.0%	0
T1 line Wireless	10.0%	2
answered question		20
skipped question		0

What type of internet service do you use at home (if none select no access, if you use more than one service select as many answers as appropriate)?
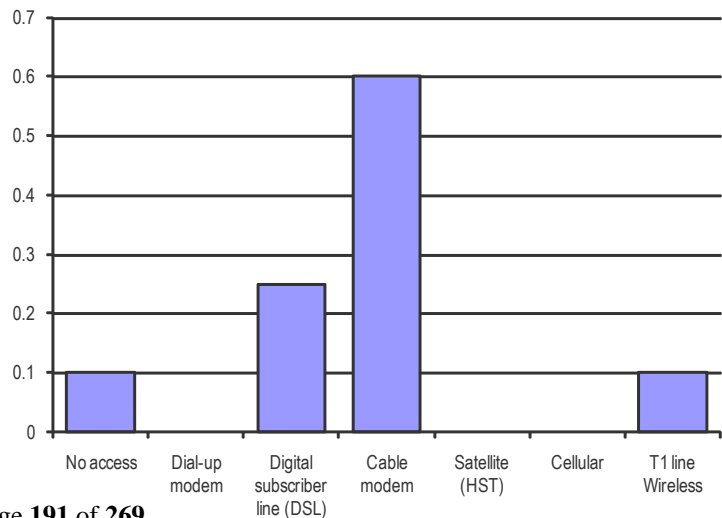
Question 8

What Internet browser/s do you use at home and work (select as many answers as appropriate from each column or skip if none)?

Answer Options	Home	Work	Response Count
1) Internet Explorer	17	16	19
2) Google Chrome	5	1	5
3) Mozilla Firefox	4	7	7
4) Opera	1	0	1
5) Safari	4	2	5
Other (please specify)			0
		answered question	**19**
		skipped question	**1**

What Internet browser/s do you use at home and work?
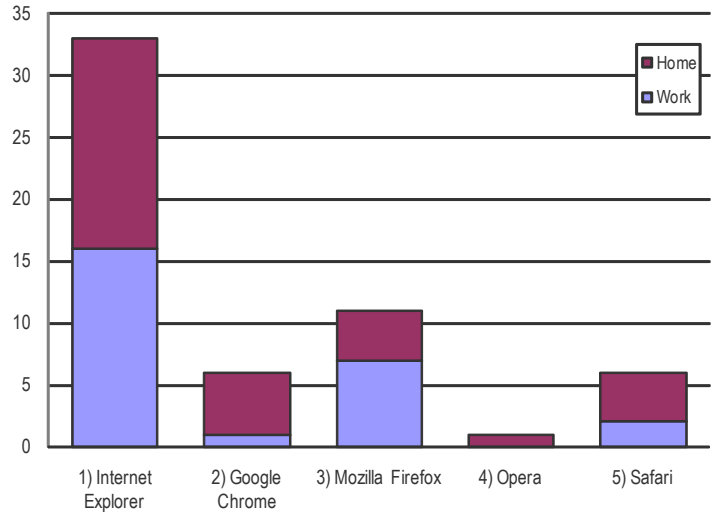
Question 9

What dedicated hand-held multimedia players do you use? Do you use them for managing your department, entertainment, and/or learning? (please indicate the best answer for each drop-down box)

Use for Managing Department

Answer Options	Yes	No	What is it?	Response Count
iPod (Shuffle, Touch, Nano, etc.) to	0	11	0	11
eBook Reader (Kindle, Sony, Barnes and Noble, etc.)	0	11	0	11
Palm PDA (non-phone) Pocket PC Windows PDA (non-phone)	5	7	0	12
MP3/MP4 Player (Sansa, WalkMan, Zune, etc.)	0	11	0	11
MP3/MP4 Recorder (Zune, Samsung, etc.)	0	11	0	11
Internet Tablet (Archos)	1	10	0	11
Satellite Radio (Syrius or XM)	0	11	0	11

Use for Entertainment

Answer Options	Yes	No	What is it?	Response Count
iPod (Shuffle, Touch, Nano, etc.) to	11	2	0	13
eBook Reader (Kindle, Sony, Barnes and Noble, etc.)	3	8	0	11
Palm PDA (non-phone) Pocket PC Windows PDA (non-phone)	4	8	0	12
MP3/MP4 Player (Sansa, WalkMan, Zune, etc.)	5	7	0	12
MP3/MP4 Recorder (Zune, Samsung, etc.)	1	11	0	12
Internet Tablet (Archos)	1	10	0	11
Satellite Radio (Syrius or XM)	5	9	0	14

Use for Learning

Answer Options	Yes	No	What is it?	Response Count
iPod (Shuffle, Touch, Nano, etc.) to	4	8	0	12
eBook Reader (Kindle, Sony, Barnes and Noble, etc.)	4	7	0	11
Palm PDA (non-phone) Pocket PC Windows PDA (non-phone)	2	10	0	12
MP3/MP4 Player (Sansa, WalkMan, Zune, etc.)	0	11	0	11
MP3/MP4 Recorder (Zune, Samsung, etc.)	0	11	0	11
Internet Tablet (Archos)	1	10	0	11
Satellite Radio (Syrius or XM)	0	11	0	11

answered question   **15**

skipped question   **5**

What dedicated hand-held multimedia players do you use to manage your department?
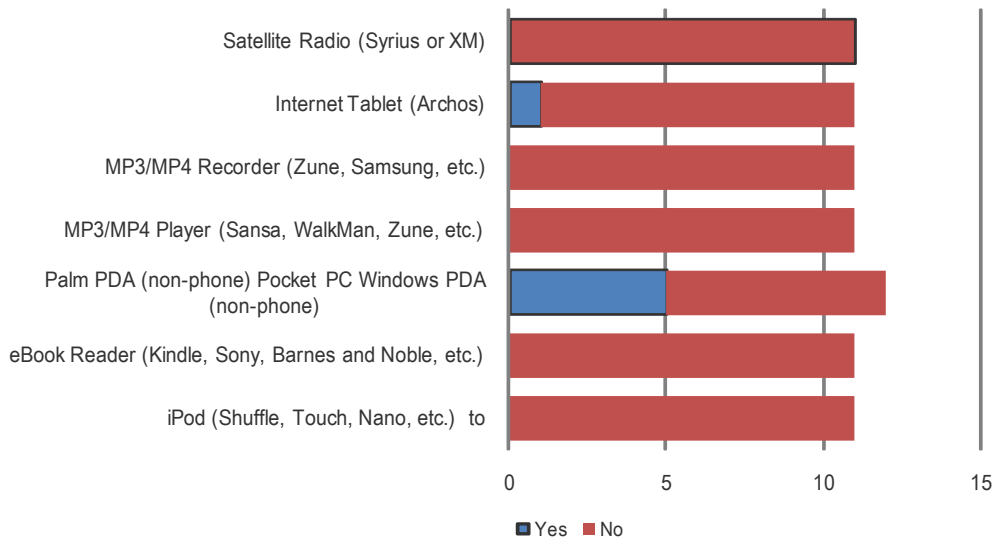
What dedicated hand-held multimedia players do you use for entertainment?
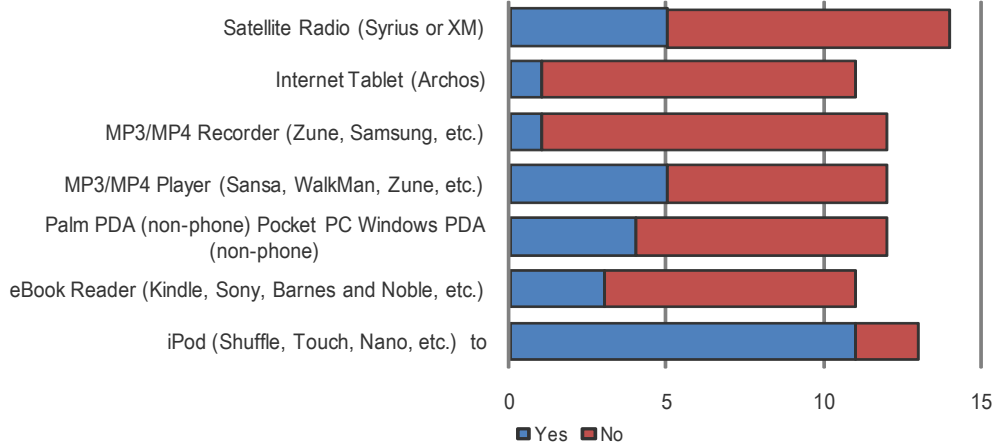
What dedicated hand-held multimedia players do you use for learning?
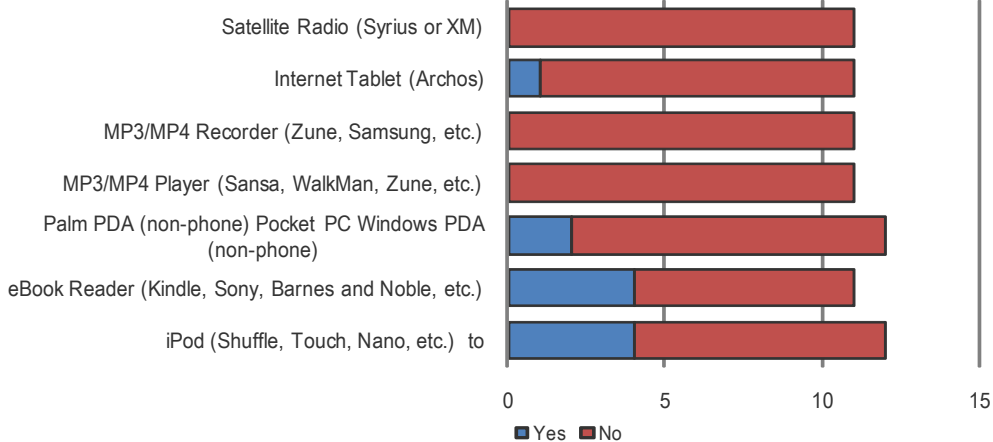
Question 10

Rank the importance of the following technology initiatives the college should address over the next 5 years.

Answer Options	Low	Below Average	Average	Above Average	High	N/A	Rating Average	Response Count
Incorporation of social networking software strategies into college courses/processes (Facebook, Twitter, blogs, etc.)	0	4	10	2	3	0	3.21	19
Lecture capture and automated distribution systems (POD/VOD Casting)	0	2	9	4	2	2	3.35	19
Live conferencing options for meetings and/or instruction (Elluminate, Connect Pro, SKYPE, etc.)	0	2	8	8	1	0	3.42	19
Online 24/7 student helpdesk	0	1	6	9	3	0	3.74	19
Virtual simulations for local and remote access (i.e., laboratory simulations)	0	2	5	6	6	0	3.84	19
Electronic textbooks	0	2	3	7	7	0	4.00	19
Small device convergence support and services (smart-phone, PDA/cell access to college information, courses,	0	1	5	6	7	0	4.00	19
Interactive and self-paced online tutoring support	0	1	2	11	5	0	4.05	19
Automated/online self-help graduation road map for degree plans and course choices	0	1	1	6	11	0	4.42	19
Increased Wi-Fi access for students, staff, and faculty	0	0	2	5	12	0	4.53	19
Faculty/staff training to use new and emerging technology	0	0	1	5	13	0	4.63	19
Improved and expanded automation of college processes/services (targeted at cost, self-help, and efficiency	0	0	1	5	13	0	4.63	19
Other (please specify)								1
							answered question	**19**
							skipped question	**1**

Rank the importance of the following technology initiatives the college should address over the next 5 years.

Question 11

To what degree do the following factors influence your use of technology in your department's activities?

Answer Options	Low	Below Average	Average	Above Average	High	N/A	Rating Average	Response Count
Desire to keep up with other programs or organizations	0	4	4	2	9	0	3.84	19
Organizational culture which encourages the use of information technology	0	0	9	3	7	0	3.89	19
Desire to facilitate communication and collaboration with other departments	0	2	5	4	8	0	3.95	19
Students' familiarity with technology	0	2	2	7	6	2	4.00	19
Desire to keep up with trends in higher education	0	1	5	5	8	0	4.05	19
Ability to increase staff or student access to services	0	0	3	8	8	0	4.26	19
Belief that staff familiarity with technology will improve services and improve	0	0	4	6	9	0	4.26	19
Ability to provide services or products more efficiently	0	0	0	10	9	0	4.47	19
Ability to facilitate communication between staff, managers, and students	0	0	1	7	11	0	4.53	19
Ability to create or expect higher quality work	0	0	0	6	13	0	4.68	19
							answered question	**19**
							skipped question	**1**

To what degree do the following factors influence your use of technology in your department's activities?
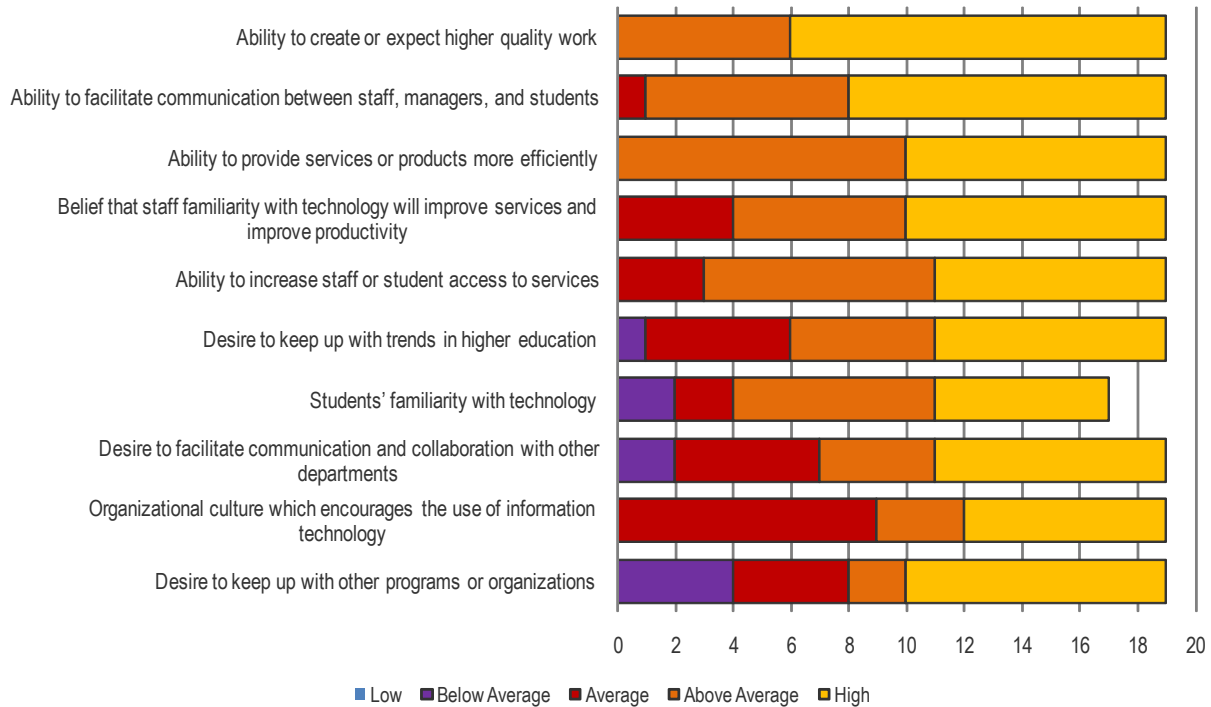
Question 12

How much of a barrier are the following to your department's use of technology?

Answer Options	Low	Below Average	Average	Above Average	High	N/A	Rating Average	Response Count
Don't know how to get started	7	3	3	1	2	3	2.25	19
Question usefulness in my department	4	4	5	2	1	3	2.50	19
Computer crashes, programs failing to run properly	1	4	10	3	0	1	2.83	19
Student access to technology	0	6	6	2	1	4	2.87	19
Inadequate technical support for you	2	5	5	4	3	0	3.05	19
Inadequate technical support for your staff	2	6	2	6	3	0	3.11	19
Lack of necessary technical skills	0	7	5	5	2	0	3.11	19
Access to technology-enhanced facilities	1	4	6	7	1	0	3.16	19
Lack of on-site support	2	2	7	5	2	1	3.17	19
Network/Internet connection problems	1	3	8	5	2	0	3.21	19
Lack of current hardware and/or software	0	3	9	4	2	1	3.28	19
Time required to learn about technology	1	1	7	6	4	0	3.58	19
Time required to research, adopt, and use	0	4	4	6	5	0	3.63	19
Lack of money to fund new initiatives	1	1	3	2	11	1	4.17	19
						answered question		**19**
						skipped question		**1**

How much of a barrier are the following to your department's use of technology?
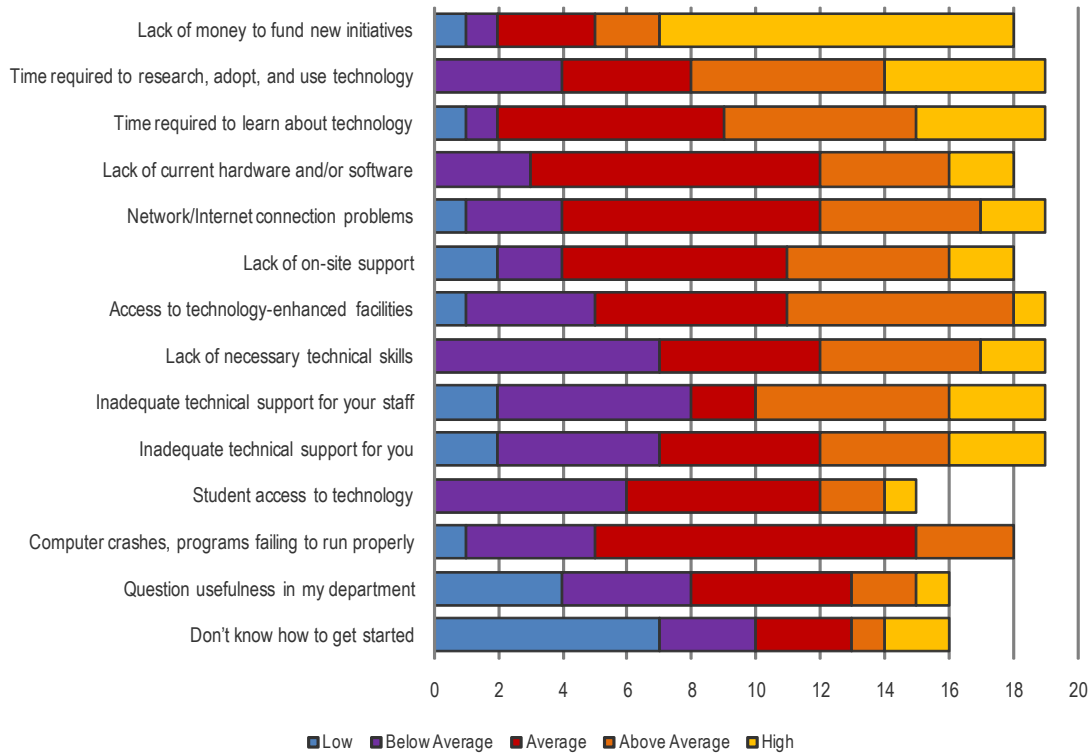
Question 13

How important are the following technologies (hardware, software, infrastructure, systems, and support) to you and your department and how prepared is your department to use them?

Importance

Answer Options	Very Important	Above Average	Average	Below Average	Not Important	No Opinion	Response Count
accomplishing institutional strategic planning initiatives, CCC mission, and/or departmental goals?	3	5	9	2	0	0	19
helping your staff access, analyze, and use information?	5	9	4	1	0	0	19
providing your staff with resources, assistance, and/or training to use technology to conduct research?	6	7	5	0	1	0	19
communicating and interacting with staff and management?	7	7	4	1	0	0	19
collaborating with peers, work teams and/or committees?	7	7	5	0	0	0	19
inspiring co-workers and staff to use creative solutions and/or approaches?	7	8	3	0	1	0	19
presenting and/or managing information?	8	9	2	0	0	0	19
helping staff solve new challenges and/or problems?	8	8	3	0	0	0	19
developing programs and services?	8	6	3	0	1	1	19
helping improve effectiveness and achieve department goals and objectives?	9	6	3	1	0	0	19

Preparedness

Answer Options	Very Prepared	Above Average	Average	Below Average	Not Prepared	No Opinion	Response Count
developing programs and services?	0	10	8	0	0	1	19
providing your staff with resources, assistance, and/or training to use technology to conduct research?	0	7	9	2	1	0	19
helping staff solve new challenges and/or problems?	1	8	8	2	0	0	19
inspiring co-workers and staff to use creative solutions and/or approaches?	1	8	7	2	0	1	19
helping your staff access, analyze, and use information?	1	8	7	3	0	0	19
accomplishing institutional strategic planning initiatives, CCC mission, and/or departmental goals?	2	5	9	3	0	0	19
helping improve effectiveness and achieve department goals and objectives?	2	8	7	2	0	0	19
presenting and/or managing information?	4	8	6	1	0	0	19
communicating and interacting with staff and management?	5	5	8	1	0	0	19
collaborating with peers, work teams and/or committees?	5	5	7	2	0	0	19
						answered question	**19**
						skipped question	**1**

How important are the following technologies to you and your department?

Legend: ■ Very Important ■ Above Average ■ Average ■ Below Average ■ Not Important

How prepared is your department to use the following technologies?

Legend: ■ Very Prepared ■ Above Average ■ Average ■ Below Average ■ Not Prepared
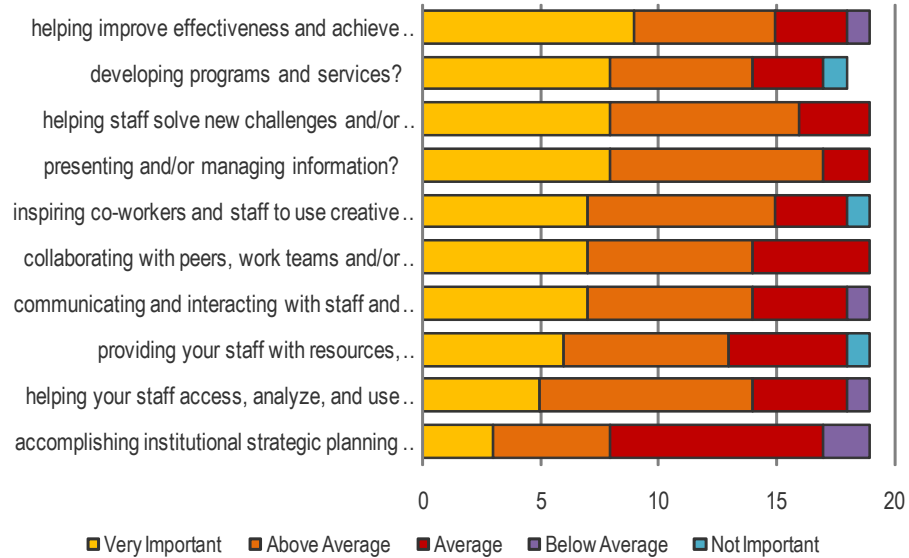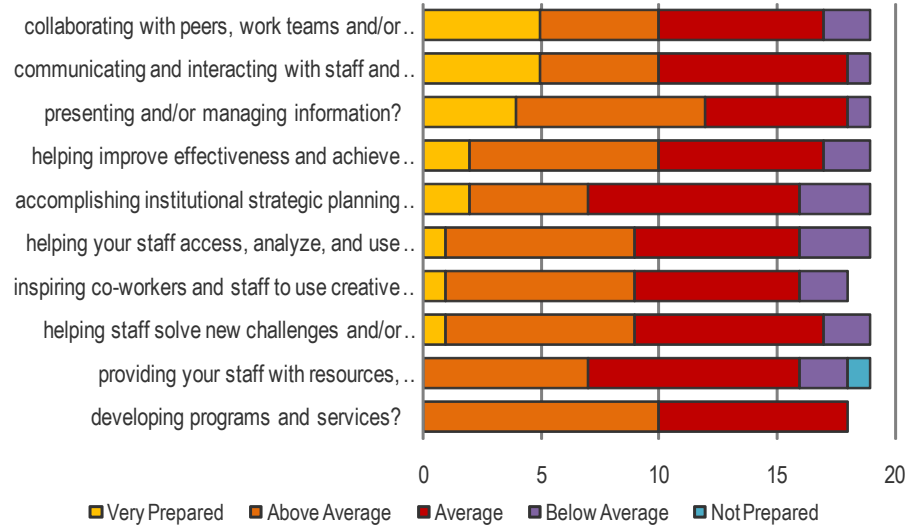
Question 14

Are you familiar with Seaport's purpose and function?

Answer Options	Response Percent	Response Count
Yes	73.7%	14
No	26.3%	5
answered question		**19**
skipped question		**1**

Are you familiar with Seaport's purpose and function?
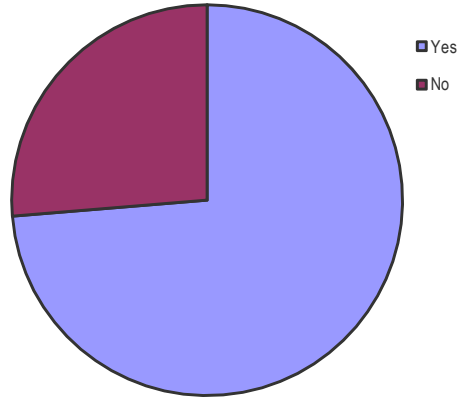
Question 15

Rate the importance of the following for Face-to-Face Classes, Hybrid Classes, and Face-to-Face Classes

Answer Options	Very important	Average importance	Unimportant	No Opinion	Response Count
Online syllabus	9	1	0	3	13
Online grading metric	7	2	1	3	13
Instructor introduction	8	2	0	3	13
Video lectures/demonstrations	4	2	3	4	13
Interactive applets	2	5	2	4	13
Discussion forum	4	4	2	3	13
Presentations/lectures	9	0	0	4	13
Audio resources	2	5	3	3	13
Simulations	3	4	2	4	13

Hybrid Classes

Answer Options	Very important	Average importance	Unimportant	No Opinion	Response Count
Online syllabus	9	1	0	3	13
Online grading metric	8	2	0	3	13
Instructor introduction	8	2	0	3	13
Video lectures/demonstrations	6	2	1	4	13
Interactive applets	4	5	0	4	13
Discussion forum	6	4	0	3	13
Presentations/lectures	7	2	0	4	13
Audio resources	4	5	1	3	13
Simulations	6	1	2	4	13

Online Classes

Answer Options	Very important	Average importance	Unimportant	No Opinion	Response Count
Online syllabus	10	0	0	3	13
Online grading metric	10	0	0	3	13
Instructor introduction	9	1	0	3	13
Video lectures/demonstrations	8	1	0	4	13
Interactive applets	7	1	1	4	13
Discussion forum	7	3	0	3	13
Presentations/lectures	7	2	0	4	13
Audio resources	7	2	1	3	13
Simulations	6	2	1	4	13
				answered question	13
				skipped question	7

Rate the importance of the following for Face-to-Face Classes using Seaport.
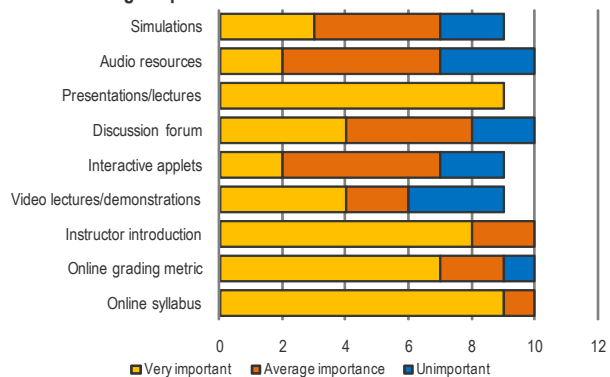
Rate the importance of the following for Hybrid Classes using Seaport.
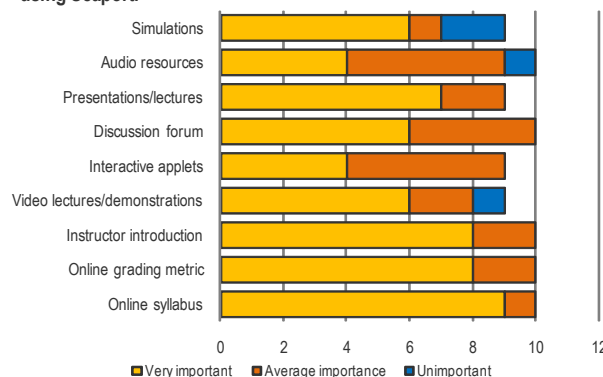
Rate the importance of the following for Online Classes using Seaport.
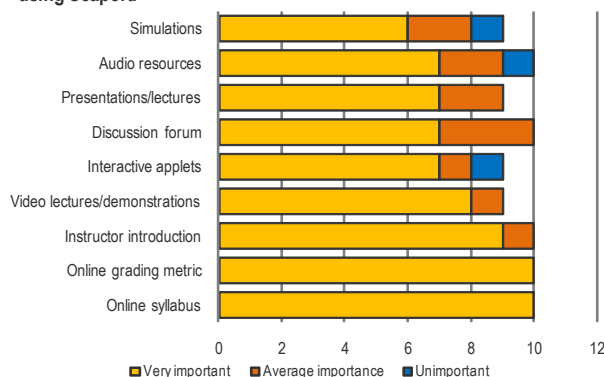
Question 16

What additional components and/or activities would you like to see in Seaport (rank the importance of each item)?

Answer Options	Low	Below Average	Average	Above Average	High	N/A	Rating Average	Response Count
Blog	0	4	3	2	1	4	3.00	14
Social media interface	0	4	3	3	1	3	3.09	14
Wiki	0	3	3	3	2	3	3.36	14
Student resource sharing	0	0	6	4	1	3	3.55	14
Video bookmarking	0	2	3	2	3	4	3.60	14
Media/assets sharing	0	1	4	1	5	3	3.91	14
ePortfolio	0	0	2	5	2	5	4.00	14
Enhanced authoring capabilities	0	1	2	2	4	5	4.00	14
Instructional design wizard	0	0	3	2	4	5	4.11	14
Interactive simulations	0	0	2	2	6	4	4.40	14
Plagiarism review	0	0	1	3	6	4	4.50	14
Other (please specify)								0
							answered question	**14**
							skipped question	**6**

What additional components and/or activities would you like to see in Seaport?
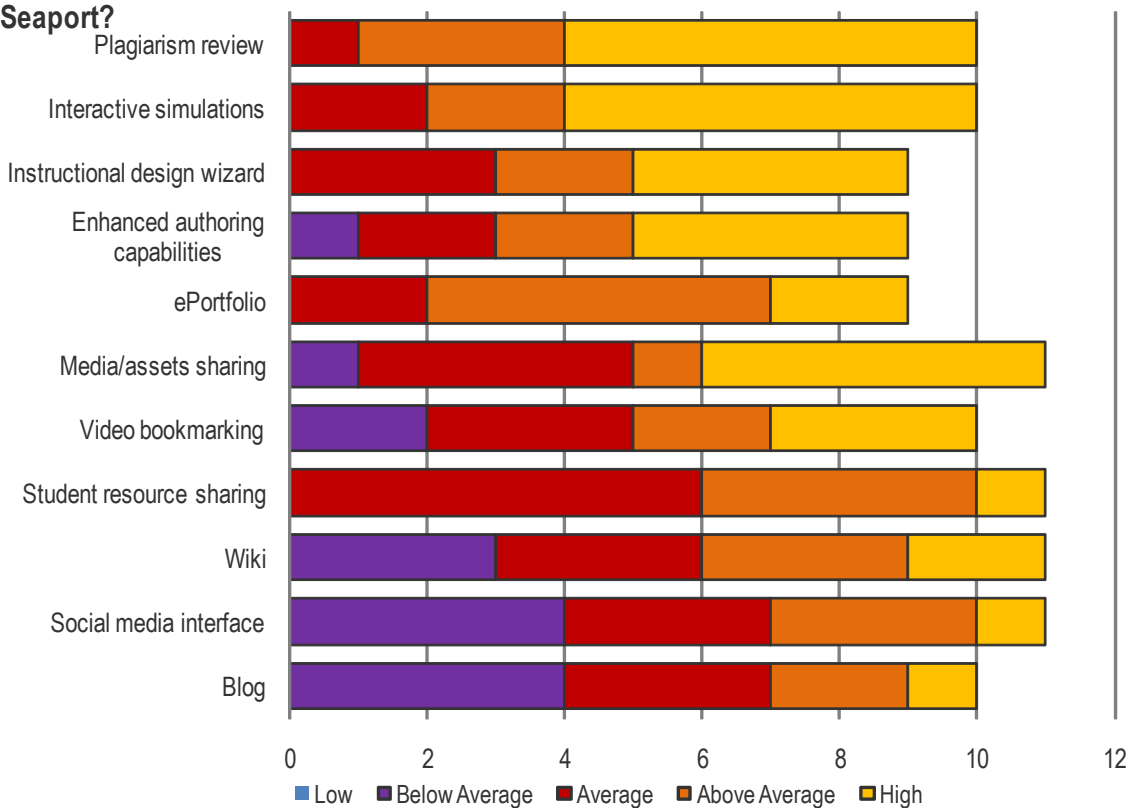
Question 16

Question 17

Rank the importance of the folloing items with regard to the college and your department (e.g., 1 highest and 9 lowest)
College

Answer Options	1	2	3	4	5	6	7	8	9	Response Count
Ability and time to test new and innovative technology solutions	9	2	2	0	1	1	2	0	2	19
Adoption of new and emerging technology	9	3	1	2	1	0	1	1	1	19
Funding to acquire new technology	10	3	2	0	0	1	1	0	2	19
Improving knowledge about what is available and possible	6	2	4	3	1	0	1	0	2	19
Replacement funding to keep technology and software current	10	3	1	1	0	0	2	1	1	19
Research necessary to identify new technology-based solutions	5	5	2	1	1	1	1	1	2	19
Technical support to install or use new systems	6	6	1	1	1	0	1	2	1	19
Technical support to improve productivity with existing systems	4	7	4	0	0	0	1	1	2	19
Training to use existing technology	5	5	4	0	0	1	1	2	1	19

Department

Answer Options	1	2	3	4	5	6	7	8	9	Response Count
Ability and time to test new and innovative technology solutions	8	1	1	0	2	1	3	0	3	19
Adoption of new and emerging technology	8	2	2	2	1	0	1	1	2	19
Funding to acquire new technology	9	2	3	0	0	1	1	1	2	19
Improving knowledge about what is available and possible	6	3	4	2	0	0	1	0	3	19
Replacement funding to keep technology and software current	8	3	1	2	0	1	2	1	1	19
Research necessary to identify new technology-based solutions	5	2	3	2	1	0	1	2	3	19
Technical support to install or use new systems	5	6	1	0	1	0	3	2	1	19
Technical support to improve productivity with existing systems	4	5	1	2	2	0	1	1	3	19
Training to use existing technology	5	3	1	2	3	1	1	2	1	19
							answered question			19
							skipped question			1

Rank the importance of the folloing items to the college
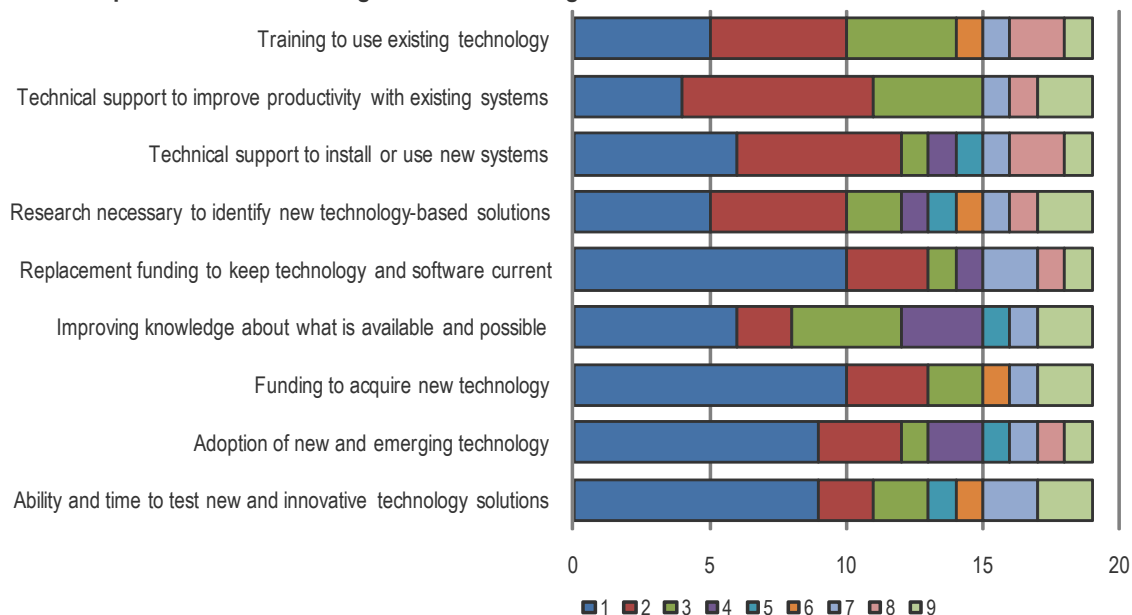
Rank the importance of the folloing items to your department
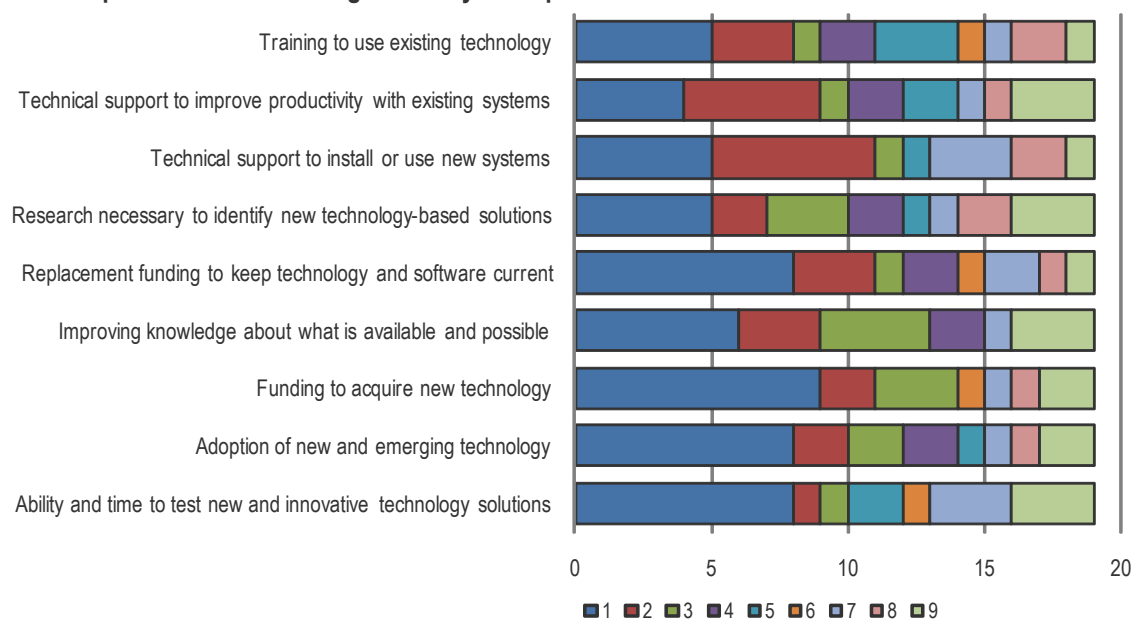
Question 18: What opportunities and challenges do you see for improving quality in your department using technology solutions (please explain)?

1. Time, money, resources...especially time right now. Everyone is so busy, doing more with less.
2. More staff exposure to possible technology-based solutions to personnel intensive activities
3. All of the items above are equally important and are also integrated to the overall success of our college's use of technology. If we don't invest and maintain our tech at high standards, than we need to change

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how we provide educational delivery. Technology funding, staffing and support are all VERY important to our colleges future!
4. Cost, training, support
5. (1) Challenges: - lack of adequate technical staff - lack of funding - gap between need and acceptance by faculty (2) Opportunities: - mobile technology - virtual reality & simulations - expert systems - knowledge-based systems
6. Opportunities: Support from upper management to improve things and invest in the technology Challenges: Additional positions with the skill set necessary to implement the new technology. Funding for technology replacement. Funding for training of technical staff as well as all college staff.   College/ Business processes analysis training.
7. We need programs and up to date technology to increase the speed and efficiency of staff
8. Challenges: Trying to improve, innovate, plan while coping with the ever increasing volume of work that has to done. Opportunity: Glad to scalp what isn't needed; glad to use electronics--but start ups can be hard at the beginning because making systems work with each other is frustrating when you're short on time, money, space and staff. We're not reluctant to change but wish we pull it off better.
9. It is imperative for CISD to expand services.
10. Lack of time and available human resources to research, analyze and implement new solutions.

Question 19: How would you like to use technology to improve your department, programs, and personal effectiveness?

1. Create new fantastic interactive courseware, reasons for students to come to Coastline.
2. Find redundant tasks, or high time consumption and examine cost/time saving measures
3. Increase efficiency and communication, and save time.
4. Improve efficiency reduce production costs
5. I would like to have college processes analyzed and infuse technology where it makes sense to improve effectiveness and efficiencies. I would like to provide technical training for my staff and improve their communication. I would like to have
6. Would like students to be able to easily navigate software programs to review transcripts, ed plans, grades, etc.
7. We're drowning in paper. Have to get away from making files, file cabinets. Need to download; view; scan; process. Have to end manual/paper processes which support what looks like online systems
8. Need funding to increase research.

Question 20: Given unlimited resources, what would be your vision of technology for your department/program and the college?

1. Using technology for every task and function where it can add to quality or cost-effectiveness, without losing the necessary human connection.
2. Wi-Fi communication, self-help kiosks, student access to information and tracking of their own performance to lessen burden on staff
3. Recognized leaders in the industry
4. Lecture capture for every course with automated VOD or POD casting. - dramatic increase in use of simulations for all classes - virtual reality labs

1. Use cloud services where it makes sense 2. Do a full security audit and implement more security throughout the entire college operations 3. Provide more training for all college staff to increase their understanding of technology and the importance of security 4. Conduct a full college-wide business process analysis to infuse technology that will create effectiveness and efficiencies 5. Have a properly funded replacement plan for all technology 6. Hire additional staff in the technology department with the proper skill set that will move the college forward 7. Invest in integrating all the technology from the classroom to the offices 8. Train faculty to infuse more technology especially mobile technology into the curriculum 9. Become more creative in the delivery of instruction that will utilize more technology
5. Wireless technology and programs for students that are supported by the IT department and secure
6. Totally paperless processing with truly automated functions. Effective electronic communication in mesh with how many people do business with a way to bring along the hesitant and ill-equipped. Not have to play catch up and apologizing for how long things take because our turnaround time thanks to state of the art technology is fantastic!
7. We would continually roll out new courseware modalities on every new mobile device -- in the same year that the device hits the market.
8. Current technology with adequate support for faculty, staff, and student-use hardware and software.

Question 21: What are the most interesting developments in information and education technology that you are aware of (either available now or coming in the future) that Coastline Community College and its instructors should consider?

1. Again, the convergence of different media (text, online courseware) into one electronic package that can be accessed by most any device.
2. Convergence toward mobile devices and integration of information systems, plus simulation technology to lessen onsite classroom costs, offer extended program opportunities through DL.
3. Virtual training environments.
4. Mobile convergence - semantic web - animation - rapid prototyping systems
5. (1) Cloud computing (2) Ebooks (3) Mobile computing and its affects in the classroom (4) Online education and its future (5) Security and the threat of stealing of information
6. Tablet style computing (iPad, android) digital media delivery systems (Netflix, iTunes, Amazon) cloud computing technology
7. Ways to weave hand helds, iPads, etc with communication, coursework
8. A complete online degree!

Appendix II: <u>Part 5. Classified Staff Technology Survey 2010-2011: Responses</u>

Question 1

What is your gender?

Answer Options	Response Percent	Response Count
Male	29.4%	20
Female	70.6%	48
answered question		68
skipped question		0
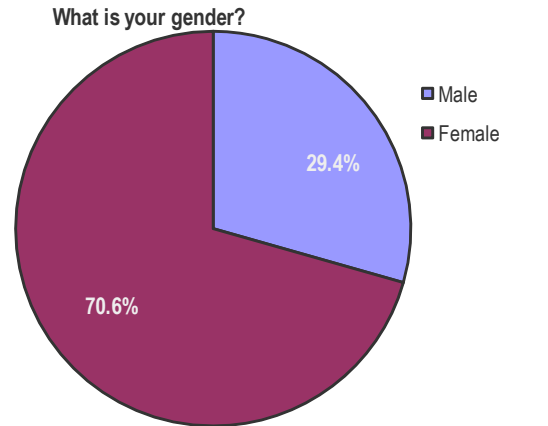
What is your gender?

Question 2

What is your age range?

Answer Options	Response Percent	Response Count
Under 30	8.8%	6
30 - 45	23.5%	16
Over 46 - 60	51.5%	35
Over 60	16.2%	11
No Comment	0.0%	0
answered question		68
skipped question		0
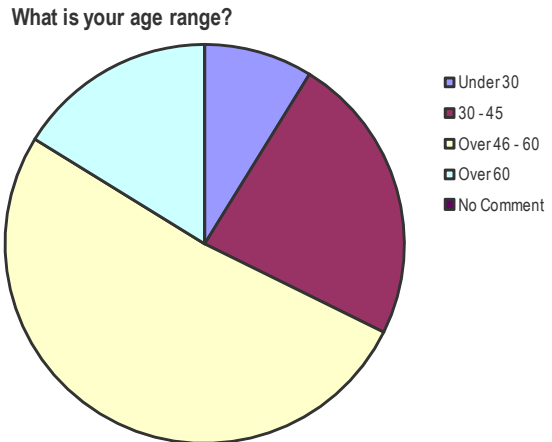
What is your age range?

Question 3

How many years have you worked at Coastline Community College?

Answer Options	Response Percent	Response Count
Less than 1 year	2.9%	2
1-2 years	0.0%	0
3-5 years	29.4%	20
6-10 years	39.7%	27
over 10 years	27.9%	19
answered question		68
skipped question		0

How many years have you worked at Coastline Community College?
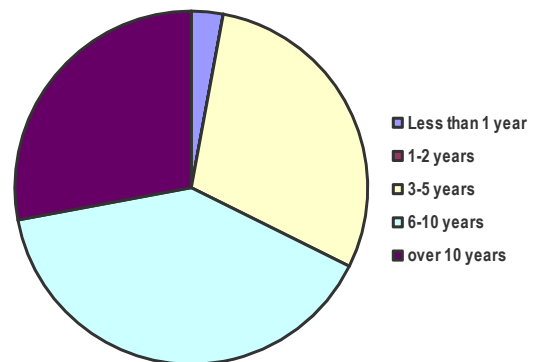
Question 4

What type of computer/s and peripherals do you use at home (select all that apply or skip if none)?

Answer Options	Response Percent	Response Count
Desktop	85.1%	57
Laptop	76.1%	51
Scanner	56.7%	38
Head Phones	52.2%	35
Desktop Video Camera	28.4%	19
iPad	17.9%	12
eBook Reader	13.4%	9
NetBook	9.0%	6
	answered question	67
	skipped question	1

What type of computer/s and peripherals do you use at home?
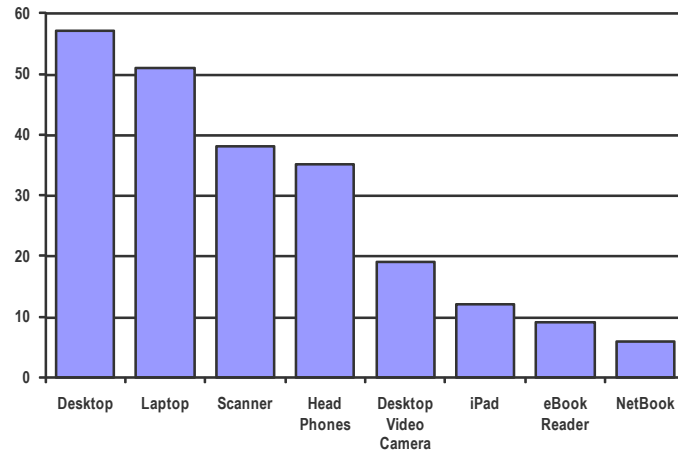
Question 5

What operating system/s do you use at home (select appropriate answer for each drop-down box or skip if none)?

Answer Options	Windows XP	Windows Vista	Windows 7	MacOS	Android	Linux	Other	Don't know	NA	Response Count
Desktop	24	8	20	5	0	0	0	1	0	58
Laptop	10	11	17	11	0	0	1	2	2	54
Netbook	1	1	5	0	0	0	0	0	9	16
TabletPC	2	1	1	3	0	0	1	0	9	17
									answered question	67
									skipped question	1

What operating system/s do you use at home?
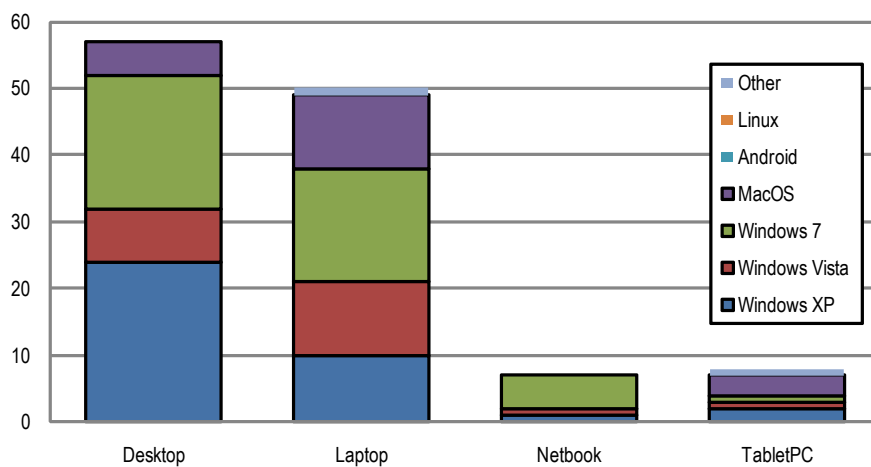
Question 6

What type of internet service do you use at home (if none select no access, if you use more than one service select as many answers as appropriate)?

Answer Options	Response Percent	Response Count
Cable modem	48.5%	33
Digital subscriber line (DSL)	33.8%	23
Wireless	19.1%	13
Cellular	10.3%	7
No access	4.4%	3
Satellite (HST)	2.9%	2
Dial-up modem	0.0%	0
	answered question	**68**
	skipped question	**0**

What type of internet service do you use at home?
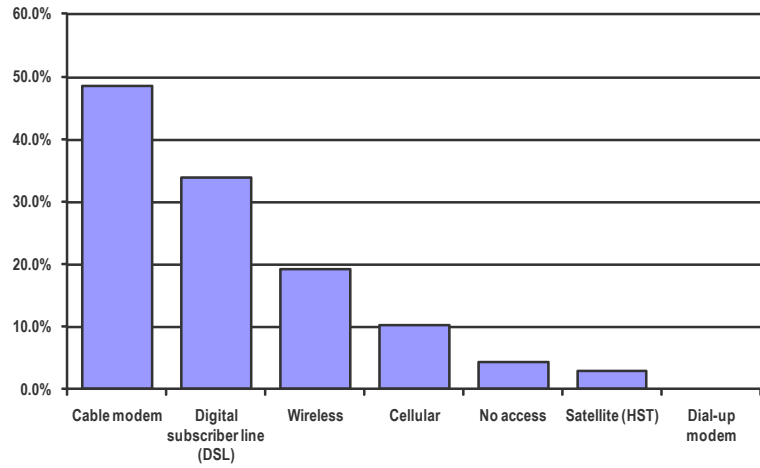
Question 7

What Internet browser/s do you use at home and work (select as many answers as appropriate from each column or skip if none)?

Answer Options	Home	Work	Response Count
Explorer	42	50	57
Mozilla	41	12	26
Google	23	12	43
Safari	15	5	2
Opera	2	1	17
Other	2	1	2
		answered question	**66**
		skipped question	**2**

What Internet browser/s do you use at home and work?
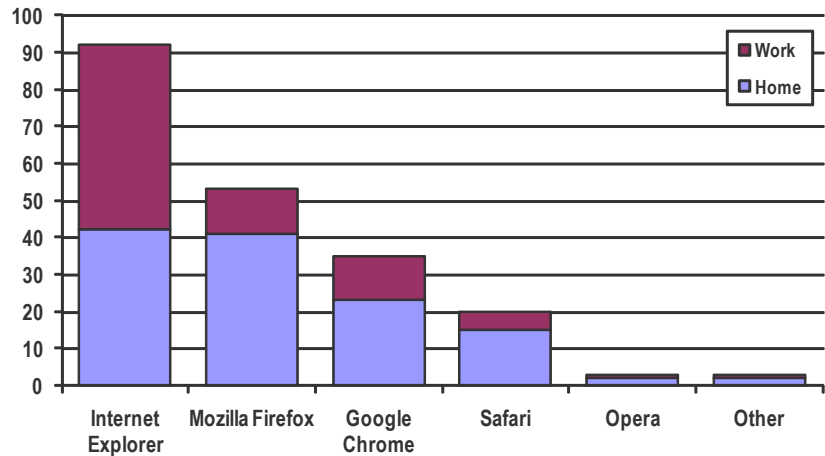
Question 8

What dedicated hand-held multimedia players do you use? Do you use them for work, entertainment and/or learning? (please indicate the best answer for each drop-down box)

Use for Work

Answer Options	Yes	No	What is it?	Response Count
iPod (Shuffle, Touch, Nano, etc.) to	4	26	0	30
eBook Reader (Kindle, Sony, Barnes and Noble, etc.)	0	29	1	30
Palm PDA (non-phone) Pocket PC Windows PDA (non-phone)	3	27	1	31
MP3/MP4 Player (Sansa, WalkMan, Zune, etc.)	1	28	1	30
MP3/MP4 Recorder (Zune, Samsung, etc.)	0	29	1	30
Internet Tablet (Archos)	1	24	6	31
Satellite Radio (Syrius or XM)	2	28	1	31

Use for Entertainment

Answer Options	Yes	No	What is it?	Response Count
iPod (Shuffle, Touch, Nano, etc.) to	36	10	0	46
eBook Reader (Kindle, Sony, Barnes and Noble, etc.)	14	21	1	36
Palm PDA (non-phone) Pocket PC Windows PDA (non-phone)	3	27	1	31
MP3/MP4 Player (Sansa, WalkMan, Zune, etc.)	15	18	1	34
MP3/MP4 Recorder (Zune, Samsung, etc.)	7	25	1	33
Internet Tablet (Archos)	1	24	6	31
Satellite Radio (Syrius or XM)	12	21	1	34

Use for Learning

Answer Options	Yes	No	What is it?	Response Count
iPod (Shuffle, Touch, Nano, etc.) to	11	22	0	33
eBook Reader (Kindle, Sony, Barnes and Noble, etc.)	8	22	1	31
Palm PDA (non-phone) Pocket PC Windows PDA (non-phone)	2	27	2	31
MP3/MP4 Player (Sansa, WalkMan, Zune, etc.)	7	22	1	30
MP3/MP4 Recorder (Zune, Samsung, etc.)	4	25	1	30
Internet Tablet (Archos)	1	23	6	30
Satellite Radio (Syrius or XM)	2	28	1	31
			answered question	54
			skipped question	14

What dedicated hand-held multimedia players do you use for work?
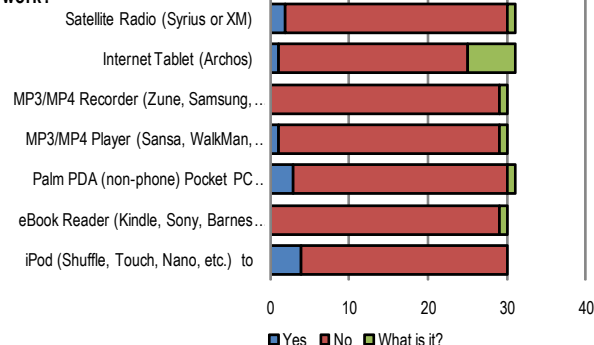
What dedicated hand-held multimedia players do you use fpr entertainment?
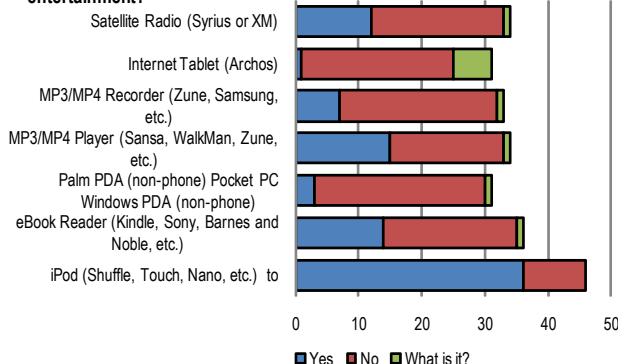
What dedicated hand-held multimedia players do you use for learning?
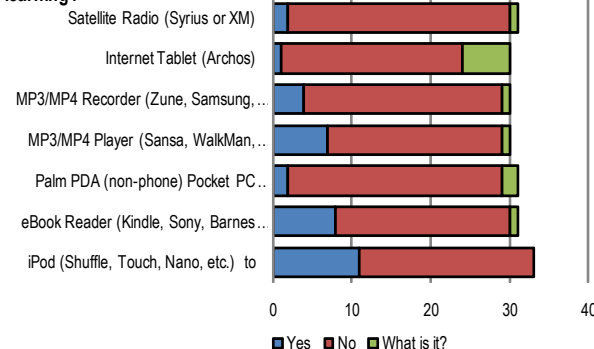
Question 9

Rank the importance of the following technology initiatives the college should address over the next 5 years.

Answer Options	Low	Below Average	Average	Above Average	High	N/A	Rating Average	Response Count
Incorporation of social networking software strategies into college courses/processes (Facebook, Twitter,	7	8	23	13	11	1	3.21	63
Virtual simulations for local and remote access (i.e., laboratory simulations)	5	4	16	19	16	3	3.62	63
Lecture capture and automated distribution systems (POD/VOD Casting)	4	3	17	20	15	4	3.66	63
Small device convergence support and services (smart-phone, PDA/cell access to college information,	4	3	17	15	22	2	3.79	63
Live conferencing options for meetings and/or instruction (Elluminate, Connect Pro, SKYPE, etc.)	1	3	15	25	17	2	3.89	63
Electronic textbooks	4	0	13	17	28	1	4.05	63
Interactive and self-paced online tutoring support	2	3	12	17	28	1	4.06	63
Online 24/7 student helpdesk	3	2	8	20	28	2	4.11	63
Automated/online self-help graduation road map for degree plans and course choices	2	3	6	22	30	0	4.19	63
Improved and expanded automation of college processes/services (targeted at cost, self-help, and efficiency	1	1	9	24	28	0	4.22	63
Increased Wi-Fi access for students, staff, and faculty	0	1	9	17	36	0	4.40	63
Faculty/staff training to use new and emerging technology	0	1	3	15	42	2	4.61	63
Other (please specify)							0.00	5
							answered question	63
							skipped question	5

Rank the importance of the following technology initiatives the college should address over the next 5 years.
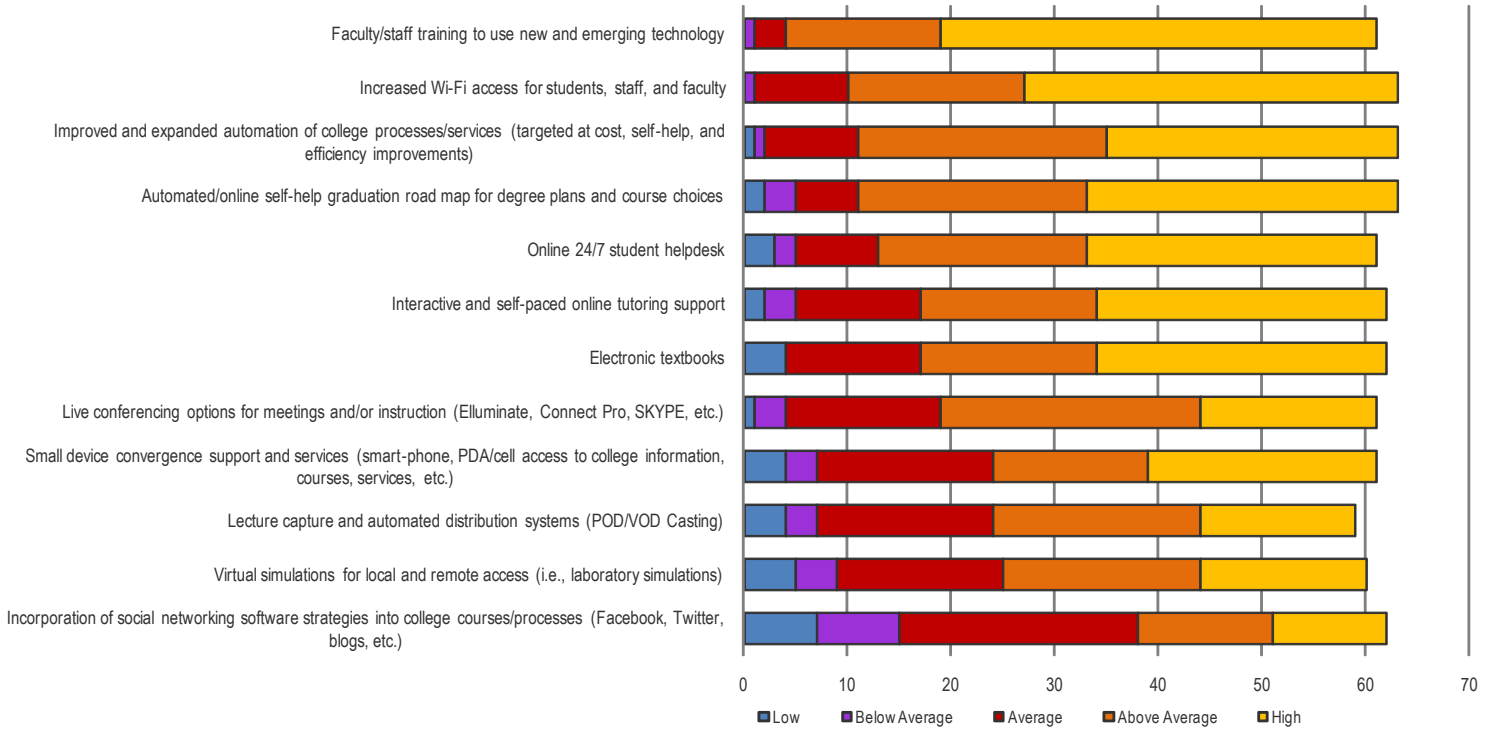
Question 10

To what degree do the following factors influence your use of technology in your department's activities?

Answer Options	Low	Below Average	Average	Above Average	High	N/A	Rating Average	Response Count
Desire to facilitate communication and collaboration with other departments	0	0	15	20	24	4	4.15	63
Desire to keep up with other programs or organizations	2	3	11	18	27	2	4.07	63
Organizational culture which encourages the use of information technology	2	3	8	19	28	3	4.13	63
Students' familiarity with technology	1	2	11	17	29	3	4.18	63
Ability to increase staff or student access to services	0	2	9	19	30	3	4.28	63
Desire to keep up with trends in higher education	1	2	8	18	32	2	4.28	63
Ability to facilitate communication between staff, managers, and students	1	2	11	15	33	1	4.24	63
Ability to provide services or products more efficiently	0	2	8	18	34	1	4.35	63
Ability to create or expect higher quality work	0	0	7	20	35	1	4.45	63
Belief that staff familiarity with technology will improve services and improve productivity	1	1	6	18	35	2	4.39	63
						answered question		**63**
						skipped question		**5**

To what degree do the following factors influence your use of technology in your department's activities?
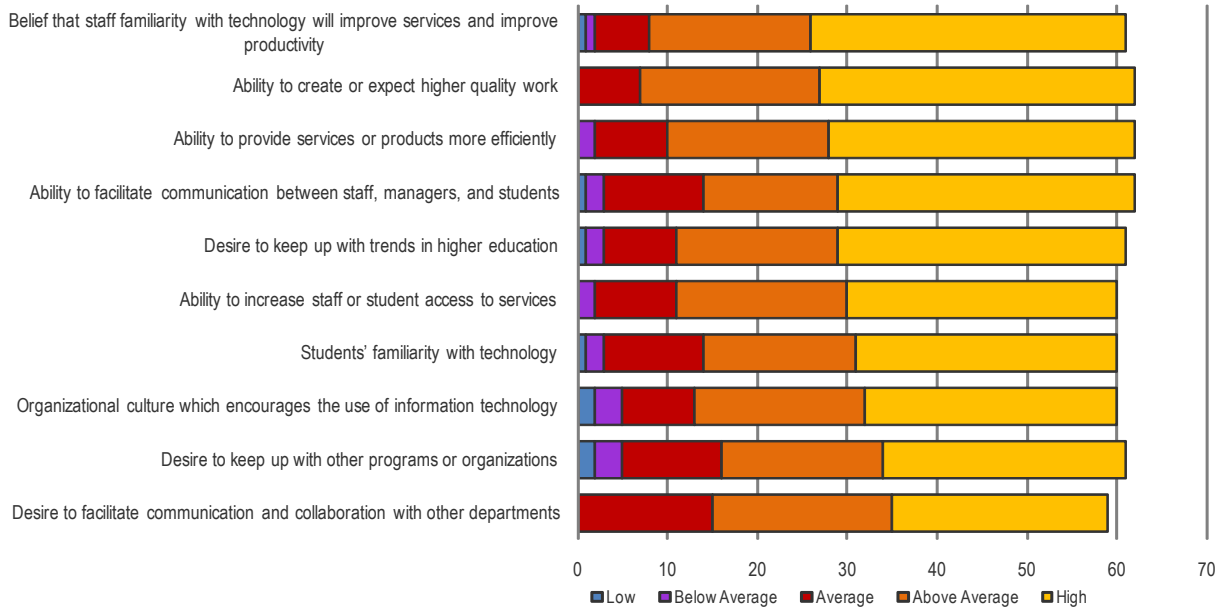
Question 11

How much of a barrier are the following to your department's use of technology?

Answer Options	Low	Below Average	Average	Above Average	High	N/A	Rating Average	Response Count
Question usefulness in my department	7	12	11	10	5	2	3.61	53
Student access to technology	4	7	19	12	6	2	3.55	53
Don't know how to get started	14	4	17	3	6	4	2.98	53
Network/Internet connection problems	8	8	17	9	7	3	3.04	53
Computer crashes, programs failing to run properly	7	10	14	12	7	2	3.35	53
Time required to research, adopt, and use technology	2	4	17	20	8	3	3.22	53
Lack of current hardware and/or software	6	8	9	18	10	4	3.43	53
Access to technology-enhanced facilities	4	5	16	14	10	5	3.19	53
Lack of on-site support	7	8	13	11	11	4	3.43	53
Inadequate technical support for you	7	6	11	16	11	2	3.35	53
Time required to learn about technology	3	6	11	19	12	1	3.96	53
Inadequate technical support for your staff	5	7	11	14	12	1	3.44	53
Lack of necessary technical skills	5	4	18	13	12	8	2.87	53
Lack of money to fund new initiatives	3	1	13	13	22	9	2.61	53
						answered question		**53**
						skipped question		**15**

How much of a barrier are the following to your department's use of technology?
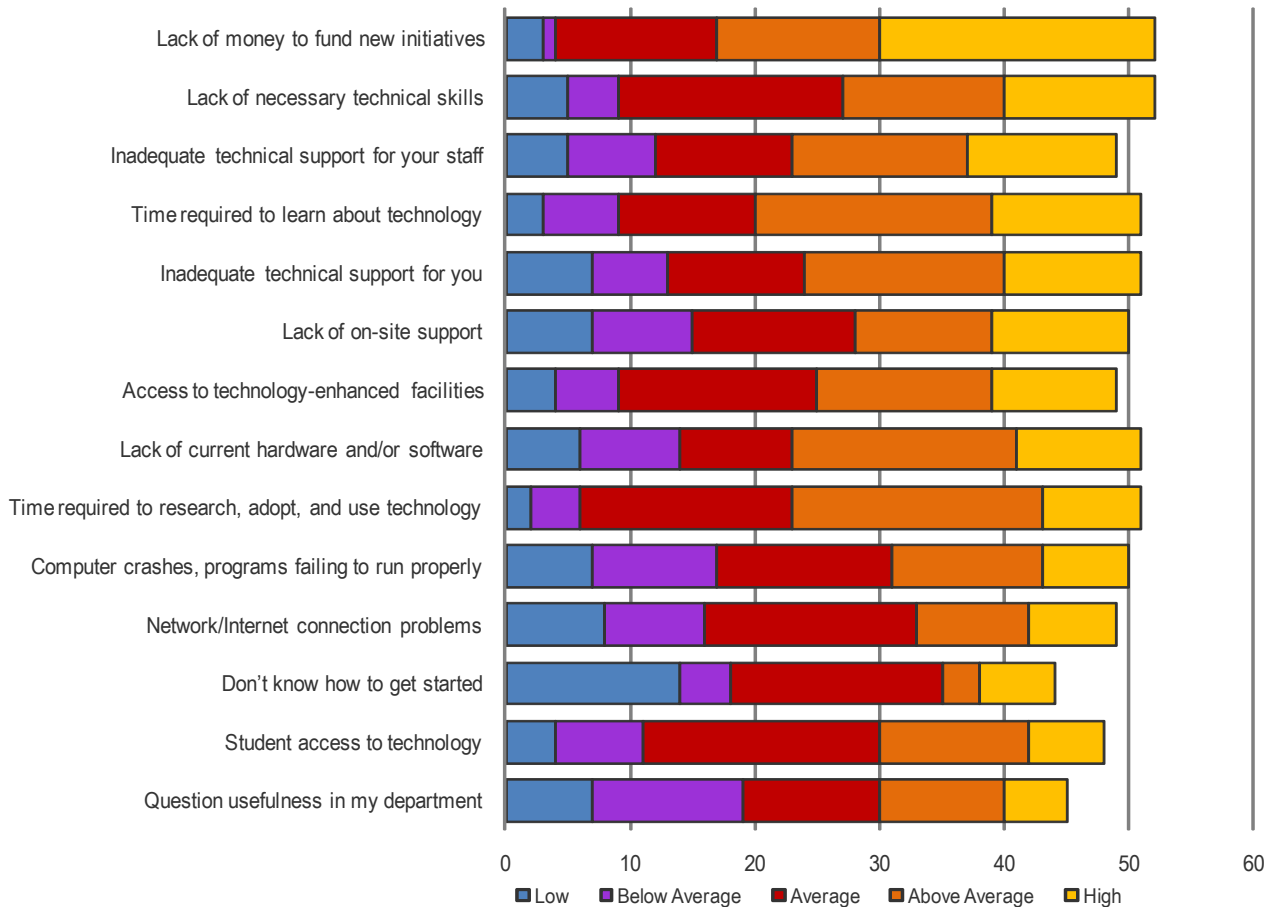
Question 12

How important are the following technologies (hardware, software, infrastructure, systems, and support) to you and your department and how prepared is your department to use them when?

Importance

Answer Options	Very Important	Above Average	Average	Below Average	Not Important	No Opinion	Response Count
presenting and/or managing information?	38	8	5	0	0	2	53
communicating and interacting with staff and management?	29	13	6	3	0	2	53
collaborating with peers, work teams and/or committees?	22	14	13	0	0	4	53
helping staff solve new challenges and/or problems?	22	16	10	1	0	4	53
inspiring co-workers and staff to use creative solutions and/or approaches?	23	14	10	2	1	3	53
developing programs and services?	22	11	6	6	1	7	53
accomplishing institutional strategic planning initiatives, CCC mission, and/or departmental goals?	20	6	15	4	1	7	53
helping improve effectiveness and achieve department goals and objectives?	25	13	10	2	0	3	53
helping your staff access, analyze, and use information?	25	13	8	3	0	4	53
providing staff with resources, assistance, and/or training to use technology to conduct research?	23	9	10	5	1	5	53

Preparedness

Answer Options	Very Prepared	Above Average	Average	Below Average	Not Prepared	No Opinion	Response Count
presenting and/or managing information?	8	13	20	5	2	5	53
communicating and interacting with staff and management?	10	13	18	5	3	4	53
collaborating with peers, work teams and/or committees?	6	10	21	7	2	7	53
helping staff solve new challenges and/or problems?	6	10	22	8	1	6	53
inspiring co-workers and staff to use creative solutions and/or approaches?	5	10	16	8	7	7	53
developing programs and services?	5	4	20	7	7	10	53
accomplishing institutional strategic planning initiatives, CCC mission, and/or departmental goals?	5	3	26	5	3	11	53
helping improve effectiveness and achieve department goals and objectives?	5	10	24	6	2	6	53
helping your staff access, analyze, and use information?	5	12	19	7	3	7	53
providing staff with resources, assistance, and/or training to use technology to conduct research?	4	7	19	8	5	10	53

	answered question	**53**
	skipped question	**15**

How important are the following technologies to you and your department?
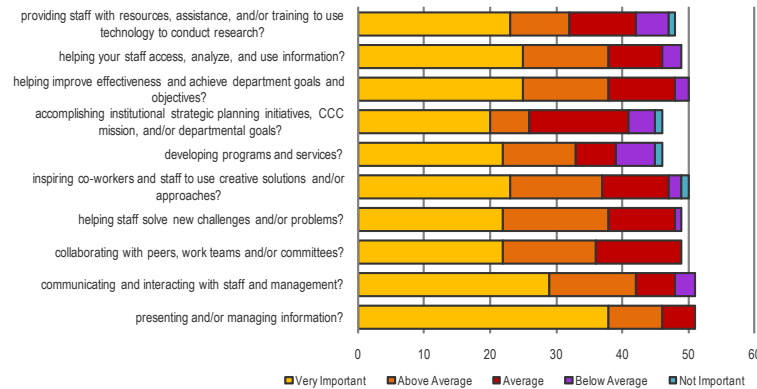
How prepared is your department to use the following technologies?
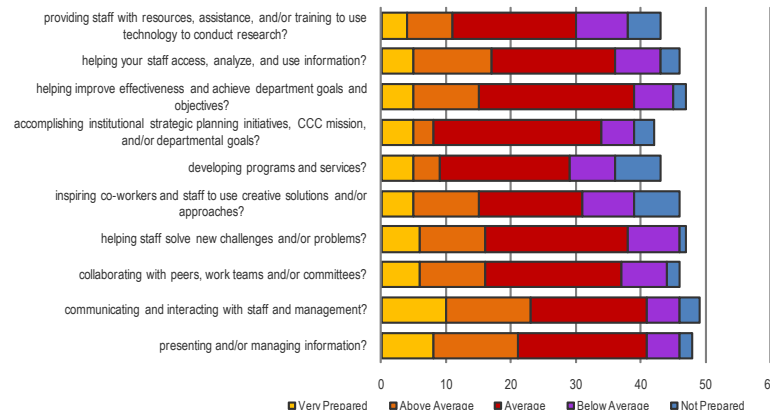
Question 13

Are you familiar with Seaport's purpose and function?

Answer Options	Response Percent	Response Count
Yes	77.4%	41
No	22.6%	12
answered question		53
skipped question		15

Are you familiar with Seaport's purpose and function?

23% 77% ■Yes ■No
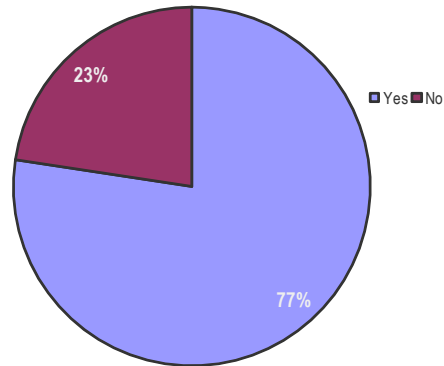
Question 14

Rate the importance of the following for Face-to-Face Classes, Hybrid Classes, and Online Classes using Seaport (select an answer for each drop-down box). Skip this question and the next question if you are not involved in faculty or student support.

Face-to-Face Classes

Answer Options	Very important	Average importance	Unimportant	No Opinion	Response Count
Online syllabus	21	9	1	4	35
Online grading metric	18	8	4	4	34
Instructor introduction	16	11	4	3	34
Video lectures/demonstrations	10	15	4	5	34
Interactive applets	6	13	8	7	34
Discussion forum	11	13	6	4	34
Presentations/lectures	20	9	1	4	34
Audio resources	4	23	3	4	34
Simulations	7	14	2	11	34

Rate the importance of the following for Face-to-Face Classes using Seaport.
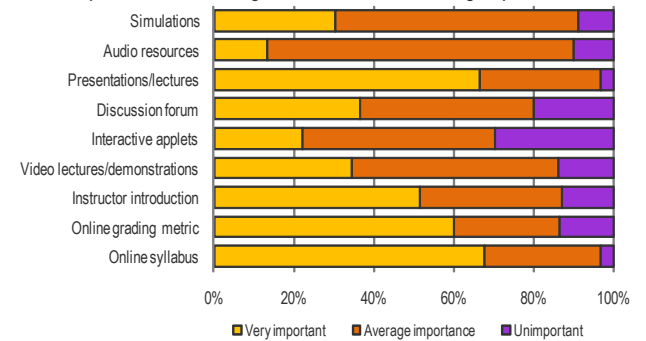
■Very important ■Average importance ■Unimportant

Hybrid Classes

Answer Options	Very important	Average importance	Unimportant	No Opinion	Response Count
Online syllabus	24	4	1	5	34
Online grading metric	22	4	2	5	33
Instructor introduction	19	9	0	5	33
Video lectures/demonstrations	13	13	1	6	33
Interactive applets	9	12	2	10	33
Discussion forum	16	10	1	5	32
Presentations/lectures	19	6	2	6	33
Audio resources	8	18	2	5	33
Simulations	9	11	1	12	33

Rate the importance of the following for Hybrid Classes using Seaport.
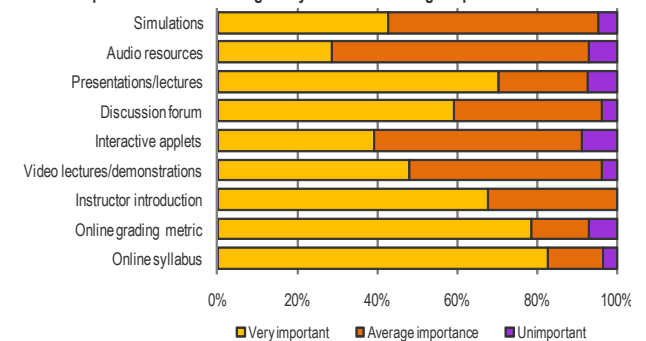
■Very important ■Average importance ■Unimportant

Online Classes

Answer Options	Very important	Average importance	Unimportant	No Opinion	Response Count
Online syllabus	28	2	0	3	33
Online grading metric	25	3	1	4	33
Instructor introduction	21	9	0	3	33
Video lectures/demonstrations	17	9	1	6	33
Interactive applets	14	8	2	9	33
Discussion forum	23	5	0	5	33
Presentations/lectures	20	6	2	5	33
Audio resources	12	12	3	6	33
Simulations	12	10	1	10	33
answered question					35
skipped question					33

Rate the importance of the following for Online Classes using Seaport.

■Very important ■Average importance ■Unimportant
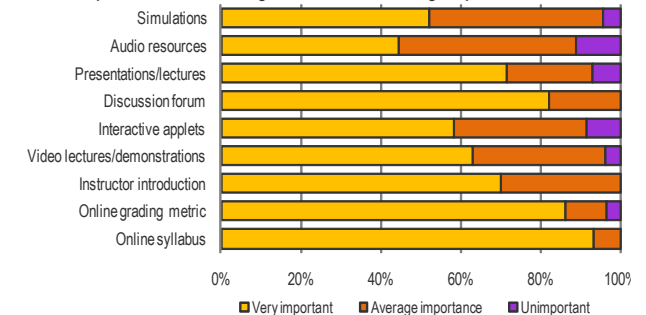
Question 15

What additional components and/or activities would you like to see in Seaport (rank the importance of each item)?

Answer Options	Low	Below Average	Average	Above Average	High	N/A	Rating Average	Response Count
Blog	7	8	4	4	3	7	2.54	33
Wiki	5	7	9	5	0	7	2.54	33
Social media interface	6	6	9	1	4	7	2.65	33
ePortfolio	7	2	8	3	5	8	2.88	33
Video bookmarking	3	6	9	3	6	7	3.11	34
Enhanced authoring capabilities	2	1	10	6	4	10	3.39	33
Media/assets sharing	1	3	10	6	7	7	3.56	34
Student resource sharing	1	3	6	14	4	6	3.61	34
Interactive simulations	2	2	7	8	7	6	3.62	32
Instructional design wizard	1	2	9	8	6	7	3.62	33
Plagiarism review	1	1	5	8	11	7	4.04	33
Other (please specify)								2
							answered question	34
							skipped question	34

What additional components and/or activities would you like to see in Seaport (rank the importance of each item)?
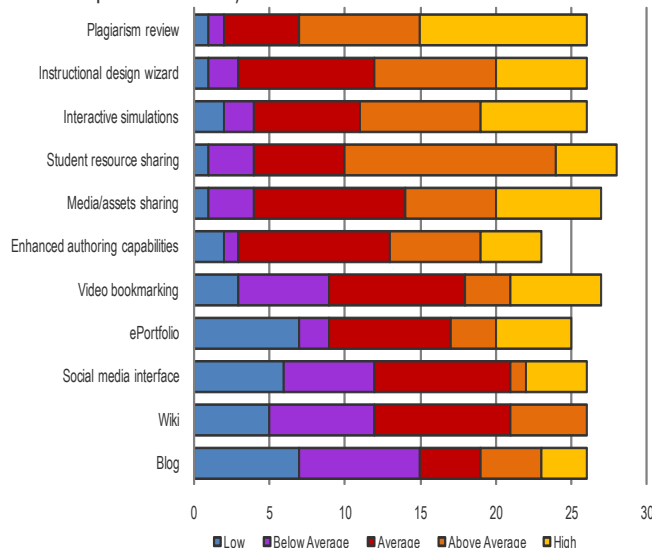
Question 16

Rank the importance of the following items with regard to the college and your department (e.g., 1 highest and 9 lowest)

College

Answer Options	1	2	3	4	5	6	7	8	9	Response Count
Ability and time to test new and innovative technology solutions	12	6	6	3	4	2	3	2	6	44
Adoption of new and emerging technology	14	6	6	4	2	3	4	1	4	44
Funding to acquire new technology	14	10	8	0	3	1	2	3	3	44
Improving knowledge about what is available and possible	15	9	4	2	2	1	3	3	5	44
Replacement funding to keep technology and software current	16	5	6	4	2	2	2	1	6	44
Research necessary to identify new technology-based solutions	9	7	6	5	5	1	4	3	4	44
Technical support to use or install new systems	13	8	6	0	7	0	3	1	6	44
Technical support to improve productivity with existing systems	12	6	5	5	4	3	2	1	6	44
Training to use existing technology	14	9	6	3	0	0	1	4	7	44

Department

Answer Options	1	2	3	4	5	6	7	8	9	Response
Ability and time to test new and innovative technology solutions	17	5	4	1	5	2	3	2	5	44
Adoption of new and emerging technology	17	5	2	6	6	1	4	1	2	44
Funding to acquire new technology	17	7	9	1	3	0	4	1	2	44
Improving knowledge about what is available and possible	18	5	5	2	4	2	3	3	2	44
Replacement funding to keep technology and software current	19	6	2	4	3	3	1	1	5	44
Research necessary to identify new technology-based solutions	14	5	3	2	7	4	3	3	3	44
Technical support to use or install new systems	18	5	2	3	5	2	4	1	4	44
Technical support to improve productivity with existing systems	16	4	5	4	3	4	1	2	5	44
Training to use existing technology	16	9	4	2	3	1	1	3	5	44
								answered question		44
								skipped question		24

Rank the importance of the following items with regard to the college (e.g., 1 highest and 9 lowest)

Training to use existing technology

Technical support to improve productivity with existing systems

Technical support to use or install new systems

Research necessary to identify new technology-based solutions

Replacement funding to keep technology and software current

Improving knowledge about what is available and possible

Funding to acquire new technology

Adoption of new and emerging technology

Ability and time to test new and innovative technology solutions

0   10   20   30   40   50

■ 1 ■ 2 ■ 3 ■ 4 ■ 5 ■ 6 ■ 7 ■ 8 ■ 9

Rank the importance of the following items with regard to your department (e.g., 1 highest and 9 lowest)

Training to use existing technology

Technical support to improve productivity with existing systems

Technical support to use or install new systems

Research necessary to identify new technology-based solutions

Replacement funding to keep technology and software current

Improving knowledge about what is available and possible

Funding to acquire new technology

Adoption of new and emerging technology

Ability and time to test new and innovative technology solutions

0   10   20   30   40   50

■ 1 ■ 2 ■ 3 ■ 4 ■ 5 ■ 6 ■ 7 ■ 8 ■ 9

Classified Staff Comments

Question 17: What opportunities and challenges do you see for improving quality in your department using technology solutions (please explain)?

1. (1) Make all information about my class on the internet and using e-mail to communicate with students to save paper and printing costs. (2) Develop Student database for tracking their (a) needs, (b) achievements, (c) notifying students the new opportunities that our college is offering them.
2. Faculty unwilling to adapt to change and to adapt new technology
3. Financial issues. Willingness of staff to participate.
4. I have found the Board of Directors to be a challenge in using technology solutions as they can be a barrier to entering into agreements with 3rd party companies.
5. Instructors are not using Seaport for quizzes, grading and discussion groups. I have found these to be very important. I would like to have easy access to upload video snippets to enhance learning for students that need focused additional instruction, to supplement lectures or drill-down into difficult topics.
6. We can better utilize our existing technology. We have part-time employees that need training on the basic use of a computer. Many do not know how to change their home page inside of IE. Many do not know how to change a printer to make it the default printer.
7. I would like to see us using an online filing system for student files that are in Archives. Some files are 8 inches thick. We MUST have access to instructor syllabuses in order to support students that need test proctoring. Under the current system, the students tell us when the exams are and they are not always truthful. Give us the authorization to better serve our disabled population. Give us timely responses from our technology people, communication with them is reprehensible- because we are not at the main office- we are discounted.
8. Challenge is in overloading staff with new technology before they are capable of using the old technology. We have more than enough technology, but the staff doesn't know it's capability so they are constantly looking for new & more magic toys to solve small problems. Many of which are solved by technology we already have in place but they don't know how to use.
9. The opportunities I see are that staff will be more productive in less time using new technology.
10. Helping or training faculty, staff and administrators with current technology or newer technology.
11. Scheduled upgrades of software and hardware. A three-year rotation of hardware can be planned into a budget and will keep the college and departments up-to-date
12. Until the Coastline technology (including Banner) works correctly, we cannot address interoffice improvements.
13. Better orientations for online students. Many of our students do not read and comprehend written instructions. It would be very helpful to have an automated reminder system to keep students on target and to get them started before the course is half over.
14. Training, training, training. I understand the I.T. staff hasn't been trained on new and emerging technologies for years. How can they assist us if they aren't adequately trained? Someone is definitely NOT in-charge of I.T.
15. A recurring challenge I see is that people, normally faculty, "don't know what they don't know". This means they 'think' they're proficient in using an application or a device, when in reality they don't have a clue. Getting them to 'self-identify' and be willing to learn more is the issue. As a result, lots of time and money is spent on people who don't know how to use something, and never use the 'benefit' to its greatest extent. Given that the college is 'the' technology college, why are new hires measured for technology knowledge, and then trained where needed? Security - I've lost count of the number of times I've seen people's computers are 'unlocked', because they've stepped away, etc. I firmly think more (re)training is needed, such as Peter's "ASAP" seminar at a Summer Train. Inst. a few years ago.
16. Admissions and Records can always use any new and innovative way to streamline processes; however, some of our desktops are slow and our MyCoast system isn't the most student friendly system to use.
17. Limited and unqualified computer services director and an aging technology committee. Outdated administrators with no knowledge of the direction coastline needs to head in.

Question 18: How would you like to use technology to improve your department, programs, and personal effectiveness?

1. Streamline educational plans, streamline the advising process to truly help students, access student information in a more effective and efficient manner
2. Sharing of information such as documents, large publications, proofs via shared electronic "page".
3. Depends on kind of technology
4. I would like podcast/vodcast ability. I need to learn more about how to integrate social media in communicating with students (use email, but that is fast becoming an 'old' technology, and is fairly limited by discrete recipients, and not viewable by subsequent students who may have a similar question. I would like to be able to retain discussion group postings (selected, not all) to share them with subsequent/other sections. I would like to be able to upload to Squid from word/text documents (not by cutting and pasting each question, but in bulk). This might require an interface. I would also like documents I upload to Seaport for one semester, to be viewable when I am determining what to post/use in a subsequent semester and/or entirely different class. Finally, I would like to explore using twitter to update class events or notices.
5. Remote Desktop Gateway: so I don't have to always drive to the other sites to provide tech support. A gateway is any computer that connects two networks that use different network protocols. A gateway reformats information from one network so that it's compatible with the other network. A Remote Desktop Gateway (RD Gateway) server is a type of gateway that enables authorized users to connect to remote computers on a corporate network from any computer with an Internet connection. RD Gateway uses the Remote Desktop Protocol (RDP) along with the HTTPS protocol to help create a more secure, encrypted connection. In earlier versions of Remote Desktop Connection, people couldn't connect to remote computers across firewalls and network address translators because port 3389—the port used for Remote Desktop connections—is typically blocked to enhance network security. However, an RD Gateway server uses port 443, which transmits data through a Secure Sockets Layer (SSL) tunnel. An RD Gateway server provides these benefits: Enables Remote Desktop connections to a corporate network from the Internet without having to set up virtual private network (VPN) connections. Enables connections to remote computers across firewalls.
6. I want to see where we should best put our limited resources.
7. We don't need NEW technology. We need people, training and support to handle the existing technology.
8. I would love it!!!
9. Helping or training faculty, staff and administrators how to use current technology. Have taken classes on my own to learn additional information, but would like to learn more. I am not aware of some of the current updated technology and would like to learn more of what is out there and how to use it.
10. Make more processes automated which helps in time management and statistical gathering
11. Centralize information so that all who need it can access it, in order to improve efficiency and avoid duplication of effort.
12. Improve communication within departments and communication within the college
13. By organizing responsibilities and assisting students.
14. Introductions of green energy programs such as solar, wind, etc. More emphasis on cloud computing and online offsite record storage.
15. In every way possible. Dedicated staff, knowledge and technology is the power that drives an organization.
16. I would like to use technology to make communicating information between staff more efficient. Sometimes email isn't quick enough.
17. Our new manager is implementing a new portal to make out department more efficient. Enrollment growth and service expected.

Question 19: Given unlimited resources, what would be your vision of technology for your department/program and the college?

1. have electronic educational plans, have more current and new articulation agreements, have more resources to search for college programs degree majors for students to transfer to,
2. Elimination of basic paperwork such as work orders and invoices -- should all be electronic. Also, peer training.
3. To keep up with innovations.
4. to have the website be more user friendly, to both students and staff. to allow for the development of solutions for individual departmental needs.
5. All class resources available online, and viewable on all devices from smartphone, Ipod, tablet to desktop. I would have podcasts and vodcasts of lectures, and make those the primary teaching platform, with class time used to provide individualized student assistance and/or group projects. I would have a library of mini-lectures on appropriate topics. The media would be downloadable to PDAs, etc. so they would be portable (to be listened/watched whenever time allows, without the need to connect to the internet. The pod/vod casts would be bookmarkable, so a student to stop/start as needed, without having to waste time finding where he left off the last time. A student's pace would be adaptable to the student's abilities, depth of interest, etc, so that if extra time is needed to absorb a topic, the student isn't forced to leave that topic take on a new topic, just because that's what the syllabus calendar requires. With on-demand assistance, and 24/7 access to lectures, I believe I could provide an enhanced educational experience to my students.
6. No "desktop computers". End users connected to our internal private, redundant cloud at the district. Getting away from expensive Micro$oft desktop software. For students: course content and student feedback via podcasts and iTunes. Encrypted & authenticated Wi-Fi for students and employees behind a firewall.
7. virtualization of student computers
8. Access to instructor syllabus'. Digital records for Archives. Technology staff that is appropriately responsive to the importance of the jobs that we do and does not discount us. Training to use the programs we already have- with limited staff training is not possible.
9. A staff of AT LEAST 20 IT people dedicated for software support, training and helpdesk, this excludes software development of SEAPORT.
10. To have the new technology in our dept in the next couple of years.
11. Skype for long distance conference calls. How to use newer equipment and learning what is out there.
12. Several dedicated computer labs for our academic program. Instructor paid computer lab time where students can come in and work with instructor
13. I would have online training sessions for our clients and a better online system to help case managers
14. The CS team would be certified and well-trained to support hardware, network, and web for Coastline employees. They would be part of the leadership team that plans the IT side of the college growth and sustainability.
15. Banner/MyCCC that works all the time, Seaport rules that do not change without notice.
16. Expand the Medical program to include electronic medical records; medical database management using the equipment that doctors, hospitals, and medical professional are using not just simulations. HIPA programs.
17. To be advised and trained on technologies that are available. Currently, all the departments fend for themselves and there is no cohesive technology roadmap.
18. I think a better question might be, "If you had (a specific dollar amount/# of personnel), what would be your vision...?" When questions are stated in a 'wishful thinking' context, most people are unable to respond because they need the parameters first. However, to answer the question my answer is simple: Apples for everyone! I don't say that because I'm a 'fanboy'; I say it because I 'have' to use a PC at work but I prefer to use a Mac at home.
19. Given unlimited resources, staff members should be equipped with the necessary tools required to effectively and efficiently do their jobs, whether it be faster computers, video conferences, a student portal that is easy to navigate and user friendly. As a distance learning college supposedly at the forefront of technology, we need to look the part.
20. Do these resources include better administrators and support in computer service? if leadership is missing, which it is, it makes no sense is investing in new technology.

Question 20. What are the most interesting developments in information and education technology that you are aware of (either available now or coming in the future) that Coastline Community College and its instructors should consider?

1. There are tons of websites that students can go and get help.
2. Counseling equivalency tools among universities and colleges, technology that allows program/degree comparison requirements among universities, secure and efficient methods for Admissions and records procedures
3. Chat, iConferencing and intense week-long peer training.
4. The use of Ipads and ereaders
5. I'm not aware of any specific change in educational technology. But, I am aware that my students are increasingly 'wired natives', and I'm new to what they know. E.g., email is becoming passé, vs. twitter and texting. I would like to see how I can adapt my teaching to reach students using the 'everyday technology' of their lives.
6. Open Learning Initiative http://oli.web.cmu.edu/openlearning/initiative
7. Virtualization
8. E-textbooks.
9. EMAIL and internet security!!!
10. Smart Boards, IPads, e-readers, etc.
11. Creating Gaming applications for topics is very time consuming but crucial
12. Smart Phones and iPad type technology to learn by
13. Don't know. Just want what we have to work first.
14. Wider use of collaborative departments such as accounting, economics, business, and information technology. Much of the content could be combined in much more robust classes that deal with real world issues. While many instructors dwell in the past teaching theory while in reality they should be teaching more practical applications that engage students and excite their interest.
15. Technology is emerging rapidly (i.e. Android web-based tablets). The college should exploit these web-based technologies to assist the college and the students with efficient, cost-effective systems needed for brick-n-mortar and online education. Currently, the college lacks a cohesive direction for global, integrated technology. The ol' adage of publish or perish holds true for the institution - adapt and innovate or become obsolete.
16. I'm not answering this question but I'm making a comment: I avoid Microsoft products whenever possible including hardware, such as Zune and/or MS-based phones.
17. As a student myself, who attends both traditional and online classes, I love having my textbooks available via e-readers. I've used Seaport, Blackboard, and Desire2Learn. I have yet to see or use a system that will allow for a real-time interaction with the instructor via video conference or chat. I'm not particularly fond of discussion boards because they don't really offer instant feedback which is what most student find important.
18. Mobile applications, the iTunes store and service for smart phones and tablets. I am aware of a partnership between CCC and OCC to develop mobile apps.

Appendix III: Vision 2015 Technology Proposal

Technology Committee 2010-2011

Infrastructure Needs

By 2015 the College shall significantly develop and improve the College's Infrastructure by:
Establishing & maintaining a secure, high speed data pipeline that supports College needs for data, video delivery, graphic user environments, educational social networks applications, Web 2.0, and external contract needs.
Establishing a reliable server network solution, either internally and/or externally, that optimizes performance, 24/7 access, security and peak traffic demands.

Providing a safe secure ubiquitous wireless access solution from ALL College sites and centers for faculty, staff, and students.
Providing a network bandwidth solution that can support the need for high-speed multimedia applications to the desktop including effective educational applications of Web 2.0, just-in-time help, and self-help to improve critical skills.

Communication Needs

By 2015 the College shall establish a state-of-the art Communications infrastructure that exceeds all needs by:
- Reducing the cost of travel and meeting attendance by providing desktop conferencing solutions and technical support for regular meetings and training activities by College constituents.
- Creating smarter Web sites that offer easy navigation and access, with better media support, and more self-help options to meet public expectations in a highly mediated world.
- Establish access protocols for Cell phone and mobile access to College information services, courses and other educational resources.
- Establishing easy system access to collaborative communications software solutions, including Wikis, Skype, Facebook, You-Tube, Twitter, RSS feeds, 2nd Life, and other popular communication systems our students are using every day.

LMS (Seaport) Directions

By 2015 the College shall continue to develop, improve, and market the College's Seaport Learning Management system by:
- Adding additional features and capabilities identified by instructional staff and faculty to support course, distance learning, and classroom needs.
- Adding features and flexibility to Seaport to allow use for contract education, military, and external marketing purposes, and as a revenue source.
- Marketing Seaport to educational institutions worldwide.

Classroom Technology Needs

By 2015 the College shall provide for effective state-of-the art classroom learning environments by:
- Equipping designated College classrooms with audio/video display technology hardware.
- Providing automated of lecture capture systems/strategies for later viewing by students in selected courses, as approved by faculty.
- Providing selected sites with external outreach hardware to permit real-time and delayed Webcasting (Podcasting/Vodcasting) of classes, or linkage to external sites for dual class activities or connections.

Training Needs

By 2015 the College shall provide for an effective state-of-the art training environment by:
- Continuing to operate the Summer Technology Institute to provide professional skill building and to improve the quality of educational support and instruction that the College offers.
- Providing for new strategies for just-in-time training and training outreach to the desktop, enabling staff and faculty to access support and assistance for needed tasks and education at their local work station, at their own schedule using Camtasia, archived files, mini-lessons and other techniques.

- Providing more self-help/online training for students enabling the better use of College systems, information access, and improved course performance.
- Schedule educational Webinars (brown bag lunch activities for example) from both internal and external sources to improve College staff and faculty skills and knowledge.

Portable Convergence Goals

By 2015 the College shall recognize and leverage the convergence of mobile technology in the public sector and military by:
- Providing for access to courses and information from hand-helds, cell phones, iPads, and other portable devices.
- Promoting and supporting the development and effective use of educational strategies for delivering content on mobile devices.

Serious Simulations

By 2015 the College shall take advantage of the capabilities of both Web 2.0 and 3-0, and the growing potential of 3-d worlds and simulations, the high student participation in videogame-like activities, and the new opportunities for course support by:
- Creating a Coastline Virtual Campus in 2nd life to offer student services, student-faculty support opportunities, a virtual community meeting place for widely dispersed Coastline students, education fairs, an R&D location for new course development in a variety of disciplines.
- Developing commercially marketable 3-d and educational simulations supporting educational missions for ISD and contract education (examples- Virtual Emergency Operations Training Center, and Allied Health Care simulations, Refinery Operations, et al).

Virtual Labs Development

By 2015 the College shall take advantage of the ability to effectively meet identified science and other laboratory objectives through the use of Web 2 and 3 delivery and the cost savings potential of virtual environments, delivered at a distance by:
- Building selected virtual lab enhancements which can be used to extend, supplement and improve the quality of existing laboratory experiences in a variety of disciplines (language, technology, math, sciences).
- Building a number of selected laboratory   simulations which can be marketed and sold externally through ISD

Knowledge Garden

By 2015 the College will facilitate faculty access to a repository of educational resources and media which can be selected to enhance the quality of the College's educational offerings by:
- Building easy to use pathways to the (Educause, Merlot and similar) databases of free media materials.
- Designing component connections into Seaport which allow faculty to manage student contributions of materials within courses (drop boxes, course assignment uploads, shared presentations, wikis, PowerPoints, etc.)
- Improving and enhancing the College's Library resource Web site by facilitating access to resource materials and support processes

Educational Directions & Aspirations

By 2015 the College will realize the importance of the continuing quest for excellence in education, leading to the facilitation of higher order critical thinking and skill sets by:
- Encouraging and expanding Coastline College as a "learning organization" where not only students, but faculty, staff, and administrators continue to improve their own skills and abilities.
- Continuing the quest for convenience, effectiveness, and time compressed learning opportunities for students and College constituents.
- Continuing to encourage the examination of the definitions of "teaching and learning" through innovative and creative explorations, research and development projects, new technology applications, grants activities, and individual initiative in departments, disciplines and units.

Appendix IV: Center for Instructional Systems Development – Recommended Technology Priorities 2007-2012

Recommendation	Benefits	Driver/Considerations
High-speed data pipeline	System demands, failure issues, performance needs, peak periods demand	Social networks, video, graphics, audio, Web 2.0 demands, contracts
Co-located/Hosted Servers	Reliability, Bandwidth needs, 24-7 up-time, security, maintenance costs, peak periods	24-7 expectations, world-wide operations, contracts
Ubiquitous Wi-Fi access	Connectivity, convenience	Public expectations, mobile devices, student equipment
High speed multimedia desktops	Performance and software issues, productivity	Web 2.0 applications, at-desk training, communications
Desktop conferencing	High travel costs, scheduling issues, technology of cameras, software has improved	Reduced desktop costs, public awareness
Smarter Web sites	Increased options for interactive data-bases, Web 2.0 capabilities	Public expectations, competition
Social Networking	Develop better collaboration (faculty-student, student-student, faculty-faculty)	Wikis, blogs, Facebook, Twitter, RSS, 2nd Life
Continue Seaport development to meet faculty/student needs	Huge LMS cost savings, flexibility, connectivity, ease of use, user satisfaction, training ease	Perfect development platform for hand-held convergence, (Military notes)
External Marketing of Seaport	Connects ISD products, opens new markets to, contract ed, gov. agencies, schools	Widely discussed demand- dissatisfaction with current market products, costs
ISD development for other LMS and mobile environments	ISD needs to develop LMS/mobile agnostic content delivery platforms	Multiple LMS environments used nationally
Presentation hardware in the classroom	Audio/video display, computer display helps deliver quality content	Research examples, motivation, quality, organization issues
Capture hardware in the classroom	Lecture capture	Re-usability, review for students
External outreach hardware in the classroom	Multi-modal, Internet, video conferencing	Deliver local content to a larger or distant audience
Prof Dev -Summer Institute continuance, expand to online participation, Brown Bag seminars	Maintain quality workforce, informative, compressed, fun	Good attendance, well accepted, costly to travel others emulating, upgrades staff/faculty skills
Training to the Desktop (just in-time learning at your desktop)	Costs for traditional training, convenience, improved software options	Re-usable, reviewable, privacy

More Self-help roadmaps, orientations, skills prep, information, etc.)	For students, for staff, for public, 24-7 needs, convenience, available online	Online access expectations, reduced costs, improved services
Webinars	Cost effective, outside experts, any topics	Archives for professional development review
Cell access to College resources	High demand, public expectations, hardware, software improvements	Public usage, expectations, hardware costs, widespread cell access
PDA, IPADS, Tablet computers, netbooks	Exciting opportunities- new delivery methods, hybrid options, readers, multi-media delivery, convenience, portability	Public promotion, excitement, marketing opportunities for ISD
Hybridization of content	Can mix & match student needs, learning styles	Studies supporting
Electronic access to textbooks	Public perception, costs Convergence of courses & textbooks, e-readers	Public pressures, legislation Kindle, IPAD, digital book initiatives
Electronic business opportunities- ISD course materials	Costs, market opportunities	Public pressures, legislation, Chancellor's Office project
Create CCC "Virtual Campus " with services student support elements	50-60% CCC off campus students, travel issues, convenience, 24/7 access	expectations for remote Student services, competitive markets, millions visit 2nd Life
"Classroom" outreach through Virtual environments	Supports Hybrid teaching, time savings, extensions of classroom, field trips	Virtual classrooms, math lab, art gallery, social sites, EOC, Military support, et al
Learning games, social networking, interactive learning /content	Demonstrated interest, effectiveness, reinforcement, satisfaction	Videogame engagement, social networks numbers
Simulations of science & other labs (medical, marine science, geology, chemistry, et al)	Real lab costs, convenience factor, safety, replicability, access, DL needs, time factors, travel	Widespread interest & National discussion , military training examples, public examples, healthcare examples, competition, proven track record
Other authentic Labs/experiences (foreign languages, ESL, social sciences, EOC, green technology)	Real lab costs, convenience factor, safety, replicability, access, DL needs, time factors	Student population experienced with simulated worlds/gaming
A smart library of resources and media materials	Currently difficult to organize and access varied copyrighted materials, user can add content	Keys to the world of knowledge, licensed, beyond the Internet
ISD opportunities	New market options for ISD content	Content interest /needs by customers
Learning repository	National / new markets, District faculty access	Merlot interest, publisher sites
Student Contributed Content	Relevant, topical, students as contributors, Andragogy, low cost access	You-Tube, Flickr, Wikis, Facebook, Delicious, Ning, personal Web-pages, LuLu
Continue R&D , training , and course development leading to higher order/ critical thinking, problem based learning, authentic experiences	More competitive, what employers ask for, critical to national development, targeting accreditation standards	Research on learning, faculty effectiveness, student satisfaction, learning objectives

Training anytime, anywhere, on any platform	Time, convenience, space, work, lifestyle factors	All DOD education moves to digital/mobile- a new world of factors
New definitions of "Learning" & "Teaching" visualization, augmented reality, component learning	Relevant to evolving learning styles, appeals to human senses, fun, relates to 21st century world	Shares access, cost effective, accesses the un-accessible (Mars rover, inside of cell, etc.)

Appendix VI: Gartner's Hype Cycle
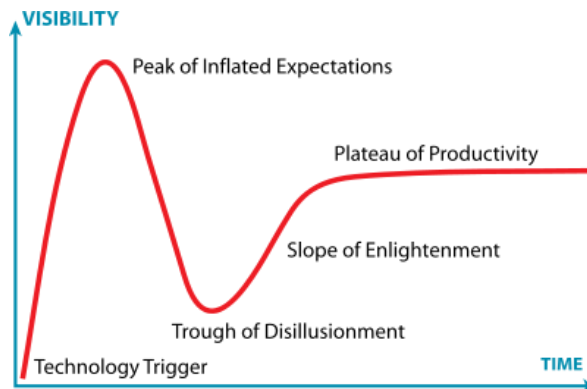
Figure 1 – Gartner Hype Cycle

Interpretation & Relevance for Future Planning

1. "Technology Trigger" — The first phase of a hype cycle is the "technology trigger" or breakthrough, product launch or other event that generates significant press and interest.
2. "Peak of Inflated Expectations" — In the next phase, a frenzy of publicity typically generates over-enthusiasm and unrealistic expectations. There may be some successful applications of a technology, but there are typically more failures.
3. "*Trough of Disillusionment*" — Technologies enter the "trough of disillusionment" because they fail to meet expectations and quickly become unfashionable. Consequently, the press usually abandons the topic and the technology.
4. "*Slope of Enlightenment*" — Although the press may have stopped covering the technology, some businesses continue through the "slope of enlightenment" and experiment to understand the benefits and practical application of the technology.
5. "*Plateau of Productivity*" — A technology reaches the "plateau of productivity" as the benefits of it become widely demonstrated and accepted. The technology becomes increasingly stable and evolves in second and third generations. The final height of the plateau varies according to whether the technology is broadly applicable or benefits only a niche market.

Hype Cycle for Emerging Technologies & Education

1. Students are leading the change via social software, user generated media and consumer IT devices.
2. Professors are decreasing their dependency on technology delivered by their institutions and going for more autonomously controlled solutions.
3. "*Virtual environments / virtual worlds*" is the item at the Peak of Inflated Expectation and hopefully it will get through the resultant disillusionment to become a mature, productive technology.
4. *RFID for Library Managment*" is making its way up the slope of enlightenment.
5. Learning content seems to be the most changeable and hard to predict, with "*Podcasting Learning Content*" and "*IP Video for E-Learning*" becoming obsolete before they plateau, due to being absorbed as part of other technologies like social networking tools.
6. *Lecture Capture and Retrieval Tools*" are just beginning to climb.
7. *Web Based Office Productivity Suites*" (climbing up toward the Peak of Inflated Expectations)
8. "*Cloud E-mail for Higher Education*"
9. *Personally Owned Devices with Campus Network Access*" and "*Tablet PCs*".
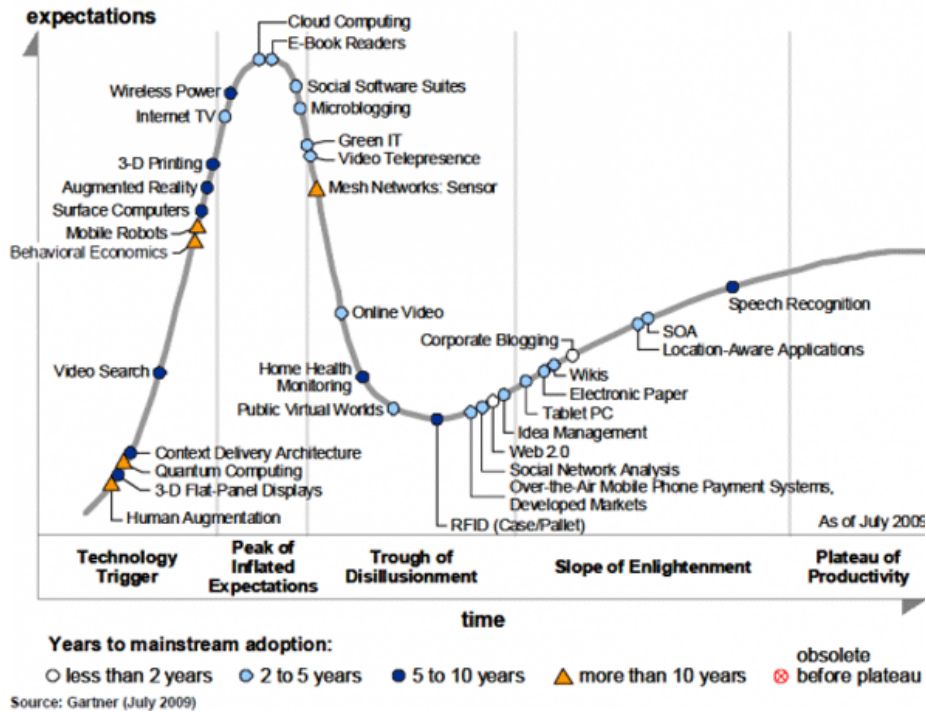
Figure 2 – Hype Cycle for Emerging Technologies

Appendix VII: Glossary

Context
- ⊕ **A/V & Media**
- 🖥 **Computing & Information Technology**
- 📂 **Business & Industry**
- 📖 **Teaching & Learning**

1. **3-D Television (3DTV)** – ⊕ Television that conveys depth perception to the viewer by employing techniques such as stereoscopic display, multi-view display, 2D-plus-depth, or any other form of 3D display. Most modern 3D television sets use an active shutter 3D system or a polarized 3D system and some are autostereoscopic without the need of glasses.

2. **3-D Visualization** – ⊕ Refers to a variety of technologies that provide a real-life 3D visual appearance that is displayed in print, in a computer, in the movies or on television. 3D in this context, also called stereoscopic imaging, stereo 3D, 3D stereo and 3D imaging, differs from 3D graphics, 3D computer-aided design (CAD) and regular 3D animations. Such images may be rendered as 3D objects, but viewers clearly do not sense real depth.

3. **4G** - 🖥 Fourth-generation mobile phone networks are still in development. They are expected to be IP based and allow seamless roaming between different kinds of networks. The International Telecommunication Union (ITU) specification for 4G services are for data rates of 1Gbps with a stationary client and 100Mbps with a moving client. 4G services are expected to appear around 2010–15.

4. **508, Accessibility Regulations** – 📂 Section 508 of the Federal Rehabilitation Act requires that all media-based teaching, learning, and information resource or website at public higher education institutions be accessible to people with disabilities.

5. **802.11** - 🖥 Institute of Electrical and Electronic Engineers (IEEE) standards for wireless local area networks (WLANs), more commonly referred to as Wi-Fi. Currently 802.11b (11Mbps), 802.11g (54Mbps) and 802.11a (54Mbps) are the main standards. 802,11b and 802.11g work in the 2.4GHz frequency, and 802.11g is backwards compatible with 802.11b. 802.11a works in the less crowded 5Ghz frequency range and is not compatible with the other two standards. The 802.11n, standard, which is yet to be ratified, should allow real-world data rates exceeding 100Mbps. There is also a range of other 802.11 standards such as 802.11i – wireless security – and 802.11e – QoS for wireless networks.

6. **Accessibility** – 📂 A characteristic of technology that enables people with disabilities to use it. For example, accessible Websites can be navigated by people with visual, hearing, motor, or cognitive impairments. Accessible design also benefits people with older or slower software and hardware.

7. **Acquired Brain Injury (ABI) Program** – 📖 A world-renowned Coastline program designed to provide structured cognitive retraining for adults who have sustained a brain injury due to traumatic or non-traumatic injuries

8. **Active Learning** – 📂 An umbrella term that refers to several models of instruction that focus the responsibility of learning, on learners.

9. **ADDIE Model** – 📖 Acronym for the classic instructional system design model created by the Center for Educational Technology at Florida State University for the U.S. Army and quickly adapted by all the U.S. Armed Forces. ADDIE Model is a process that includes the steps *Analysis, Design, Development, Implementation*, and *Evaluation* from which the acronym is taken.

10. **ADL** – 📖 *See* **Advanced Distributed Learning (ADL)**.

11. **Advanced Distributed Learning (ADL)** – 📖 Initiative launched by the U.S. Department of Defense in the late 1990s to achieve interoperability across computer and Internet-based learning courseware through the development of a common technical framework, which contains content in the form of reusable learning objects. ADL is now a collaboration between government, industry, and academia. The purpose of the ADL is to ensure access to high-quality education and training materials that can be tailored to individual learner needs and made available whenever and wherever they are required. The ADL maintains a set of guidelines under the acronym SCORM to accomplish their purpose.

12. **Agnostic Technology** – 🖥 A term describing the capacity of software, hardware, and/or systems to integrate or work with another compatible system. In information technology (IT), agnostic refers to the ability of something – such as software or hardware – to work with various systems, rather than being customized for a single system.

13. **AICC** – 📖 *See* **Aviation Industry Computer-Based Training Committee (AICC).**

14. **Alternate Reality Games (ARG)** – 📖 An alternate reality game (ARG) is an interactive narrative that uses the real world as a platform and uses transmedia to deliver a story that may be altered by participants' ideas or actions.   The form is defined by intense player involvement with a story that takes place in real-time and evolves according to participants' responses. Subsequently, it is shaped by characters that are actively controlled by the game's designers, as opposed to being controlled by artificial intelligence as in a computer or console video game.

15. **Ambient Web** – 💻 Persistently website displaying dynamic information constantly being updated, i.e., *Blade Runner* world, where characters were surrounded by connected information screens, Ambient website will constantly be updated by user interactions, omnipresent cameras, dynamic analytics of user actions, etc.

16. **Analytics** – 💻 The discovery and communication of meaningful patterns in data. Especially valuable in areas rich with recorded information, analytics rely on the simultaneous application of statistics, computer programming and operations research to quantify performance. Analytics often favors data visualization to communicate insight.   The most common application of analytics is the study of business data with an eye to predicting and improving business performance in the future.   Other fields within the area of analytics are enterprise decision management, retail analytics, marketing and web analytics, predictive science, credit risk analysis, and fraud analytics.

17. **Andragogy** – 📖 Approach to education promoted by Malcolm Knowles and based on assumptions about adult learning, including (1) Adults need to know why they need to learn something, (2) Adults need to learn experientially, (3) Adults approach learning as problem-solving, and (4) Adults learn best when the topic is of immediate value. These should be taken into consideration as we think about adult distant learners.

18. **API** – 💻 *See* **Application Programming Interface**.

19. **Application Programming Interface** – 💻 An interface specification used to enable software components to communicate with each other.   API specifications take many forms, including International Standard such as POSIX or vendor documentation such as the Microsoft Windows API, or the libraries of a programming language.

20. **Assessment** – 📖 The process used to systematically evaluate a learner's skill or knowledge level.

21. **Assignments** – 📖 Work produced by students and used by instructors for purposes of interaction and also evaluation.

22. **Asynchronous Collaboration** – 📖 Type of collaboration that is characterized by the degree of independence collaborators have from one another regarding the constraints of time and place.   Asynchronous collaboration allows participants with limited need for real-time communication to interact across multiple time zones spanning many locations in an iterative fashion building or reacting to the work of others.

23. **Asynchronous Learning/Training** – 📖 Learning in which interaction between instructors and students occurs intermittently with a time delay. Examples are self-paced courses taken via the Internet or CD-ROM, Q&A mentoring, online discussion groups, and email.   A learning program that does not require the student and instructor to participate at the same time.

24. **Audio Streaming** – ⊕ A one-way audio transmission over a data network widely used on the Web or networks to play audio clips.   Computers in home networks stream audio (mostly music) to digital media hubs connected to home theaters. Unlike sound files that are played after the entire file has been downloaded and stored, streaming audio begins playing after only a small amount is received, and the audio data are not stored permanently in the destination computer.   If the streaming audio is broadcast live, it may be called "real-time audio.

25. **Audio-Bookmarking** – 💻 A method for Internet users to mark or tag specific parts and/or points in an audio clip and/or audio stream to for future reference, ranking, and/or organization.   *VoiceThread* is a widely used interactive audio-social-utility that enables users to tag and/or bookmark what they term as voice-threads.

26. **Aviation Industry Computer-Based Training Committee (AICC)** – 📖 An international association of technology-based training professionals that develops training guidelines for the aviation industry. AICC has and is developing standards for interoperability of computer-based and computer-managed training products across multiple industries.   AICC concepts are the foundation for subsequent work by ADL, IMS, and others.

27. **Augmented Reality (AR)** – 💻 A type of virtual reality that combines real and imagined images and/or integrated interface tools (heads-up-displays, haptic devices, game-consoles/Wii, etc.) in real-time to augment ones vision of the environment and interactions with objects in the environment.

28. **Authoring** – 💻 A structured approach to developing all elements of a unit of instruction, wherein developers assemble discrete media components using a tool called an authoring system.

29. **Authoring System or Authoring Tool –** 📖 A software application or program used by trainers and instructional

designers to create e-learning courseware. Types of authoring tools include instructionally focused authoring tools, Web authoring and programming tools, template-focused authoring tools, knowledge capture systems, and text and file creation tools.   A program, like Macromedia Authorware, designed for use by a non-computer expert to create training products. An authoring system does not require programming knowledge or skill to operate. Enables non-programmers to create e-learning programs. (Other example include: SoftChalk, Raptivity, etc.)

30. **Automated Alert Systems** – 📖 Term used to define a machine-to-person communication (i.e., LMS or ERP to student and/or faculty/counselor) that is important and/or time sensitive. An alert contains user-requested (predefined) content such as a reminder (important), a notification (urgent), and ultimately an alert (important and urgent), e.g., performance on tests, current average grade (above and/or below) class average, etc.

31. **Automated Interactive Note-Taking** – 📖 Automated interactive tools, applets, and/or systems that facilitate note-taking in an interactive learning environment, e.g., highlighting, copy and paste, bookmarking, linking, etc.

32. **Avatar** – 🖥️ In online environments, a virtual digital image representing a person. In e-learning avatars usually represent the learners. The term comes from a Sanskrit word meaning an incarnation in human form.

33. **Backbone –** 🖥️ A primary communication path connecting multiple users.

34. **Backchannel Communication** – 📖 The practice of using networked and/or web-based systems to maintain a real-time online conversation alongside live spoken remarks. The term was coined in the field of Linguistics to describe listeners' behaviors during verbal communication. The term backchannel generally refers to online conversation about the topic or the speaker. Occasionally backchannel provides audience members a chance to fact-check the presentation. First growing in popularity at technology conferences, backchannel is increasingly a factor in education where WiFi connections and laptop computers allow students to use ordinary chat like IRC or AIM to actively communicate during class.

35. **Band** – 🖥️ A range of frequencies between defined upper and lower limits.

36. **Bandwidth** – 🖥️ The measure of amount of information that can flow through an information channel, commonly measured in bits per second. Modem connection to an internet server is a typical example of a low-bandwidth connection; an Ethernet connection within a LAN is an example of a high-bandwidth connection.

37. **Banner ERP Modules** – 🖥️ SCT SunGard Banner Enterprise Resource Planning (ERP) System is an integrated database systems developed by Systems and Computer Technology (SCT).   SCT's Banner ERP software solutions consist of six core modules—Banner Student, Banner Finance, Banner Human Resources, Banner Financial Aid, Banner Advancement, and Web-based Integration (Banner Luminis). Other specialized modules are available.

38. **Banner Workflows** – 🖥️ Banner Workflow automates, simplifies, and directs the flow of information across an institution. Business events trigger the appropriate business process logic, rules, and conditions. Activities requiring manual triggers—notifications, approvals, and other processes—happen automatically, speeding completion of tasks and accuracy.

39. **Basic Interoperability Data Model (BIDM)** – 🖥️ A data model for storing and exchanging metadata. The purpose of BIDM is to define the minimal set of information about assets that reuse libraries should be able to exchange in order to support interoperability.

40. **Benchmark** – 📁 A process of comparing one's organization's processes and/or performance metrics to industry bests or best practices from other industries. Dimensions typically measured are quality, time and cost. In the process of benchmarking, management identifies the best firms in their industry, or in another industry where similar processes exist, and compare the results and processes of those studied (the targets) to one's own results and processes.

41. **Best Practices** – 📁 The adoption of work practices which, when effectively linked together, can be expected to lead to sustainable world-class outcomes in quality, customer satisfaction, flexibility, timeliness, innovation, and cost-competitiveness.

42. **Blackboard LMS** – 📖 A virtual learning environment and course management system developed by Blackboard Inc. Features include course management, a customizable open architecture, and a scalable design that allows for integration with student information systems and authentication protocols. It may be installed on local servers or hosted by Blackboard ASP Solutions. Its main purposes are to add online elements to courses traditionally delivered face-to-face and to develop completely online courses with few or no face-to-face meetings.

43. **Blended** – 📖 Using more than one learning medium or modality in addition to instructor led activities.   Classroom teachers use a form of blended learning—lecture, discussion, practice, reading, projects, and writing.

44. **Blended Learning** – 📖 A training curriculum that combines multiple types of media. Typically, blended learning refers to a combination of classroom-based training with self-paced e-learning.

45. **Blog (Weblog)** – 🖥 A discussion or information site published on the World Wide Web consisting of discrete entries (posts) typically displayed in reverse chronological order so the most recent post appears first. Blogs usually contain links to other Websites along with the thoughts, comments, and personality of the blog's creator. Blog is short for Web Log and refers to short messages that are posted onto a web site by an author.

46. **Bloom's Taxonomy** – 📖 A hierarchical ordering of affective and cognitive learning outcomes developed by Benjamin Bloom.

47. **Bluetooth** - 🖥 A short-range wireless technology. It is mainly used to connect devices and peripherals such as mobile phones, headsets, printers and cameras. The most common Bluetooth standard has maximum data rates of 721Kbps, but the newer Bluetooth 2 (Enhanced Data Rate) allows for speeds up to 2.1Mbps.

48. **Bobby** – Free online tool developed to validate websites for WAI and Section 508 compliance written by Josh Krieger and provided by the Centre for Applied Special Technology (CAST).   This CAST service ended in May 2005. The software is now available via IBM's Rational Policy Tester Accessibility Edition. As an alternative, the Web Accessibility Evaluation Tool (WAVE) is available as a free service at http://wave.webaim.org.

49. **Bookmark** – 🖥 A Webpage link stored in a browser for quick and easy retrieval.

50. **Browser** – 🖥 A software application that displays World Wide Web pages originally written in the text-based HTML language in a user-friendly graphical format. Also called a Web Browser. A program used to access the text, graphic, audio, video and animation elements of the Internet and Intranets. Microsoft Internet Explorer, Firefox Chrome, and Safari are the most commonly used browsers.

51. **Business Continuity Plan** – 📁 Integrated documents, instructions, procedures, plans, and action scenarios that enable an organization to respond to accidents, disasters, emergencies, and/or threats without any stoppage or hindrance in its key operations. Also called business resumption plan, disaster recovery plan, or recovery plan.

52. **Business Requirements** – 📁 The conditions an e-learning solution should meet to align with the needs of such stakeholders as the content developer, subject matter expert, learner, manager, and training administrator.

53. **CAI** – 📖*See* **Computer-Assisted Instruction (CAI).** Also known as computer-aided instruction; computer-assisted learning (CAL).

54. **Camtasia** – 🖥 Software published by TechSmith used for video screen capturing and video and audio editing.

55. **Captioning** – ♿ The process of displaying text on a television/video or computer screen, or other visual display device to provide additional or interpretive information to individuals who wish to access because of a visual, hearing, or learning impairment. There are typically three general categories of captioning for media, e.g., closed captioning (requires special hardware and/or software to read), open captioning (visible at all times), and descriptive captioning (audio description of all audio and visual elements for the blind).

56. **Career and Technical Education Programs (CTE)** – 📖 Provides industry-linked programs and services that enable student to reach career goals.

57. **Case Study** – 📁 A scenario used to illustrate the application of a learning concept. May be either factual or hypothetical.

58. **CBE** – 📖 *See* **Computer-Based Education (CBE).**

59. **CBL** – 📖 *See* **Computer-Based Learning (CBL)**.

60. **CBT** – 📖 *See* **Computer-Based Training (CBT)**.

61. **CD-ROM** – 🖥 See **Compact Disc Read-Only Memory.**

62. **Certification** – 1) The awarding of a credential acknowledging that an individual has demonstrated proof of a minimum level of knowledge or competence, as defined by a professional standards organization. Professional certification can be used as a screening tool and verification of an individual's skills and knowledge. 2) Program that evaluates products or tools according to predetermined criteria.

63. **CompactFlash (CF)** - 🖥 A flash memory format introduced in 1994 by SanDisk Corporation (www.sandisk.com).   CF cards are larger than other flash cards, but are popular storage in digital SLRs.

64. **Chat** – 🖥 Real-time communication, text or voice. Generally, messages disappear when the session is over.

65. **Chat Room** – 🖥 Text-based group communication space on the Internet. Multiple users can type their questions and answers for everyone to see. This form of group communication occurs in real-time.

66. **Chunk** – 📖 A discrete portion of content, often consisting of several learning objects grouped together. (verb) To separate content into discrete portions or aggregate smaller content elements into customized configurations.

67.   **Chunking** – 📖 The process of separating learning materials into brief sections in order to improve learner comprehension and retention.

68.   **Citizen Journalism** – 📁 The concept of individual citizens playing an active role in the process of collecting, reporting, analyzing, and disseminating news and information via new technology, e.g., blogs, micro-blogs, video streaming, etc.

69.   **Classroom Training/Instructor Led Training (ILT)** – 📖 Any training conducted where the students and facilitator interact in a real, physical classroom.

70.   **Clip Media** – 🔊 Pre-existing pictures, audio files, videos clips that can be clipped out and pasted directly into a computer program. Also known as *stock media*.

71.   **Cloud Based Computing** – 💻 Cloud computing is a type of computing that relies on sharing computing resources rather than using local servers or personal devices handle applications. In cloud computing, the word cloud is used as a metaphor for *the Internet*, so the phrase *cloud computing* is used to mean a type of Internet-based computing, where different services—such as servers, storage, and applications—are delivered to an organization's computers and devices through the Internet.

72.   **CMI** – 📖 *See* **Computer-Managed Instruction**.

73.   **CMS** – 💻 *See* **Content Management System.**

74.   **CoD** – 💻 The acronym *Content on Demand.* Delivery of an offering, packaged in a media format, anywhere, anytime via a network. Variants include audio on demand (AoD) and video on demand (VoD).

75.   **Codec** – 🔊 The acronym for *Coder/Decoder.* Device used to convert analog signals to digital signals for transmission, and to reconvert signals upon reception at the remote site, while allowing for the signal to be compressed for less expensive transmission.

76.   **Cognitive Loading** – 📖 The process of placing elements into a person's short-term memory.

77.   **Cognitive Theories** – 📖 Follows the interest in the internal processes of the brain and learner's prior knowledge and learner style.

78.   **Collaboration Technology** – 💻 Software, platforms, or services that enable people at different locations to communicate and work with each other in a secure, self-contained environment. May include capabilities for document management, application sharing, presentation development and delivery, whiteboarding, chat, and more.

79.   **Collaborative Annotation** – 💻 An interactive environment where users can highlight specific content on a web page and/or add a note explaining their thoughts. In collaborative annotation environments users can highlight text or images, add their own comments, and share those annotations with colleagues and friends. Bookmarks and comments can be grouped and tagged to provide organization. Students who use these tools for academic research can, over time, build a collection of their own studies and observations in much the same way generations of students have saved texts with dog-eared pages, highlighted passages, scribbled comments, and sticky notes.

80.   **Collaborative Editing** – 💻 Making changes to a document or drawing by two or more people in synchronously or asynchronously.   The practice of groups producing works together through individual contributions. Effective choices in group awareness, participation, and coordination are critical to successful collaborative writing outcomes.

81.   **Collaborative Filtering** – 💻 The process of filtering for information or patterns using techniques involving collaboration among multiple agents, viewpoints, data sources, etc.   Applications of collaborative filtering typically involve very large data sets. Collaborative filtering methods have been applied to many different kinds of data including sensing and monitoring data. The underlying assumption of the collaborative filtering approach is that if a person A has the same opinion as a person B on an issue, A is more likely to have B's opinion on a different issue x than to have the opinion on x of a person chosen randomly. For example, a collaborative filtering recommendation system for television tastes could make predictions about which television show a user should like given a partial list of that user's tastes. Note that these predictions are specific to the user, but use information gleaned from many users. This differs from the simpler approach of giving an average score for each item of interest, for example based on its number of votes.

82.   **Collaborative Learning** – 📖 A learning environment in which individual learners support and add to an emerging pool of knowledge of a group; emphasizes peer relationships as learner's work together creating learning communities.   Learning through the exchange and sharing of information and opinions among a peer group. Computers excel in mediating collaborative learning for geographically dispersed groups. A situation in which two or more people learn or attempt to learn something together. Unlike individual learning, students engaged in collaborative learning capitalize on one another's resources and skills (asking one another for information, evaluating one another's ideas, monitoring one another's work,

etc.). More specifically, collaborative learning is based on the model that knowledge can be created within a population where members actively interact by sharing experiences and take on asymmetry roles. These include both face-to-face conversations and computer discussions (online forums, chat rooms, etc.). Methods for examining collaborative learning processes include conversation analysis and statistical discourse analysis.

83. **College Portal** – An online resource and/or gateway for students, faculty, and other college constituencies.

84. **College Without Walls** – Typically a college without a central campus (or no campus) that provides courses using a distributed learning model in the community via existing facilities (e.g., secondary schools, community center, churches, etc.) and/or delivers all or part of their academic program/courses as distance-based learning online.

85. **Community** – A group of people united by a common purpose who share information and knowledge with one another. *See also* **Online Community.**

86. **Community of Practice** – An informal group that shares values, perspectives, and ways of doing things. The motivation to learn is the desire to participate in a *community of practice*.

87. **Compact Disc Read-Only Memory** or **Compact Disc Read-Only Media (CD-ROM)** – A computer storage medium similar to the audio CD that can hold more than 600 megabytes of read-only digital information.

88. **Competencies/Competency Model** – A structured list of knowledge, skills and attitudes that are required for job performance. Competencies are used as the foundation to guide needs analyses and evaluations. Unfortunately most competencies end up in a filing cabinet to be referenced only when updating job descriptions. Used properly, they are powerful drivers of assessment and training.

89. **Competency Management** – A system used to evaluate skills, knowledge, and performance within an organization; spot gaps; and introduce training, compensation, and recruiting programs based on current or future needs.

90. **Compliance** – In a learning and information technology environment compliance has many meanings. (1) Compliance with regulations insuring security, privacy, and accessibility. (2) Compliance with standards developed to ensure that software and system are compatible. (3) Compliance with teaching and learning best practices. The act of meeting applicable rules and regulations regarding the operation and management of IT resources in a way that is supportive of the fiscal policies and educational goals of an organization]

91. **Compliant Standards** – Standards with official approval from an accrediting organization, agency, and/or company issued to ensure compliance to software, educational, engineering, and/or governmental standards/regulations.

92. **Computer Based Education (CBE)** – A generic term for a computer program used by a learner to acquire knowledge or skills. *See also* **E-Learning**.

93. **Computer Based Learning (CBL)** – A generic term for a computer program used by a learner to acquire knowledge or skills. *See also* **E-Learning**.

94. **Computer Based Training (CBT)** – A generic term for a computer program used by a learner to acquire knowledge or skills. *See also* **E-Learning**.

95. **Computer Managed Instruction (CMI)** – The use of computer technology to oversee the learning process, including testing and record keeping. Components of e-learning that provide assessment, student tracking and personalized lesson plans.

96. **Computer Security Incident Response Team (CSIRT)** – The team responsible for handling computer security incidents. A CSIRT is a team that responds to computer security incidents by providing all necessary services to solve the problem(s) or to support the resolution of them.

97. **Computer Supported Learning Resources (CSLR)** – The parts of an e-learning product other than those that instruct, test, or track progress. These include glossaries, bulletin boards and chats, bibliographies, databases, etc.

98. **Computer-Assisted Instruction (CAI)** – The use of a computer as a medium of instruction for tutorial, drill and practice, simulation, or games. CAI is used for both initial and remedial training, and typically does not require that a computer be connected to a network or provide links to learning resources outside of the course. *See also* **Computer-Based Training (CBT)**.

99. **Condition** – One of the three required parts of a properly composed learning objective, as defined by Robert Mager. Circumstances under which the performance will be tested and materials that will be provided to the student are described in the condition statement.

100. **Content** – What's being learned, e.g., the subject and scope of learning**.** The challenge is how to get the right content to right person, at the right time. This involves media choice (e.g., paper versus on-screen), speed, delivery cost,

relevance, learner motivation, and other factors. Information captured digitally and imparted to learners. Formats for e-learning content include text, audio, video, animation, simulation, and more.

101. **Content Expert** – Person who usually holds a credential certifying mastery in a specific area of knowledge and who identifies and decides what knowledge will be taught.

102. **Content Management Systems (CMS)** – A computer program that allows users to publish, edit and modify content on a web site as well as maintain content from a central page/site. It also provides standardized procedures to manage workflow in a collaborative environment. CMS features vary widely. Simple systems showcase a handful of features, while enterprise systems offer more complex and powerful functions. In a CMS, content can be defined as documents, movies, text, pictures, phone numbers, and scientific data. CMSs are used for storing, controlling, revising, semantically enriching and publishing documentation. Serving as a central repository, the CMS tracks the version level when new updates are added to an already existing file. Version control is a key advantage of a CMS.

103. **Contextual User Experience (UX)** – The influence context has on a user's experience. This is significant, since UX is subjective in nature; context influences an individual's feelings and thoughts regarding user experience.   As circumstance change, user experience dynamically adjusts relative to context.

104. **Convergence** – A result of the digital era in which various types of digital information, such as text, audio, and video, and their delivery mechanisms—television, telecommunications, and consumer electronics—are combined together in new integrated forms. WebTV is an example of convergence between televisions and computer technology.

105. **Cookie** – Information stored on a user's computer after he or she visits a Website. The cookie tracks data about that user but can be disabled in the browser.

106. **Copyleft** – The practice of using copyright law to offer the right to distribute copies and modified versions of a work and requiring that the same rights be preserved in modified versions of the work.   Copyleft is a general method for making a program (or other work) free, and requiring all modified and extended versions of the program to be free as well.

107. **Corporate University** – A learning organization with a governance system that aligns all learning with the corporate or agency mission, strategy, and goals. The governance system typically includes a governing board consisting of the CEO and other senior executives and a *Chief Learning Officer* (CLO) who has overall responsibility for managing the organization's investment in learning. CEOs of best-practice learning organizations leverage their corporate university to achieve performance goals, drive cultural transformation, reform and integrate training departments, and establish and sustain competitive advantage through learning.

108. **Cost Avoidance** – Component of analyzing competing business alternatives based on reducing or eliminating costs, such as student travel and instructor fees. Return-on-investment studies take account of cost avoidance in calculating final returns.

109. **Cost Effectiveness** – Measure of resources to produce acceptable results at the lowest cost; often enhanced by utilizing economies of scale.

110. **Cost-Benefit Analysis** – Method of analyzing competing business alternatives based on comparing total costs to total benefits. A proper cost-benefit analysis takes into account all benefits, including productivity, savings, and motivation, and weighs them against all costs, including expenditures, overheads, and lost opportunities.

111. **Course** – Term used to describe the collection of elements that make up training on a given subject. Usually a course is broken up into lessons, sections, or modules but course is sometimes used interchangeably with these terms.

112. **Course Design** – Setting learning objectives, choosing media applications, planning evaluation and preparing instructional strategies in advance of student recruitment and development of course materials.

113. **Course Map** – A flow-chart or other illustration of course components that maps the details and elements of a course. Course maps often illustrate the recommended order that students should complete lessons and/or training.

114. **Course Structure** – The organized framework of the distance learning course consisting of information and teaching strategies, including support of course or program.

115. **Course Team** – Group of specialists in content, instructional design, learning and technologies convened to produce distance education course.

116. **Courseware** – Any type of instructional or educational course delivered via a software program or over the Internet.

117. **Creative Commons** – A nonprofit organization devoted to expanding the scope of creative works available for others to build on and/or share legally. Creative Commons has several copyright-licenses known as Creative Commons licenses free of charge to the public. These licenses allow creators to communicate which rights they reserve, and which rights they

waive for the benefit of recipients or other creators. An easy to understand one-page explanation of rights, with associated visual symbols, explains the specifics of each Creative Commons license. Creative Commons licenses do not replace copyright, but are based upon it. They replace individual negotiations for specific rights between copyright owner and licensee, which are necessary under an *all rights reserved* copyright management with a *some rights reserved* management employing standardized licenses for re-use where no commercial compensation is sought by the copyright owner.

118. **Criterion** – 📖 One of the three required parts of a properly composed learning objective. The performance level that must be achieved by the student along with a concrete measurement for the performance level are described in the criterion statement.

119. **Criterion Referenced Instruction (CRI)** – 📖 A system of instruction developed by Bob Mager. Synonym for performance based instruction; instruction whose value is measured by the ability of the end-user to meet specified criterion after completion.

120. **Critical Success Factors (CSF)** – 📁 A term used to describe an element that is necessary for an organization or project to achieve its mission. It is a critical factor or activity required for ensuring the success of a company or an organization. Critical success factors are those few things that must go well to ensure success for a manager or an organization, and, therefore, they represent managerial/enterprise areas, that must be given special and continual attention to bring about high performance.

121. **CSIRT** – 💻 *See* **Computer Security Incident Response Team (CSIRT).**

122. **CTE Programs** – *See* **Career and Technical Education Programs.**

123. **Curation** – 💻 Digital curation is the selection, preservation, maintenance, collection and archiving of digital assets a rapidly growing issue accelerating faster and faster with the growth and spread of the World Wide Web.

124. **Curriculum** – 📖 A series of related courses.

125. **Curriculum Model** – The structure in which a program of study is offered. Distance education courses of study are divided into either a subject-matter-oriented curriculum model or a competency-oriented model. The distinction is an important consideration for design, delivery, and assessment.

126. **Customer-Focused e-Learning** – 📖 Technology-based learning programs offered by a company and targeted at their current and prospective customers. The intent is to increase brand loyalty among existing customers and attract new business

127. **Cyber-Infrastructure** – 💻 Cyber-infrastructure consists of computing systems, data storage systems, advanced instruments and data repositories, visualization environments, and people, all linked by high speed networks to make possible innovation and discoveries not otherwise possible. Cyber-infrastructure is a term first used by the US National Science Foundation (NSF), and it typically is used to refer to information technology systems that provide particularly powerful and advanced capabilities. However, cyber-infrastructure is not limited to the sciences, but can serve the arts, humanities, and social sciences as well. The NSF has made cyber-infrastructure a central theme in its plans for developing and delivering tools to enhance scientific discovery.

128. **Cyberspace** – 💻 The nebulous place where humans interact over computer networks; term coined by William Gibson in his 1984 novel *Neuromancer*.

129. **Dashboard** – 💻 There are many definitions of dashboard, two are relevant herein, (1) *Business Decision* and (2) *Information Technology*. Business decision making (categorized as strategic, analytical, operational, or informational) dashboards provide an easy-to-read, often single-page, real-time user interface, showing a graphical presentation of the current status (snapshot) and historical trends of an organization's key performance indicators (KPIs) to enable instantaneous and informed decisions to be made at a glance. Dashboards typically are limited to summaries, key trends, comparisons, and exceptions. IT and/or software dashboards provide a similar easy to use interface for management and use of software tools and/or systems.

130. **Data Driven Decision Making (DDDM)** – 💻 The systematic collection and analysis of various types of data, including input, process, outcome and satisfaction data, to guide a range of decisions to help improve the success of students and schools.

131. **Data Mining** – 💻 The process of analyzing data from different perspectives and summarizing it into useful information that can be used to increase revenue, cuts costs, or both (also known as Knowledge Discovery in Databases, or KDD). Data mining software enables users to analyze data from many different dimensions or angles, categorize it, and summarize the relationships identified. Technically, data mining is the process of finding correlations or patterns among dozens of fields in large relational databases.

132. **Data Over Cable Service Interface Specification (DOCSIS)** – 🖥 A high speed connectivity standard for cable modems and set-top boxes (STBs).

133. **Data Visualization** – 🖥 The study of the visual representation of data, e.g., information that has been abstracted in some schematic form, including attributes or variables for the units of information.   The main goal of data visualization is to communicate information clearly and effectively through graphical means.

134. **Data-Driven Decision Making (DDDM)** – 🖥 The systematic collection and analysis of various types of data, including input, process, outcome and satisfaction data, to guide a range of decisions to help improve the success of students and schools.

135. **De facto Standard** – 📁 A specification that has not been officially established by an accrediting agency but that is accepted and used as a standard by a majority of practitioners.

136. **Deeplinking** – 🖥 On the World Wide Web, deep linking is making a hyperlink that points to a specific page or image on a website, instead of that website's main or home page (front-page versus deep into the content/site).

137. **Delivery** – 📖 Any method of transferring content to learners, including instructor-led training, Web-based training, CD-ROM, books, and more.

138. **Delivery Method** – 📖 Term describing the way in which training is distributed to learners. Print-based workbooks, classroom, video, audio tapes, CD-ROM, and Internet are all sample delivery methods.

139. **Design** – 📖 The second step in the classic ADDIE model of Instructional System Design. The design phase builds on the analysis information and includes the formulation of a detailed plan for the instruction, known as the Design Document. Sometimes Design is broken into high level design for the design doc and low level design which culminates in a script or storyboard.

140. **Designer** – 📖 Used to describe any member of a training project team, usually referring to creators such as writers, graphic artists, and programmers. From an instructional design perspective, this term refers only to the *instructional* designers, but it is often used synonymously with the term *developer*.   From a graphic design and/or interface design perspective this is the product and/or project designer and is confusing when all three designers are working on the same project.

141. **Desktop Videoconferencing** – ☻ Videoconferencing on a personal computer.

142. **Developer** – 📖 Used to describe a member of a training project team involved in development activities or the project team as a whole. Could refer to an instructional designer, graphic designer, writer, etc.

143. **Development** – 1) Learning or other types of activities that prepare a person for additional job responsibilities and/or enable him to gain knowledge or skills. 2) The creation of training materials or courses, as in *content development* or *e-learning development.* The third step in the classic A-D-D-I-E model of Instructional System Design. The development phase follows the plans created in the design phase to create materials ready for several iterations of testing and refinement.

144. **Development Team** – 📖 Group of individuals, numbering from two to more than 20, who work together to design, develop, and facilitate/teach a distance education course.

145. **Digital Divide** – 📁 The gap that exists between those who can afford technology and those who cannot.

146. **Digital Immigrants** – 📁 Someone who was born before the existence of digital technologies and adopted it to some extent later in life.

147. **Digital Natives** – 📁 A person, who was born during or after the introduction of digital technology and through interaction with digital technology from an early age, has a greater understanding of its concepts.   The term is also used to describe people born during or after the latter 1960s, since the Digital Age began at that time.   In most cases the term focuses on people who grew up with the technology that became prevalent in the latter part of the twentieth century and continues to evolve today.

148. **Digital Repositories** – 🖥 A digital library is an assets database in which collections are stored in digital formats (as opposed to print, microform, or other media) and accessible by computers. The digital content may be stored locally, or accessed remotely via computer networks or the internet.   Generally, differs from other digital collections in that – content is deposited in a repository, whether by the content creator, owner or third party; the repository architecture manages content as well as metadata; the repository offers a minimum set of basic services e.g., put, get, search, access control; the repository must be sustainable and trusted, well-supported and well-managed.

149. **Digital Rights Management (DRM)** – 🖥 The protection of copyrighted digital content to prevent unauthorized viewing, copying or distribution.

150. **Digital Storytelling** – Digital Storytelling is the practice of using computer-based tools to tell stories. As with traditional storytelling, most digital stories focus on a specific topic and contain a particular point of view. However, as the name implies, digital stories usually contain some mixture of computer-based images, text, recorded audio narration, video clips and/or music. Digital stories can vary in length, but most of the stories used in education typically last between two and ten minutes.

151. **Digital Subscriber Line (DSL)** – The technology used to deliver broadband internet access over telephone lines. There are various types of DSL including asymmetric (ADSL), symmetric (SDSL) and very high bit rate (VDSL).

152. **Discussion Boards** – Forums on the Internet or an intranet where users can post messages for others to read.

153. **Distance Education (DE)** – Teaching and learning in which learning normally occurs in a different place from teaching. Educational situation in which the instructor and students are separated by time, location, or both. Education or training courses are delivered to remote locations via synchronous or asynchronous means of instruction, including written correspondence, text, graphics, audio- and videotape, CD-ROM, online learning, audio- and videoconferencing, interactive TV, and FAX. Distance education does not preclude the use of the traditional classroom.

154. **Distance Education Consortium** – Two or more distance education institutions or units who share in designing distance education courses, teaching them, or both.

155. **Distance Education Courses** – Structured programs of instruction for learners in a different place from the teacher, having learning objectives, one or more teachers, a medium of communication, and subject matter.

156. **Distance Education Program** – Distance education activities carried out in a conventional college, university, school system, or training department whose primary responsibilities include traditional classroom instruction.

157. **Distance Education System** – All the component processes that result in distance education, including learning, teaching, communication, design, and management.

158. **Distance Education Unit** – A special unit dedicated to distance learning within a conventional college, university or school system.

159. **Distance Learning** – Term often used as synonymous with distance education, not strictly correct since distance education includes teaching as well as learning. The desired outcome of distance education. The two terms are often used interchangeably.

160. **Distributive Learning** – Learning distributed geographically/by location and/or learning phased over time.

161. **District/College Information** – Information created, collected, processed, disseminated, or disposed of by or for the District or College.

162. **Domains of Learning** – Three divisions used to classify types of learning—psychomotor (physical), cognitive (mental), and affective (emotional).

163. **Download** – A file that's transferred or copied to a user's computer from another connected individual computer, a computer network, a commercial online service, or the Internet. (verb) To transfer or copy a file to a user's computer from another connected individual computer, a computer network, a commercial online service, or the Internet.

164. **Drill and Practice** – An interactive exercise used to develop basic skills like keyboard operation. Involves the repetition of short sequences of practice, chained together to make up more complex processes. *Although extremely effective, this method is usually avoided as an instructional technique because it is considered boring, simple, and unglamorous.*

165. **DRM** – *See* **Digital Rights Management (DRM)**.

166. **Druple** – Sophisticated free and Open Source content management system/platform (CMS) and content management framework (CMF) powering millions of websites and applications. It's built, used, and supported by an active and diverse worldwide community. Druple is written in PHP and distributed under the GNU General Public License.   It is used as a back-end system for at least 2.1% of all websites worldwide ranging from personal blogs to corporate, political, and government sites including whitehouse.gov and data.gov.uk. It is also used for knowledge management and business collaboration.

167. **DSL** – *See* **Digital Subscriber Line (DSL).**

168. **Dublin Core** – Metadata terms developed to standardize resource/asset descriptions for the purposes of discovery. The terms can be used to describe a full range of web resources video, images, web pages etc. and physical resources such as books and objects like artworks. The Dublin Core standard includes two levels — Simple and Qualified. *Simple Dublin Core* comprises 15 elements; *Qualified Dublin Core* includes three additional elements;— Audience, Provenance

and Rights Holder;— as well as a group of element refinements, also called qualifiers, that refine the semantics of the elements in ways that may be useful in resource discovery.

169. **Dynamic Database Management System (Dynamic DBMS)** – 🖥 A dynamic database management system is a database in which objects have a value-based relationship, which is specified at retrieval time. In a dynamic DBMS, the locations of logical file databases and relational data based are value-based. Value-based system architecture stores and manages three basic sets of objects: a data dictionary holding metadata, indexing and linking data sets, and actual data values made up of stored information. The independent logical file database and relational databases are value-based. A dynamic DBMS is the opposite of a static database management system, where relationships are information based.

170. **Dynamic Information** – 🖥 Current, up to the second. Instead of reading pages prepared in advance, the pages are assembled on the fly, incorporating current information and taking into account current needs.

171. **Dynamic Knowledge Repositories (DKR)** – 🖥 An evolving computerized repository that systematically capture, organizes, and categorizes the collective contextual knowledge of a project team or an organization in a way that is easily navigated and searchable by the members.   A DKR classification scheme retains and conveys the relative importance of the taxonomy nodes within the knowledge base needed to transform information into new and growing knowledge-based relationships or extensions.

172. **Dynamic Repositories** – 🖥 Relational storage and retrieval system for electronic information organized and categorized according to set taxonomy or classification scheme in a way that makes it easily to store and retrieve like and/or related information.

173. **E-Books** – 📖 An electronic (variously, e-book, ebook, digital book, or even e-editions) book-length publication in digital form, consisting of text, images, and/or media (audio/video) readable on computers or other electronic devices.

174. **Economies of Scale** – Average costs decrease with increased size and distribution of product. Economies that arise from increasing the size of an operation; in the case of distance education, economies that arise from increasing the number of students.

175. **Edutainment** – 📖 The act of learning through various mediums (including games, films, television shows, or websites) that educates as well as entertains. A*lso* referred to as Infotainment when the content is primarily informational and not for learning and/or educational purposes.

176. **Effectiveness** – 📖 Measure of achieving a specific goal. Typical effectiveness measures in distance education include cost, course design, instruction, media, teaching strategies, technology. Relates to quality assurance.

177. **E-learning (Electronic Learning)** – 📖 Term covering a wide set of applications and processes, such as Web-based learning, computer-based learning, virtual classrooms, and digital collaboration. It includes the delivery of content via Internet, intranet/extranet (LAN/WAN), audio- and videotape, satellite broadcast, interactive television, CD-ROM, and more. Broad definition of the field of using technology to deliver learning and training programs. Typically used to describe media such as CD-ROM, Internet, Intranet, wireless, and mobile learning. Some include Knowledge Management as a form of e-learning.

178. **Electronic Books** – 🖥 *See* **E-Books**.

179. **Electronic Performance Support System (EPSS)** – 🖥 1) A computer application that's linked directly to work application to train or guide workers through completing a task in the target application. 2) An electronic device, computer, or application that gives workers information or resources to help them accomplish tasks or achieve performance requirements in real-time.

180. **Electronic Portfolio (E-Portfolio)** – 🖥 A collection of electronic evidence assembled and managed by a user, usually on the Web. Such electronic evidence may include inputted text and blog entries, images, multimedia and other digital files, and offer hyperlinked navigation of material inside and outside of the portfolio. In addition to serving a traditional function as a collection of students' work and achievements, e-portfolios also typically serve as demonstrations of students' abilities and as outlets for self-expression. Online e-portfolios can be maintained dynamically over time, are easily shared with others, and often can permit varying levels of audience access. Also known as a digital portfolio.

181. **Email (Electronic Mail)** – 🖥 Messages sent from one computer user to another.

182. **Email List** – 🖥 A form of one-to-many communication using email; a software program for automating mailing lists and discussion groups on a computer network. Short for electronic mail. The process of one user employing a computer to send a text message to an electronic mailbox to be retrieved and viewed by another user. Also, the message itself.

183. **Emerging Technologies** – 🖥 Innovation and advances in various fields of technology. Emerging technologies are those technical innovations which represent progressive developments within a field for competitive advantage; converging

technologies represent previously distinct fields which are in some way moving towards stronger inter-connection and similar goals.

184. **End User** – 📖 The person for whom a particular technology is designed; the individual who uses the technology for its designated purpose. In e-learning, the end user is usually the student.

185. **End-to-End Solution** – 📖 A marketing term used by large technology firms (computer and e-learning suppliers), meant to imply that their products and services will handle all aspects required services from end to end, e.g., development to delivery.

186. **Energy Star Compliance** – 📖 Energy Star compliance is a joint program of the US Environmental Protection Agency and the US Department of Energy designed to help the public and business save money and protect the environment through energy efficient products and practices. Compliance means that a product meet standards defined by EPA and DOE and is eligible to use the Energy Star service mark.

187. **Enterprise Resource Planning (ERP)** – 📖 A set of activities supported by application software that helps a company manage such core parts of its business as product planning, parts purchasing, inventory management, order tracking, and customer service. Can also include modules for finance and HR activities. Enterprise Resource Planning (ERP) attempts to integrate all departments and functions across a company/organization into an integrated computer system that can serve the needs of all departments/programs.   The deployment of an ERP system can involve considerable business process analysis, employee retraining, and new work procedures.

188. **Enterprise Search** – 📖 Practice of making content from multiple enterprise-type sources, such as databases and intranets, searchable to a defined audience.   Enterprise Search provides access to all of an organization's data sources—Web sites, file servers, content management systems, etc.

189. **Enterprise-Wide e-Learning** – 📖 E-learning that is intended for all or most students and employees within an educational institution and/or company. It's often part of a strategic change of direction with a short timeline requiring unprecedented need for ongoing communication and collaboration among disparate academic and organization units and people.

190. **Entry Behavior** – 📖 The prior knowledge, skill or attitude that is a pre-requisite to a given course, or that is assumed to be present by course designers.

191. **E-Portfolio** – 📖 See **Electronic Portfolio**.

192. **EPSS** – 📖 *See* **Electronic Performance Support System**.

193. **E-Readers** – Digital devices (including tablets and smartphones) and their related applications that facilitate or enhance the reading of electronic material (e.g., books, newspapers, and magazines).

194. **Ergonomics** – Design principles relating to the comfort, efficiency, and safety of users.

195. **ERP** – 📖 *See* **Enterprise Resource Planning (ERP).**

196. **Evaluation** – 📖 The final step in the classic ADDIE model of Instructional System Design. The evaluation phase involves formative evaluations, evaluations of the product during development, and a summative evaluation, the final evaluation of the effectiveness of the training in solving the instructional problem.   Any systematic method for gathering information about the impact and effectiveness of a learning offering. Results of the measurements can be used to improve the offering, determine whether the learning objectives have been achieved, and assess the value of the offering to the organization.

197. **Events of Instruction** – 📖 The nine steps outlined by Robert Gagne that correlate to and address the conditions for effective adult learning. In brief, each lesson should (1) capture attention, (2) inform the learner of the objective, (3) stimulate recall of prior learning, (4) present material, (5) provide guidance, (6) elicit performance, (7) provide feedback, (8) assess performance, (9) enhance retention and transfer.

198. **Evidence-Based Decision Making (EBDM)** – 📁 The practice of applying research and evaluation to decision-making. A seven-step EBDM Cycle includes the following: (1) examine data to understand need, (2) search for information, (3) examine research, (4) examine contextual factors, (5) articulate outcomes, (6) monitor implementation, (7) evaluate outcomes. Followed by ongoing reflection/revision/improvement that leads to the development and implementation of an evidenced-based action plan.

199. **Exemplary Best Practices** – 📖 The best practices of exemplary organization and/or exemplary best practices widely identified by peer organization.

200. **Expert System** – 📖 An artificial intelligence program in which a decision tree is created based on an experts decision criterion.

201. **Explicit Knowledge** – 📖 Knowledge acquired in educational venues, i.e. through language; through reading. Can be contrasted with tacit knowledge. Knowledge that's easy to communicate. (Opposite of tacit knowledge.)

202. **Extensibility** – 💻 The ability to expand and adapt an e-learning or other application or infrastructure by adding features, components, or services to a core set of capabilities.

203. **Extranet** – 💻 An internal, private website that has restricted access to certain outside users as well. For example, an organization may create a parts Inventory web site to support their internal manufacturing efforts, while giving read-only access to their outside vendors who need to know when to re-supply their parts. A local-area network (LAN) or wide-area network (WAN) using TCP/IP, HTML, SMTP, and other open Internet-based standards to transport information. An extranet is only available to people inside and certain people outside an organization, as determined by the organization.

204. **Face-to-Face (F2F)** – 📖 Generally, considered classroom-based instructor led instruction and/or tutoring. Nevertheless, using video presence and/or high quality synchronous technology face-to-face presence can be achieved.

205. **Facilitation** – 📖 Assisting/guiding approach (*guide-on-the-side*) to a learning situation; can be contrasted to the directive teacher-instructor (*sage-on-the-stage*) approach.

206. **Facilitative Tools** – 💻 Electronic features used to deliver online courses. Examples include mailing lists, chat programs, streaming audio, streaming video, and Webpages.

207. **Facilitator** – 📖 Term for instructor, trainer, teacher, or class leader. In a classroom the instructor *facilitates* the learning experience.

208. **Faculty Mentors** – 📖 Select group of experienced faculty members providing direct support to a group of less experienced and/or inexperienced faculty members through the process of learning to use new systems, processes, and/or programs.

209. **FAQs** – 📁 *See* **Frequently Asked Questions.**

210. **Federated Knowledge Gardens** – 💻 A collection of resource information resources. A knowledge organizing process to organize information resources by the subjects described in those resources. The goal of the federation process is to help users/stakeholders better understand the complexity and context of information.

211. **Feedback** – 📖 Key element in any form of communication or learning—the response of the receiver to the sender. Can be positive or negative, is used to shape behaviors, and should closely follow an action for maximum result.

212. **Fiber-Optic Cable** – 💻 Glass fiber used for laser transmission of video, audio, and/or data. Fiber-optic cable has a much greater bandwidth capacity than conventional cable or copper wire.

213. **File Server** – 💻 A computer on a network with the primary task of storing files that can be shared by network users.

214. **File Transfer Protocol (FTP)** – 💻 A protocol that enables a user to move files from a distant computer to a local computer using a network like the Internet. FTP is one of the primary methods for transferring files over intranets or the Internet.

215. **Firewall** – 💻 An application that isolates part of a network, like a company's private intranet, from access to or by other parts of the network, like the public Internet.

216. **FireWire** - 💻 Also known as IEEE 1394. A high-speed connection interface used for connecting digital video cameras, hard drives and other peripherals with computers. The term FireWire is particularly associated with Apple computers. Apple Computer's trademarked name for its high-speed serial bus supporting the IEEE 1394 data transfer standard. FireWire enables the connection of up to 63 devices and transfers data at a speed of up to 400 mbps.

217. **Flip Camcorders** – ⊛ A type of tapeless camcorder for recording digital video in file formats that can be saved on flash memory cards, optical discs, and hard disk drives. Such files are typically share via the Web.

218. **Folksonomy** – 💻 Derived from folk + taxonomy, a Folksonomy is a way of categorizing data on the web using tags generated by users. Folksonomies are used on collaborative, social websites for photo sharing, blogs and social bookmarking. Social bookmarking websites are services that allow users to store their favorite websites online and access them from any internet-connected computer. Users tag their favorite websites with keywords. These are then shared with other users and build into folksonomies of the most popular sites arranged under different categories. The collaborative activity of sorting information into categories derived from the consensus of the information users. Coined by Thomas Vander Wal as a portmanteau of folk and taxonomy, folksonomy is also known as collaborative tagging, social classification, social indexing, and social tagging.

219. **Formative Evaluation** – 📖 Evaluation taken during a project or course to monitor progress; often used to improve segments of the project or course to respond to revealed weaknesses in the design.

220. **Frequently Asked Questions (FAQs)** – 📁 An informational list or web document, in question and answer format, of

common inquiries from users about a topic or application along with associated answers or standard responses. FAQs appear on Websites and discussion boards and within desktop applications.

221.   **FTP** – 💻 *See* **File Transfer Protocol (FTP)**.

222.   **Full-Motion Video** – ⊛ A signal that allows the transmission of the complete action taking place at the origination site.

223.   **Fully Interactive Video (Two-Way Interactive Video)** – ⊛ Two sites interacting with audio and video as if they were co-located.

224.   **Game-Based Learning** – 📖 *Serious* games designed for learning. Serious games may be highly complex and interactive and/or simple casual-like games designed to teach a single concept and/or chunk of content.

225.   **Gap Analysis** – 📁 Figure out what to do by assessing the gap between where you are and where you want to be. Most people then begin building from the present into the future. We favor looking at the step right before the ultimate one and backing toward the present one step at a time.

226.   **Geolocation (GEOgraphic LOCATION)** – 💻 A technology in widespread use, which makes it possible to determine the exact location, in the real world, of visitors to particular websites. It usually works by identifying locations based on a computer's IP address, a unique number (similar to a telephone number) used as an identifier when the machine is linked to the Internet. Geolocation can be controversial; some regard it as an invasion of privacy which forces users to disclose their location.

227.   **General Packet Radio Services (GPRS)** – 💻Referred to as 2.5G, an update to GSM mobile phone networks that allows for faster data downloads. GPRS is also being used to fill in gaps in 3G coverage.

228.   **Gesture Recognition or Control –** 💻 Controlling a computer and/or other technology-based system through facial, hand, or eye movement.

229.   **Gesture-Based Computing** – 💻 The idea that simple gestures and natural, comfortable motions can be interpreted through various input devices and used to control computers, rather than traditional mouse clicks and keyboard typestrokes. Touching, tapping, swiping, moving, and jumping are among the physical body movements and gestures that allow users to engage in virtual activities and manipulate digital content in ways that mimic real-world actions. Particularly in the case of touch-screen technology, using simple, universal hand movements and gestures can eliminate the need for an external controller and promotes greater interactivity.

230.   **Global positioning system (GPS)** – 💻 A satellite-based location technology that can determine position down to a few meters. GPS modules are used for in-car navigation and in handheld navigation devices, and can be added to PDAs and laptops. Location-based services that make use of the technology are being developed for education.

231.   **Globalization** – 📁 The tailoring of an offering to include clear, grammatically correct text that eliminates slang, gender references, and cultural or generational idioms. The process of deploying a single system worldwide that meets a variety of needs. Integrating several working systems into one.

232.   **Google Apps** – 💻 A variety of cloud/web-based productivity software created by Google, including Google Earth, the virtual globe, map, and geographical information program that has become an important tool in various navigational applications displayed on web devices**.**

233.   **Google Earth** – 💻 Virtual globe, map and geographical information program.

234.   **Google Jockeying** – Simultaneous searching and display in a presentation/class for resources mentioned by the presenter

235.   **GPS** – 💻 *See* **Global Positioning System (GPS).**

236.   **Granularity** – 📖 The degree of detail something can be broken down into, or the number of discrete components making up any type of system. In e-learning, granularity is defined by the number of content chunks.

237.   **Graphic** – ⊛ The medium of delivering static images to be interpreted by the learner visually. Compare to audio, video, text, and animation.

238.   **Graphical User Interface (GUI)** – 💻 A way of representing the functions, features, and contents of a program to a user by way of visual elements, such as icons, as opposed to textual elements, such as words and character strings. The Microsoft Windows operating system is the classic example of a program with a GUI. Pronounced gooey.

239.   **Grid Computing** – 💻 concurrent application of the processing and data storage resources of many computers)

240.   **Grok** – 📖 From Robert Heinlein's *Stranger in a Strange Land*, Grok is defined as reaching total understanding of a subject. Grokking as a concept means you understand it so well that it is absorbed into your very being. Grok is also an open-source Web framework based on Zope Toolkit technology design to simplifying programming.

241. **GUI** – 🖥️ *See* **Graphical User Interface (GUI).**

242. **Haptics** – 🖥️ The science of applying tactile sensation and control to interaction with computer applications. Through the use of specialized devices, including joysticks and data gloves, users can receive feedback from computer applications in the form of felt sensations in the hand or other parts of the body.

243. **HDTV** – ⊗ The acronym for **High-Definition Television**. HDTV and standard definition television (SDTV) are the two categories of display formats for digital television (DTV) transmissions. HDTV provides a higher quality display with a vertical resolution display from 720p to 1080i. There are two main standards: 1080i (interlaced) and 720p (progressive scan).

244. **Help Desk** – 🖥️ A team that can be contacted by end-users for assistance with hardware and software problems.

245. **High-Bandwidth** – 🖥️ A high-bandwidth connection, like a cable modem, will allow transmission rates in the range of Gigabits per second and allow the use of data intensive information like video, audio and complex animation.

246. **Homepage** – 🖥️ A document that has an address (URL) on the World Wide Web, is maintained by a person or an organization, and contains pointers to other pieces of information.

247. **Host** – 🖥️ A computer connected to a network. (verb) To store and manage another company's technology and/or content on your own servers.

248. **Hosting** – 🖥️ The verb describing the physical storage of a Web page or other Internet content. As in, we are hosting our program on our in-house computers.

249. **High-Speed Downlink Packet Access (HSDPA/3.5G)** – 🖥️ Known as 3.5G, an upgrade to 3G networks. It allows for download speeds of up to 14.4 Mbps, although actual services are expected to be much lower than this. HSDPA will begin to roll out commercially in 2006. HSUPA (uplink) will follow later.

250. **HTML** – 🖥️ *See* **Hypertext Markup Language (HTML)**.

251. **HTTP** – 🖥️ *See* **Hypertext Transfer Protocol (HTTP)**.

252. **Hypermedia** – 🖥️ Hypermedia links text, graphics, video, audio, and animation and leaves the control of navigation through its elements in the hands of the user.

253. **Hypertext** – 🖥️ Text elements within multimedia documents, classically underlined and in colored font, that can be clicked on by the user to follow a path to a new location in a document, supplemental material like a graphic or another page on the net.

254. **Hypertext Markup Language (HTML)** – 🖥️ More commonly referred to as HTML. The standard programming language used to create documents for display on the World Wide Web.

255. **Hypertext Transfer Protocol (HTTP)** – 🖥️ A set of rules and standards that govern how information is transmitted on the World Wide Web.

256. **Icon** – 🖥️ A simple symbol representing a complex object, process, or function. Icon-based user interfaces have the user click on onscreen buttons instead of typing commands.

257. **Identity Management (ID Management)** – 🖥️ The process of identifying and managing the identity of individuals in a system (such as a network or an enterprise) and controlling their access to resources within that system by associating user rights and restrictions.   In an enterprise setting, identity management is used to increase security and productivity, while decreasing cost and redundant effort. Standards such as Extensible Name Service (XNS) are being developed to enable identity management both within the enterprise and beyond.

258. **IEEE** – 🖥️ An acronym for *The Institute of Electrical and Electronics Engineers.* An organization whose Learning Technology Standards Committee is working to develop technical standards, recommended practices, and guides for computer implementations of education and training systems.

259. **IEEE Learning Object Metadata** – 🖥️ An internationally-recognized open standard (published by the Institute of Electrical and Electronics Engineers Standards Association, New York) for the description of learning objects.   Attributes of learning objects described include: type of object; author; owner; terms of distribution; format; and pedagogical attributes, such as teaching or interaction style.

260. **ILS** – 📖 *See* **Integrated Learning System (ILS)**.

261. **ILT** – 📖 *See* **Instructor-Led Training (ILT***)*.

262. **Image or Photo Sharing** – ⊗ The publishing of digital photos online to share with others (publicly or privately). This function is provided through websites and applications that facilitate image upload and display. The term is also applied to

the use of online photo galleries that are set up and managed by individual users, including photoblogs. Sharing means that users can view but not necessarily download the photos and/or users are able to select different copyright options. Some of the most well know sites include: *Flickr, Fotki, Memeo, Picasa Web, Shutterfly, Webshots, Zenfolio*, and *Snapfich*.

263. **Implementation** – 📖 The fourth step in the classic ADDIE model of Instructional System Design. The implementation phase involves the delivery of the training to the intended audience and the use by that audience.

264. **IMS Common Cartridge Specification (CC)** – 📖 Specification (standards) being developed by IMS Global Learning Consortium designed to distills state-of-the-art practice in online education and training into an easy-to-follow format for creating and sharing digital content. Common Cartridge benefits include: (1) Greater choice of content, enabling collections of learning resources of various types and sources. (2) Reduces vendor/platform lock-in by establishing course cartridge native formats endorsed by educational publishers, and supports a wide variety of established content formats, eliminating platform lock-in. (3) Greater assessment options which explicitly supports the most widely used standards for exchanging assessment items. (4) Increases flexibility, sharing and reuse which fits within the educational context of enabling instructors to assemble lesson plans of various resources and publish those as reusable and changeable packages that are easy to create, share, and improve.

265. **IMS Content Packaging –** 📖 A specification for sending learning resources (or learning objects) from one program to another, facilitating easier delivery, reuse and sharing of materials. IMS Packages enable users to export content from one virtual learning environment (VLE), content management system or digital repository, and import it into another while retaining information describing the media in the IMS Package, and how it is structured, such as a table of contents or the HTML page to show first. There are a number of learning applications – from authoring tools to VLEs – now supporting IMS Content Packaging.

266. **IMS Global Learning Consortium** – 🗁 Coalition of government organizations dedicated to defining and distributing open architecture interoperability specifications for e-learning products. Originally the *Instructional Management System Project* started by Educause. See http://www.imsglobal.org/index.html.

267. **IMS Question & Test Interoperability (IMS/QTI)** – 📖 A specification that describes a data model for the representation of question and test data and corresponding results reports. The specification enables the exchange of item, test, and results data between authoring tools, item banks, test constructional tools, learning systems, and assessment delivery systems. The data model is described abstractly, using UML to facilitate binding to a wide range of data-modeling tools and programming languages. The specification is designed to support both interoperability and innovation through the provision of well-defined extension points. These extensions can be used to wrap specialized or proprietary data in ways that allows it to be used alongside items that can be represented directly.

268. **IMS Tools Interoperability(IMS/LTI)** – 📖 A developing specification to establish a standard way of integrating rich learning applications (often remotely hosted and provided through third-party services) with platforms like learning management systems, portals, or other educational environments. In LTI these learning applications are called Tools (delivered by Tool Providers) and the LMS, or platforms, are called Tool Consumers. The basic use case behind the development of the LTI specification is to allow the seamless connection of web-based, externally hosted applications and content, or Tools (from simple communication applications like chat, to domain-specific learning environments for complex subjects like math or science) to platforms that present them to users.

269. **Independent Study** – 📖 Term used in North American universities from the mid-1960s in place of correspondence study, partly to loosen associations with for-profit correspondence schools, partly to accommodate emerging, non-text media, and partly to emphasize the greater autonomy of the student in the teacher-learner transaction.

270. **Indicators of Performance** – 🗁 *See* **Key Performance Indicators (KPI).**

271. **Informal/Formal Learning** – 📖 Formal learning is a class, a seminar, a self-study course – everyone recognizes it as learning. Informal learning is over the water cooler, at the poker game, asking the guy in the next cube to help out, collaborative problem solving, watching an expert, or sharing a terminal for eLearning. More than half of corporate learning is the informal kind.

272. **Information** – 💻 Any communication or representation of knowledge such as facts, data, or opinions in any medium or form, including textual, numerical, graphic, cartographic, narrative, or audiovisual forms.

273. **Information Architecture** – 💻 The organization and categorization of online content. The rules and structure of where and how to store content. Especially relevant for knowledge management programs and corporate intranets where users must be able to quickly find desired information.

274. **Information Management** – 💻 The planning, budgeting, manipulating, and controlling of information throughout its life cycle.

275. **Information Resources Management** – 💻 The process of managing information resources to accomplish District/College missions. The term encompasses both information itself and the related resources, such as personnel, equipment, funds, and information technology.

276. **Information System** – 💻 A discrete set of information resources organized for the collection, processing, maintenance, transmission, and dissemination of information, in accordance with defined procedures, whether automated or manual.

277. **Information Technology** – 💻 Any equipment or interconnected system or subsystem of equipment, that is used in the automatic acquisition, storage, manipulation, management, movement, control, display, switching, interchange, transmission, or reception of data or information.

278. **Information Technology Infrastructure Library (ITIL)** – 💻 A set of practices for IT service management (ITSM) that focuses on aligning IT services with the needs of business.   In its current form (known as ITILv3 and ITIL 2011 edition), ITIL is published in a series of five core publications, each of which covers an ITSM lifecycle stage.   ITILv3 underpins ISO/IEC 20000 (previously BS15000), the International Service Management Standard for IT service management, although differences between the two frameworks do exist. ITIL describes procedures, tasks and checklists that are not organization-specific, used by an organization for establishing a minimum level of competency. It allows the organization to establish a baseline from which it can plan, implement, and measure. It is used to demonstrate compliance and to measure improvement.

279. **Infrastructure** – 💻 The underlying mechanism or framework of a system. In e-learning, the infrastructure includes the means by which voice, video, and data can be transferred from one site to another and be processed.

280. **Instant Messaging (IM) –** 💻 Using software applications to exchange short text messages between Internet users in real time via tablets, smartphones, computers, and other digital devices. Some instant messaging programs also include voice chat, file transfer, and other applications.

281. **Instant Messenger (IM)** – 💻 Software that lists users selected buddies (friends, family, co-workers, and so forth) who are online and enables users to send short text messages back and forth to them. Some instant messenger programs also include voice chat, file transfer, and other applications.

282. **Instant Response System (Smart Response and/or Interactive Response)** – 💻 Technology used in the classroom or at a distance to gather instant feedback from students. Instant Response Systems allows individual responses by students to be collected, scored and tabulated instantly (for instructor) but anonymously (for student).

283. **Instructional Design** – 📖 A system of developing well-structured instructional materials using objectives, related teaching strategies, systematic feedback and evaluation.   A systems approach to designing a learning experience. Heavily promoted by DoD investment, formal instructional design is currently under attack for fostering slow development, a printed-paper mindset, and insufficient attention to informal learning.

284. **Instructional Design Templates** – 📖 The same instructional design principles can be used to create effective lessons for any discipline and course delivery method (even the traditional classroom) by using structured instructional design approaches conducive to effective and efficient teaching and learning. Templates can include many different assets and tools that create interfaces and GUIs for courses. Templates can include buttons, icons, color schemes, images, quizzes, games, and more. Having templates ready to goes means that you don't have to waste time re-creating the same pieces for each course. Most importantly, Instructional Design Templates insure consistency, quality, efficiency, and pedagogical effectiveness (e.g., organize, scaffold and sustaining learning).

285. **Instructional Designer (ID)** – 📖 An individual who applies a systematic methodology based on instructional theory to create content for learning.   The person who applies instructional learning theory to the organization and design of learning programs.

286. **Instructional Systems Design (ISD)** – 📖 Term describing the systematic use of principles of instruction to ensure that learners acquire the skills and knowledge essential for successful completion of overtly specified performance goals.

287. **Instructor-Led Training (ILT)** – 📖 Training mediated by a live instructor, such as classroom training or live classes delivered over a web-based conference system. The term is used synonymously with on-site training and classroom training (c-learning).

288. **Instructors (also Tutors)** – 📖 Specialists in learning who interact through technology with students as they learn content, usually designed by course team, though quite often by the instructors themselves.

289. **Integrated Learning System (ILS)** – 📖 A complete software, hardware, and network system used for instruction. In addition to providing curriculum and lessons organized by level, an ILS usually includes a number of tools such as assessments, record keeping, report writing, and user information files that help to identify learning needs, monitor

progress, and maintain student records.

290. **Integration** – 🖥 Combining hardware, software (and, in e-learning, content) components together to work as an interoperable system. The process of integration may also include front-end planning and strategy.

291. **Intellectual Property (IP)** – 🗁 Ownership of works resulting from a person's thoughts. Important issue in distance education as courseware is made widely available. Copyright legislation provides for some protection.   An idea, invention, formula, literary work, presentation, or other knowledge owned by an organization or individual. Intellectual property can be protected by patents, trademarks, service marks, and/or copyrights.

292. **Intelligent Resource Management (IRM)** – 🖥 Intelligent automation for managing systems and services to provide application deployment, automated provisioning of resources, configuration management system, updates of resources for problem-solving, and maintenance of infrastructure.

293. **Intelligent Tutoring Systems (ITS)** – 📖 Broadly defined, an Intelligent Tutoring System is interactive learning system containing an artificial intelligence component. The system/software tracks students' work, tailoring feedback and hints along the way to facilitates and scaffold learning. By collecting information on a particular student's performance, the software can make inferences about strengths and weaknesses, and suggest additional work.

294. **Interaction** – 📖 Exchange of information, ideas, opinions between and among learners and teachers, usually occurring through technology with the aim of facilitating learning. A widely cited concept of interaction discriminates between learner-teacher interaction, learner-learner interaction and learner-content interaction.

295. **Internet** – 🖥 The modern network of tens of thousands of interlinked computers, evolved from the US government's ARPANET project of the 1960s. The public Internet encompasses the World Wide Web, the popular multimedia portion, as well as the e-mail, FTP, gopher, and other services. The Internet now provides communication and application services to an international base of businesses, consumers, educational institutions, governments, and research organizations.

296. **Internet Explorer (IE)** – 🖥 The Internet Web browser developed by Microsoft, generally called IE.   IE is one of the most commonly used browser today.

297. **Internet of Things –** 🖥 First developed by Kevin Ashton in 1999, this concept refers to uniquely identifiable physical objects (things) and their virtual representations in an Internet-like structure. Radio-frequency identification (RFID) tags, barcodes, and 2D-codes are among the types of identifying devices that provide such virtual representations.

298. **Internet Protocol (IP)** – 🖥 The international standard for addressing and sending data via the Internet.

299. **Internet Service Provider (ISP)** – 🖥 A hosting company that provides end user access to such Internet services as email, the World Wide Web, FTP, newsgroups, and so forth.

300. **Internet Time** – 🖥 The accelerated timeframe of the new economy brought o**n** by eBusiness and the Internet. A year of Internet time may equal seven years of calendar time (more or less).

301. **Internet-Based Training (IBT)** – 📖 The term most commonly used in the mid 1990's to describe web-based learning programs. Training delivered primarily by TCP/IP network technologies such as email, newsgroups, proprietary applications, and so forth. Although the term is often used synonymously with Web-based training, Internet-based training is not necessarily delivered over the World Wide Web, and may not use the HTTP and HTML technologies that make Web-based training possible.

302. **Interoperability** – 🖥 The ability of hardware or software components to work together effectively.

303. **Intranet** – 🖥 A network owned by an organization that functions like the public Internet but is secure from outsider access and regulated by representatives of the organization often called system administrators.

304. **IP** – 🖥 *See* **Internet Protocol (IP)**.

305. **IP Multicast** – 🖥 Delivery of a learning event over a network from a single source to multiple participants using the Internet Protocol.

306. **IPTV** - 🖥 Internet protocol television: television/video delivered over broadband to PCs or set-top boxes (STBs).

307. **ISDN** – 🖥 The acronym for *Integrated Services Digital Network*, a telecommunications standard enabling communications channels to carry voice, video, and data simultaneously.

308. **ISO** – 🖥 The acronym for *International Organization for Standardization*, an international federation of national standards bodies. See http://www.iso.org/iso/home.html.

309. **ISP** – 🖥 See **Internet Service Provider (ISP)**.

310. **IT** – 🖥 The acronym for *Information Technology*; the industry or discipline involving the collection, dissemination, and

management of data, typically through the use of computers.

311. **IT Training** – 💻 A combination of desktop training and information systems and technical training. Includes training in areas such as system infrastructure software, application software, and application development tools.

312. **ITFS** – ⊗ The acronym for *Instructional Television Fixed Service;* a microwave-based, high-frequency television service used for educational program delivery.

313. **iTunes U** – 📖 Allows colleges to distribute world-class educational content worldwide

314. **Java** – 💻 An object-oriented programming language developed by Sun Microsystems. Java isn't dependent on specific hardware and can be launched from within an HTML document or stand- alone.

315. **Java Applet** – 💻 A small program (i.e., application) written in Java. Java applets are sent from the host computer to the end user's computer (known as the client) and is then run (or executed).

316. **JavaScript** – 💻 A scripting language that's simpler than Java and can add interactivity to Webpages. JavaScript commands allow tasks to be completed by the Web browser when a user views a Webpage. (For example, making a graphic change when a user moves the cursor over it.)

317. **JDBC** – 💻 The acronym for *Java Database Connectivity;* an application program interface used to connect programs written in Java to the data in databases.

318. **Job Aid** – 📖 Any simple tool that helps a worker do his or her job (for example, a flow chart to follow when answering a customer service call). Job aids generally provide quick reference information rather than in-depth training.

319. **Joomla** – 💻 A free and open source Content Management System (CMS) for publishing content on the World Wide Web and intranets and a model–view–controller (MVC) Web application framework that can also be used independently. Joomla has been downloaded over 30 million times.   Over 10,000 free and commercial extensions are available from the official Joomla Extension Directory and more are available from other sources. It is estimated to be the second most used CMS on the Internet after WordPress.

320. **JPEG** – 💻 The acronym for *Joint Photographic Experts Group.* 1) A format for image compression that enables the user to weigh image quality against file size. JPEG is a lossy compression method, meaning that when the image is compressed, the file is made smaller by discarding some of its information. The more the file is compressed, the more information is discarded, and the more the image quality is degraded. 2) The subgroup of the International Organization for Standardization responsible for setting the standards for the image file format that bears its name.

321. **Just-In-Time** – 📖 Popular term to described the benefit of e-learning's accessibility, i.e., workers can access online, just-in-time training whenever they have a question about a product; no longer do they have to enroll in, and wait for, a classroom training program.

322. **Just-In-Time Learning** – 📖 An approach to educational delivery in which small segments of learning are delivered when and where the need arises. Not based on fully understanding, but on specific problem-solving implementations. Response to need education and training needs in a rapidly changing environment.

323. **Key Driver** – 🗁 A factor that influences shapes or *drives* the outcome of a goal, initiative, or activity.

324. **Key Performance Indicator (KPI)** – 🗁 A set of quantifiable measures that a company or industry uses to gauge or compare performance in terms of meeting their strategic and operational goals. KPIs vary between companies and industries, depending on their priorities or performance criteria. Also referred to as key success indicators (KSI).

325. **Kirkpatrick Evaluation Model –** 📖 The four step training evaluation methodology developed by Donald Kirkpatrick in 1975. Level 1 refers to the students to reaction to the training (often called smile sheets). Level 2 refers to the measurement of actual learning (i.e., knowledge transfer). Level 3 measures behavior change. Level 4 measures business results**.**

326. **KMS** – 💻 *See* **Knowledge Management Systems (KMS)**.

327. **Knowledge Asset** – Intellectual content possessed by an organization. Any piece of information that a worker at a company knows, from customer names to how to fix a piece of machinery, can be considered a knowledge asset. Assets can be codified in a variety of formats, such as PowerPoint slides, Word documents, audio and video files, and so forth.

328. **Knowledge Base** – 💻 A specialized database or information repository that provides a means for information to be collected, organized, shared, searched and utilized.

329. **Knowledge Federation** – 💻 The act of organizing related information.

330. **Knowledge Gardens** – 💻 An aggregation of useful information in the form of tagging, bookmarking, annotating, linking, and structured group discussions. An ordered knowledge garden includes structured but emergent networks of claims and arguments related to global issues and emerging trends, typically in the form of a public topic map. The concept was derived

from the concept of a dynamic knowledge repository (DKR) as developed by Douglas Engelbart.

331. **Knowledge Management** – 💻 The process of capturing, organizing, and storing information and experiences of workers and groups within an organization and making it available to others. By collecting those artifacts in a central or distributed electronic environment (often in a database called a knowledge base), KM aims to help a company gain competitive advantage.

332. **Knowledge Management Systems (KMS)** – 💻 A distributed enterprise software system for managing knowledge in organizations; specifically refers to a commercial systems designed in the mid-1990s to run on workstations and developed based on research conducted at Carnegie Mellon University. Although typically associated with groupware such as Lotus Notes in the 1990s, the increase in Internet bandwidth and speeds since that time has led to the development on on-demand services as well as open source software such as PHPKB.

333. **Knowledge Navigation** – 💻 A knowledge map is generally a visual representation of *knowledge about knowledge* rather than of knowledge itself. It helps to detect the sources of knowledge and structure of knowledge by representing the elements and structural links of application domains. Knowledge Navigation uses the analogy of navigation and it is based on four main elements: 1) Destination, 2) Compass, 3) Map, and 4) Scale.

334. **Knowledge Transfer** – 📖 Describes a view of education in which knowledge is packaged and transmitted to learners. In distance education this is manifested in very precise and careful organization of content with relatively little emphasis on interaction except for remedial purposes, since it is assumed all that is needed is contained in the package.

335. **Knowledge-Bank** – 💻 A comprehensive repository designed to serve as the primary sources for of all information, data, ideas, etc., relating to a specific industry and/or subject.

336. **LCMS** – 📖 *See* **Learning Content Management System (LCMS)**.

337. **Learner Autonomy** – 📖 Concept that learners have different capacities for making decisions regarding their own learning. Relates to the structure and interactive expectations of a distance education course. A key element in adult learning.

338. **Learner-Centered Education (LCE)** – 📖 LCE flips the traditional Teacher-Centered Model of Education.   It shares responsibility for decision-making about what is taught, how it is taught, and when it is taught with students.   This model views students as active participants in the educational process and with instructors serving as facilitators to keep them on track and resolve problems.

339. **Learner-Centric** – 📖 **A focus on the learning needs of the** learner, not the instructor, institution, or process.

340. **Learner-Focused** – 📖 Descriptive of a humanistic perspective in education in which the learner is assumed to have a high degree of autonomy.

341. **Learning** – A cognitive and/or physical process in which a person assimilates information and temporarily or permanently acquires or improves skills, knowledge, behaviors, and/or attitudes. A process that builds on or modifies understanding, capacities, abilities, attitudes and propensities in the individual. There are different theories about learning, the most important being Humanistic, Behavioristic, Cognitive, and Social Learning theory. Each supports a different approach to teaching and therefore to distance education.

342. **Learning Analytics** – 📖 The measurement, collection, analysis, and reporting of data about learners and their contexts, for purposes of understanding and optimizing learning and the environments in which it occurs.

343. **Learning Apps** – 📖 An abbreviation for the term, Learning Application.   However, there is a difference.   Apps are written for lightweight OSs or browsers and often for mobile phones, eReaders, and/or touchpad's.   The term "app" also suggests a quick install, single focus, no or low fee (compared with an application), and ease of use.

344. **Learning Community** – 📖 A group of people who share common emotions, values or beliefs, are actively engaged in learning together from each other, and by habituation. Such communities have become the template for a cohort-based, interdisciplinary approach to higher education. Curricular learning communities are classes that are linked or clustered during an academic term, often around an interdisciplinary theme, and enroll a common cohort of students. A variety of approaches are used to build these learning communities, with all intended to restructure the students time, credit, and learning experiences to build community among students, between students and their teachers, and among faculty members and disciplines.

345. **Learning Content Management System (LCMS)** – 📖 A web-based administration program that facilitates the creation, storage, and delivery of unique learning objects, as well the management of students, rosters, and assessments. A software application (or set of applications) that manages the creation, storage, use, and reuse of learning content. LCMSs often store content in granular forms such as learning objects. An LCMS is a multi-user environment where learning developers can create, store, reuse, manage, and deliver digital learning content from a central object repository.

346. **Learning Environment** – 📖 The physical or virtual setting in which learning takes place.

347. **Learning Management System (LMS)** – 📖 A software program that manages the administration of training. The LMS registers users, tracks courses in a catalog, records data from learners; and provides reports to management. An LMS is typically designed to handle courses by multiple publishers and providers. It usually doesn't include its own authoring capabilities; instead, it focuses on managing courses created by a variety of other sources. At the simplest level, it serves as a tracking system. LMS's range from simple course-by-course registration systems to large, real-time databases that deal with personalization, learning prescriptions, job competencies, and parsing learning objects.

348. **Learning Object** – 📖 A reusable, media-independent collection of information used as a modular building block for e-learning content. Learning objects are most effective when organized by a metadata classification system and stored in a data repository such as an LCMS. A machine-addressable chunk of learning. When labeled with metadata, an eLearning system can mix and match learning objects to create individualized learning experiences. Controversy swirls around the question, How large is a chunk? A course is too large -- that's yesterday's object.

349. **Learning Object Metadata** - 📖 A data model (generally encoded in XML) used to describe a learning object and similar digital resources used to support learning. The purpose of learning object metadata is to support the reusability of learning objects, to aid discoverability, and to facilitate their interoperability, usually in the context of online learning management systems (LMS).

350. **Learning Objective** – 📖 A statement establishing a measurable behavioral outcome, used as an advanced organizer to indicate how the learner's acquisition of skills and knowledge is being measured.   The clear and measurable statement of the behavior that must be observed after training is concluded in order to consider the training a success. According to Robert Mager's work, a learning objective contains a condition statement, a performance statement, and a criterion statement.

351. **Learning Organization** – 📖 An organization where people continually expand their capacity to create the results they desire, where new patterns of thinking are nurtured, and where collective aspiration is set free. The Learning Organization transforms through continuous learning by the whole organization and all of its members.

352. **Learning Platform** - 📖 Learning platform is a generic term to describe a broad range of teaching and learning systems used to deliver and support learning. A learning platform usually combines several functions, such as organizing, mapping and delivering curriculum activities and the facility for learners and teachers to have a dialogue about the activity. So, the term learning platform is also applied to a virtual learning environment (VLE) or to the components of a managed learning environment (MLE). A VLE is a software tool which brings together resources for curriculum mapping, delivery, assessment, tutor support, communication and tracking. A managed learning environment (MLE) refers to the whole range of information systems and processes that support learning and the management of learning within an institution.

353. **Learning Portal** – 📖 Any Website that offers learners or organizations consolidated access to learning and training resources from multiple sources. Operators of learning portals are also called content aggregators, distributors, or hosts.

354. **Learning Service Provider (LSP)** – 💻 A third party company that hosts e-learning programs/content on its own servers. Clients pay to access, or to lease, these programs.   LSP deliver eLearning - including learning management -- over the Internet. A learning ASP. Focus in-house IT on core processes; outsource eLearning to an LSP.

355. **Learning Solution** – 📖 1) Any combination of technology and methodology that delivers learning. 2) Software and/or hardware products that suppliers tout as answers to businesses' training needs.

356. **Learning Space** – 📖 An imaginary geography in which the learning enterprise flourishes. Mapped by market analysts and mined by consultants, this territory is a recent annexation to the business landscape.

357. **Learning Style** – 📖 Relatively stable and developed ways in which a person perceives, behaves, and interacts in a learning environment. An individual's unique approach to learning based on strengths, weaknesses, and preferences. Though experts do not agree how to categorize learning styles, an example of a categorization system is one that separates learners into auditory learners, visual learners, and kinesthetic learners.

358. **Lecture Capture** – 📖 Technology that allows instructors to record classroom-based activities and make such digital files available for review after the class. Onscreen capture software, webcasting, smart podiums and the Internet have made it easier for instructors to record (capture) their classroom presentations and make them available to students for content review as well as offering tools for developing online course content.

359. **Legacy System** – 💻 For the purposes of this plan, a system can be considered legacy if it meets one of the following criteria – (1) It consists of one or more components that are no longer supported by a manufacturer, or (2) It is based on a platform or technology that CCC has made a stated decision to move away from.

360. **Lifelong Learning** – 📖 Learning throughout the lifetime with emphasis on independent study determined by contextual personal needs.

361. **Link** – 💻 The result of HTML markup signifying to a browser that data within a document will automatically connect with

either nested data or an outside source. Used in the design of hypertext.

362. **LISTSERV** – 🖥 Email list management software developed by L-Soft International.   A generic term that has been given to useful software programs that enable e-mail-based dissemination of topical information to subscribers. When e-mail is addressed to a listserv, it is automatically broadcast to everyone on the list. The result is similar to a newsgroup or forum, except that the messages are transmitted as e-mail.

363. **Live Question Tool** – 🖥 An online service that lets a group of people submit questions, reply to questions, and vote on questions that they would like to see addressed.

364. **LLU** – 🖥 The acronym for *Local Loop Unbundling*.   The process under which telecoms operators install their own equipment in BT exchanges and supply services directly to customers.

365. **LMS** – *See* **Learning Management System (LMS)**.

366. **Localization** – 🖥 The tailoring of an offering to meet the specific needs of a geographic area, product, or target audience. The process in which a program is converted for delivery in a different country. Unlike translation which connotes a simple re-writing of words, localization includes re-writing for cultural and social differences as well.

367. **Location-Aware Applications** – 🖥 Applications that deliver online content to users based on their physical location. Various technologies employ GPS, cell phone infrastructure, or wireless access points to identify where electronic devices such as mobile phones or laptops are, and users can choose to share that information with location-aware applications. Those applications can then provide users with resources such as a *you are here* marker on a city map. Applications tied to mobile networks that rely on location-based services provide content to various mobile devices, including tablets, smartphones, and laptop computers.

368. **Locus of Control** – 📖 The concept of learner autonomy, e.g., beliefs about whether the outcomes of our actions are contingent on what we do (internal control orientation) or on events outside our personal control (external control orientation).

369. **LRN** – 🖥 See **Microsoft's Learning Resource iNterchange (LRN)**.

370. **LSP** – 🖥 *See* **Learning Service Provider**.

371. **Lurking** – Reading the postings in a discussion forum or on a listserv but not contributing to the discussion.

372. **Mahara E-Portfolio** – 🖥 A stand-alone OpenSource ePortfolio System that can be integrated into a virtual learning framework or Learning Management System. Mahara is designed to enhance the overall learning environment by creating a learner-centered personal learning space. It also supports institutional learning communities. First established in mid 2006, the Mahara project started as collaborative venture funded by New Zealand's e-learning Collaborative Development Fund (eCDF), involving Massey University, Auckland University of Technology, The Open Polytechnic of New Zealand, and Victoria University of Wellington.   Ongoing development has been made possible by support from New Zealand's Ministry of Education and a Mellon Foundation Award for Technology Collaboration.

373. **Markup** – 🖥 Text or codes added to a document to convey information about it. Usually used to formulate a document's layout or create links to other documents or information servers. HTML is a common form of markup.

374. **Mashups** – 🖥 In web development, refers to a web application or web page that uses and combines data, presentation, or functionality from two or more sources to create new services. Dedicated to making existing data more useful, such mashups are generally created as client applications or are hosted online to provide permanent access to the needed data sources.

375. **Mastery Learning** – 📖 Also known as criterion referenced instruction, in which students are evaluated as having mastered or not mastered specific criteria or learning objectives.

376. **Mentoring** – 📁 A career development process in which less experienced workers are matched with more experienced colleagues for guidance. Mentoring can occur either through formal programs or informally as required and may be delivered in-person or by using various media.

377. **Metacognition** – Self-awareness of how you personally learn leading to the ability to apply strategies to improve learning.

378. **Metadata** – 🖥 Information that provides macro-level details about a course object, such as author, title, subject, date created, etc. Typically, metadata is recorded in XML files and are read by LMS and LCMS systems. Information about information. Often, metatags that describe what's inside a chunk of learning. Generally machine-readable. Analogous to a barcode on an incoming shipment.

379. **Dublin Core** – 🖥 A set of vocabulary terms which can be used to describe resources for the purposes of discovery. The terms can be used to describe a full range of web resources: video, images, web pages etc. and physical resources such as books and objects like artworks. The full set of Dublin Core metadata terms can be found on the Dublin Core Metadata

Initiative (DCMI) website. The original set of 15 classic metadata terms, known as the Dublin Core Metadata Element Set is endorsed in the following standards documents: (1) IETF RFC 5013, (2) ISO Standard 15836-2009, and (3) NISO Standard Z39.85.   Dublin Core Metadata can be used for multiple purposes, from simple resource description, to combining metadata vocabularies of different metadata standards, to providing interoperability for metadata vocabularies in the Linked data cloud and Semantic web implementations.

380. **Meta-Learning** – The process of learning wherein learners become aware of and increasingly in control of habits of perception, inquiry, learning, and growth that they have internalized.

381. **Metatag** – An HTML tag identifying the contents of a Website. Information commonly found in the metatag includes copyright info, key words for search engines, and formatting descriptions of the page. Descriptive labels applied to media assets, pages, information objects and/or learning objects that describe the object so it can be managed more effectively. Machine-readable.

382. **Microblogging** – A broadcast medium in the form of blogging; its content is typically smaller in both actual and aggregate file size than a traditional blog. Microblogs facilitate the exchange of small elements of content such as short sentences, individual images, or video links as small messages that are sometimes called microposts. Tweets, text messages, instant messages, digital audio, and digital video content are alternative ways of publishing microblog entries besides appearing on the web-based interface.

383. **Microsoft's Learning Resource iNterchange (LRN)** – A format that gives content creators a standard way to identify, share, update, and create online content and courseware. LRN is the first commercial application of the IMS Content Packaging Specification.

384. **Middleware** – Computer software that manages the interaction between disparate applications across heterogeneous computing platforms and is often used between application programs and other software facilities, such as database managers. It is used most often to support complex, distributed applications, and it includes web servers, application servers, content management systems, and similar tools that support application development and delivery. Middleware is especially integral to modern information technology based on XML, SOAP, Web services, and service-oriented architecture.

385. **Mixed-Media** – The combination of different delivery media like books, audiotapes, videotapes and computer programs in one curriculum. Not to be confused with multimedia, where different media are integrated into one product.

386. **MMS** – Multimedia messaging service: a network service that allows mobile phones to exchange photos and other files.

387. **Mobile Apps** – See **Learning App**.

388. **Mobile Computing** – The ability to use computing capability without a pre-defined location and/or connection to a network, most commonly in relation to Cell/Mobile Devices.   Also know as Pervasive Computing and considered by many to be synonymously with Ubiquitous Computing.   This is an emerging concept that brings in revolutionary paradigms for computing models in the 21st century and beyond.   Developments in technologies such as wireless communications, networking, embedded systems, wearable computers, sensors, RFID tags, smart spaces, middleware, software agents, etc., have led to the evolution of pervasive computing platforms the natural successor of mobile computing systems.

389. **Mobile Learning (M-Learning)** – Learning that takes place via such wireless devices as cell phones, personal digital assistants (PDAs), or laptop computers. Stands for mobile learning and refers to the usage of training programs on wireless devices like cell phones, PDAs, or other such devices.

390. **Moblog** – A blog posted to the internet from a mobile device.

391. **MoCA** – Multimedia over Coax Alliance: a non-profit organization concerned with developing and promoting specifications for carrying digital entertainment and information content over coaxial cable in private homes.

392. **Model** – A representation of an object, process, behavior or attitude used by a learner for comparison/contrast and duplication/avoidance. Both positive and negative examples can serve as models.

393. **Modeling** – The activity of recreating the functions and aspects of a model. When a novice sales person watches an expert make a sales call, and then mimics the expert's tone and wording, he or she is exhibiting a modeling process.

394. **Modular** – E-learning that's made up of standardized units that can be separated from each other and rearranged or reused.

395. **Modularization** – Breaking ideas and information up into small chunks or distinct instructional components.

396. **MOO** – A MUD created with an object-oriented programming language.

397. **Moodle** – Abbreviation for **Modular Object-Oriented Dynamic Learning Environment**. An Open Source Course Management System (CMS), Learning Management System (LMS), or Virtual Learning Environment (VLE). It has become

the most popular LMS among educators around the world as a tool for creating online dynamic web sites for their students. As of 2011 Moodle had a user base of 72,177 registered and verified sites, serving 57,112,669 users in 5.8 million courses.

398.   **MP3** – ☻ A format for music file compression that enables users to download music over the Internet.

399.   **MPEG** – 🖥 The acronym for *Moving Picture Experts Group.* 1) A high-quality video file format that uses compression to keep file sizes relatively small. 2) The subgroup of the International Organization for Standardization responsible for setting the standards for this format.

400.   **MUD** – 📖 The acronym for *Multi-User Dimension* or *Multi-User Domain.* A simulated virtual world in which users interact with each other, often by taking on character identities called avatars. Originally created for game-playing, MUDs are growing in popularity for online learning and virtual community-building.

401.   **Multicasting** – 🖥 The transmission of information to more than one recipient. For example, sending an email message to a list of people. Teleconferencing and videoconferencing can also use multicasting. See also broadcasting and unicasting.

402.   **Multimedia** – The integration of different media, including text, graphics, audio, video and animation, in one program, also referred to as newmedia. Encompasses interactive text, images, sound, and color. Multimedia can be anything from a simple PowerPoint slide slow to a complex interactive simulation.

403.   **Multimedia Classrooms** – ☻ Classrooms with basic technology for teaching and learning. This equipment may vary but, there are standards each must meet in order to be considered a multimedia classroom such as: fixed data/video display, PC with Internet connectivity at instructor station, wireless network access, audio input, AV control system, laptop connection with audio, video input, and a document camera.

404.   **Multi-Touch Interfaces** – 🖥 In computing, multi-touch refers to a touch sensing surface's (trackpad or touchscreen) ability to recognize the presence of two or more points of contact with the surface. This plural-point awareness is used to implement advanced functionality such as pinch to zoom or activating predefined programs. Some companies further break down the various definitions of multi-touch by defining multi-touch as a touch-screen's ability to register three or more distinct positions. Some devices also recognize differences in pressure and temperature. Unlike a keyboard or a single-point input device such as a mouse or a traditional touchpad, multi-touch technology introduces users to swipes, pinches, rotations, and other actions that allow for richer, more immediate interaction with digital content. Multi-touch technology can be found not only in touchpads but also in displays, in which the user manipulates icons and other content directly on a screen.

405.   **Narrowband** – 🖥 1) In data transmission, a limited range of frequencies. 2) More specifically, a network in which data transmission speeds range from 50 Bps to 64 Kbps. See also broadband.

406.   **Navigation** – 🖥 Finding your way from page to page on the World Wide Web.

407.   **Needs Assessment** – 📖 Process aimed at identifying priorities for the cost-effective allocation of resources. A needs assessment might precede the decision to establish a distance education organization; at another level it would precede the decision of which courses to offer. Needs assessment is an on-going process, taking into account the results of formative and summative evaluation.

408.   **Negative Reinforcement** – 📖 Encouraging a correct behavior by punishing any behaviors other than it. An example is putting a child into time out after she throws a tantrum. According to most adult learning research negative reinforcement is not recommended for most adult learning situations.

409.   **Nesting** – 🖥 Placing documents within other documents. Allows a user to access material in a nonlinear fashion, the primary requirement for developing hypertext.

410.   **Net** – 🖥 Common nickname for the Internet.

411.   **Netiquette** – 🖥 Online manners. The rules of conduct for online or Internet users. Stands for Internet etiquette. Refers to the commonly accepted rules of behavior and communication in e-mails, chat rooms, bulletin boards, etc. For example, proper netiquette is to not use ALL CAPITAL LETTERS in messages because this is the equivalent of shouting.

412.   **Netscape Navigator** – 🖥 A proprietary web browser that was popular in the 1990s. It was the flagship product of the Netscape Communications Corporation and the dominant web browser in terms of usage share, until 2002 when its use almost disappeared.   Netscape's Mozilla Suite served as the base for a browser-only spinoff called Mozilla Firefox and Netscape versions 6 through 9.   AOL formally stopped development of Netscape Navigator in 2007, but continued supporting security updates until March 2008.

413.   **Network** – 🖥 A collection of computers that can exchange information and share resources. Two or more computers that are connected so users can share files and devices (for example, printers, servers, and storage devices).

414.   **Newsgroup** – 🖥 An online discussion hosted on the Usenet network. Sometimes also called a forum. An electronic

bulletin board reserved for discussion of a specific topic.

415.   **Next Generation Presentation Tools** – ☻ Prezi, Zoho Show, Sliderocket, Google Docs Presentations, 280 Slides, etc. are example of next generation presentation tools.   Each represent a model that emphasizes the collaborative nature of the web thereby allowing users to move away from the sequential nature of slides, create and store presentation content online, collaborate on presentations with colleagues, share presentations with the world and receive feedback from either the private or public audience

416.   **NFC** – 💻 Near-field communication: a short range, peer-to-peer wireless interface protocol for easily setting up connections between devices. Once the initial connection has been established, faster and longer range protocols such as Wi-Fi can be used to exchange data.

417.   **Nurnburg Funnel** – 📖 Source of the metaphor of training being akin to pouring knowledge into a person's head.

418.   **Objective** – 📖 A statement describing aims in specific, measurable, attainable, realistic, and timed ways. A good learning objective contains one action, the conditions under which the action should be performed and a criterion for its evaluation. While developed by behavioristic psychologists, learning objectives can be a valuable tool in distance teaching that follows other learning theories.

419.   **OCR** – 💻 *See* **Optical Character Recognition**.

420.   **ODBC** – 💻 The acronym for *Open Database Connectivity*. An application program interface to access information from numerous types of databases, including Access, dbase, DB2, and so forth.

421.   **Offline** – 💻 Operation of a computer while not connected to a network.

422.   **On-Demand Video**, also known as **Video-On-Demand (VOD)** – ☻ Systems which allow users to select and watch video or audio content on demand. IPTV technology is often used to bring video on demand to televisions and personal computers. Television VOD systems stream content through a set-top box, a computer or other device, allowing viewing in real time, or download it to a device such as a computer, digital video recorder or portable media player for viewing at any time. The majority of cable- and telco-based television providers offer both VOD streaming, including pay-per-view and free content, whereby a user buys or selects a movie or television program and it begins to play on the television set almost instantaneously, or downloading to a DVR rented from the provider, or downloaded onto a pc, for viewing in the future. Internet television, using the Internet, is an increasingly popular form of video on demand.

423.   **Online** – 💻 The state in which a computer is connected to another computer or server via a network. A computer communicating with another computer.   Operation of a computer while connected to a network.

424.   **Online Analytical Processing (OLAP)** – An approach to rapidly answer multi-dimensional analytical (MDA) queries. OLAP is a part business intelligence, which also encompasses relational reporting and data mining. Examples of OLAP include business reporting for sales, marketing, management reporting, business process management (BPM), budgeting and forecasting, financial reporting and similar areas, with new applications coming up, such as agriculture. The term OLAP was created as a modification of the traditional database term OLTP (Online Transaction Processing).

425.   **Online Community** – 💻 A meeting place on the Internet for people who share common interests and needs. Online communities can be open to all or be by membership only and may or may not be moderated. Synonym for e-learning.

426.   **Online Learning** – 📖 Learning delivered by Web-based or Internet-based technologies. *See also* **Web-based training** and **Internet-based training**.

427.   **Online Training** – 📖 Web- or Internet-based training.

428.   **Ontology** – 💻 The capstone of the Semantic Web. XML describes what the data is. RDF explains what the XML tag means in our context. Ontology describes how all the pieces fit together.

429.   **Open Content** – 📖 A term coined by David Wiley (Utah State University) in 1998 which describes a creative work that others can copy or modify. The term is closely related to open source in software. When the term OpenContent was first used by Wiley, it described works licensed under the Open Content License (a non-free share-alike license) and perhaps other works licensed under similar terms.   It has since come to describe a broader class of content without conventional copyright restrictions. The openness of content can be assessed under the '4Rs Framework' based on the extent to which it can be reused, revised, remixed and redistributed by members of the public without violating copyright law.   Unlike open source and free content, there is no clear threshold that a work must reach to qualify as 'open content'.   Although open content has been described as a counterbalance to copyright, open content licenses rely on a copyright holder's power to license their work.

430.   **Open Courseware (OCW)** – 📖 A term applied to course materials created by universities and shared freely worldwide via the Internet. The movement started in 1999 at the University of Tübingen in Germany. OCW movement grew in the United States with the launch of MIT's OpenCourseWare (October 2002). The movement has been reinforced by the launch

of similar projects at Yale, the University of Michigan, and the University of California Berkeley.

431. **Open Education** – 📖 An imprecisely defined term often used synonymously with distance education and popular in countries that have traditionally had a very closed and elitist higher education system, to indicate relative freedom of access and choice of routes to course completion. Education that is not place-bound; occurring in student's environment.

432. **Open Education Resources (OER)** – 📖 Digital materials that can be re-used for teaching, learning, research and more, made available free through open licenses, which allow uses of the materials that would not be easily permitted under copyright alone.

433. **Open Journaling** – 📖 Replaces traditional peer-reviewed publishing with an open access model, in which the submission, review, and publishing of content is transparent and open allowing authors to track the progress of their submissions, access reviewer comments, and revise and resubmit articles. Reviewers, editors, proofreaders, and others involved in the process also have access to the status of submitted material and the issues of the publication. Open journaling tools manage this process through an online application that lets users publish academic journals and other scholarly material more easily and at considerably lower cost than with traditional methods.   This same process can be used in classes to manage and facilitate collaborative writing projects.

434. **Open Learning** – 📖 Used synonymously with *open education* to emphasize systems of education which allow entry into the system without consideration of prior educational experiences. Also, describes a model of distance education developed by Kember which considers the influences of social and academic factors on learning outcomes.

435. **Open Source Software** – 💻 Generally, software for which the original program instructions, the source code, is made available so that users can access, modify, and redistribute it. The Linux operating system is an example of open source software. Software that meets each of nine requirements listed by the non-profit *Open Source Initiative* in its Open Source Definition.

436. **Open Systems** – 💻 A system which continuously interacts with its environment. The interaction can take the form of information, energy, or material transfers into or out of the system, depending on the discipline which defines the concept. An open system is in contrast to an isolated system which exchanges nothing with its environment.

437. **OpenSource** – 💻 A philosophy that promotes free redistribution and access to a product's design and implementation details. The Open-Source Software refers to programs in which the source code is available to the general public for use and/or modifications from its original design free of charge, i.e., open. Open source code is typically created as a collaborative effort in which programmers improve upon the code and share the changes within the community.

438. **OpenSource LMS** – 📖 Free Learning Management System (LMS) software.   Examples include: (1) Moodle, (2) Sakai, (3) Docebo, (4) eFront, (5) Dokeos, (6) Claroline, (7) ATutor, (8) .LRN, (9) OpenElms, (10) Ganesha, and (11) ILIAS.

439. **Operating System** – 💻 A computer program that controls the components of a computer system and facilitates the operation of applications. Windows Me, Windows XP, Linux, and MacOS are common operating systems.

440. **Optical Character Recognition (OCR)** – 💻 The mechanical or electronic conversion of scanned images of handwritten, typewritten or printed text into machine-encoded text. OCR is widely used as a form of data entry for original paper data source documents, e.g., sales receipts, mail, or any number of printed records. It is a common method of digitizing printed text so information can be electronically searched, stored more compactly, displayed on-line, and used in machine processes such as machine translation, text-to-speech and text mining. OCR is a field of research in pattern recognition, artificial intelligence and computer vision.

441. **Organizational Culture** – 📁 An organization's *personality*; patterns of shared and normed meaning and behavior.

442. **Origination Site** – 💻 The location from which a teleconference originates.

443. **Pachyderm** – An easy-to-use multimedia authoring tool. Designed for people with little multimedia experience, Pachyderm is accessed through a web browser and is as easy to use as filling out a web form. Authors upload their own media (images, audio clips, and short video segments) and place them into pre-designed templates, which can play video and audio, link to other templates, zoom in on images, and more. Once the templates have been completed and linked together, the presentation is published and can then be downloaded and placed on the author's website or on a CD or DVD ROM.

444. **Packet** – 💻 A bundle of data transmitted over a network. Packets have no set size; they can range from one character to hundreds of characters.

445. **Page Turner** – 📖 A derogatory term for e-learning that offers little to no graphics or interaction, instead comprising mainly pages of text.

446. **Paradigm Drag** – 📁 When old thinking holds back new. From David Gelernter's *Machine Beauty: Elegance and the Heart of Technology*.

447. **Paradigms of Education** – 📖 A set of assumptions, concepts, values, and practices that constitutes a way of viewing

reality for the community that shares them. In education, paradigms are coherent sets of views about the nature of knowledge, thus of learning, and thus of the role of the teacher; distance education is different in a paradigm that assumes objectivity of information controlled by the teacher that assumes the personal creation of knowledge and a facilitative role for the teacher. Paradigms, or systems, of education are influenced by current values and responses to cultural circumstances. Within distance education, the paradigm has shifted away from the traditional educational paradigm, which was institution-centered, rigidly scheduled, and traditional-aged student-centered.

448. **PCMCIA Slot** – 💻 Personal Computer Memory Card International Association: PCMCIA is a standards body that defines standards for PC/ExpressCards and interfaces that are used to add extra memory or functionality to devices such as notebook computers.

449. **PDA** – 💻 *See* **Personal Digital Assistant***.*

450. **PDF** – 💻 The acronym for *Portable Document Format***.** The Portable Document Format developed by Adobe Systems to enable users of any hardware or software platform to view documents exactly as they were created--with fonts, images, links, and layouts as they were originally designed.

451. **Pedagogy** – 📖 A term associated with teaching; specifically teaching children, but often used interchangeably with andragogy.

452. **Peer-to-Peer** – 💻 – A computer environment where the PC is both client and server, able to swap resources directly with other PCs. A collaborative learning approach where peers interact online and or face-to-face to facilitate and enhance learning.

453. **Peer-to-Peer Network (P2P)** – 💻 A communications network that enables users to connect their computers and share files directly with other users, without having to go through a centralized server. *Groove* is an example of an application that runs on a peer-to-peer network.

454. **Performance** – 📖 One of the three required parts of a properly composed learning objective. Observable and measurable actions that should be demonstrated by the learner after the completion of training are detailed in the performance statement. The goal of learning, e.g., productivity, results.

455. **Performance Objective** – 📖 The performance capability the learner should acquire by completing a given training course. Synonymous with learning objective.

456. **Performance Support** – 📖 Learning imbedded in work. Microsoft's talking paperclip and Wizards that guide users through applications are examples.

457. **Performance-Based Instruction** – 📖 Learning activities centered on the acquisition of skills more fundamentally than knowledge. Performance-based instruction, also called criterion-referenced instruction, relies on learning objectives to communicate what is expected to be achieved and evaluation of task completion to determine success.

458. **Permalink** – 💻 A permanent marker or reference point to a certain document on the World Wide Web. Most commonly used for weblogs, news sites and newspapers. A permalink is denoted through the use of a symbol (pound sign, arrow, dot), date of content creation, the word permalink or image.

459. **Personal Digital Assistant (PDA)** – 💻 Handheld computer device used to organize personal information such as contacts, schedules, and so forth (e.g., calendar, rolodex, to do list). PDAs are expanding in their capabilities to include wireless e-mail and Internet access, thus opening opportunities for mobile learning and support (m-learning). *See* Personal Digital Assistant.

460. **Personal Learning Environments** – 📖 A systems that help learners take control of and manage their own learning including: setting learning goals, managing learning (content and process), and communicating with others. PLE integrates numerous Web 2.0 technologies (e.g., blogs, Wikis, RSS feeds, Twitter, Facebook, etc.) around the independent learner in a web of content, connected to other nodes and content creation services used by other students. It is not an institutional system, rather a personal learning tool, where content is reused and remixed according to the student's own needs and interests.

461. **Personal Learning Space** – 📖 A system/environment positioned between the Institutional and Personal Learning Environments, i.e., ePortfolio plus related tools. The PLS is provided by the institution but controlled by students, providing a unique balance between direction and independence that encourages student engagement.

462. **Personalization** – 📖 Learning opportunities tailored to the learner's background, style, previous knowledge, etc. Mass customization and 1:1 marketing applied to learning. Results saved time, accelerated learning, more achieve performance gain. Tailoring Web content to an individual user can be accomplished by a user entering preferences or by a computer guessing about the user's preferences.

463. **Pilot Test** – 💻 Also known as an Alpha test or formative evaluation. A version of the training program is delivered to a

sub-set of the target audience for an evaluation of its instructional effectiveness. Also known as a simple step to help avoid disaster, on a project.

464. **Pixel (Picture Element)** – Tiny dots that make up a computer image. The more pixels a computer monitor can display, the better the image resolution and quality. On a color monitor, every pixel is composed of a red, a green, and a blue dot that are small enough to appear as a single entity. Term created by joining the words picture and cell, a pixel is the basic unit of measurement for picture displays. Computer screen size is often measured in pixels, with 640x480 and 800x600 being common measurements.

465. **Plug-and-Play** – The ability of a personal computer's operating system to recognize and install-- with little to no intervention by the user--new peripheral devices that are added to the computer. Also spelled plug-n-play or plug 'n' play.

466. **Plugfest** – An event during which devices are tested for interoperability with emerging standards by physically connecting them. An example is the biannual event sponsored by the Advanced Distributed Learning Network that brings together early adopters of the SCORM specifications to validate and document their process in meeting requirements for reuse, adaptability, interoperability, cost-effectiveness, and global access.

467. **Plug-In** – An accessory program that adds capabilities to the main program. Used on Webpages to display multimedia content. A small piece of software that works in conjunction with a web browser to add additional functionality, like streaming audio or video.

468. **PMP** - Personal media player: a mobile device, with built-in color display, that can store and play a variety of media files such as photos, video and music.

469. **PNG** – The acronym for *Portable Network Graphics.* The patent-free graphics compression format developed by Macromedia expected to replace GIF. PNG offers advanced graphics features such as 48-bit color and transparent backgrounds.

470. **Podcast** – Podcasts are audio files that can be easily distributed via the web and downloaded to computers and personal audio players. Podcasts are often syndicated so that users can subscribe (usually for free) to a particular service and have new content automatically downloaded. The software required to produce and distribute podcasts is available for free or at little cost, making this form of 'broadcasting' extremely accessible.

471. **Podcasting & Vodcasting** – A type of digital media consisting of an episodic series of audio, video, PDF, or ePub files subscribed to and downloaded through web syndication or streamed online to a computer or mobile device. The word is derived from broadcast and pod (e.g., iPod) since podcasts are often listened to on a portable media players. Vodcast are seen as a step beyond podcasting t by many and not just an extension of Podcast.   Vodcasts are also called video podcasting or vlogging.

472. **Point-to-Multipoint** – Transmission between multiple locations using a bridge.

473. **Point-to-Point** – Transmission between two locations.

474. **POP** – The acronym for *Post Office Protocol.* The set of rules and standards that govern the retrieval of email messages from a mail server.

475. **Portal** – Synonym for entry screen. Website that acts as a doorway to the Internet or a portion of the Internet, targeted towards one particular subject.

476. **Positive Reinforcement** – Encouraging a behavior by rewarding that behavior after it is exhibited. An example is buying a child a toy after they do well on a test. An example in adult education is congratulating a learner after a question is answered correctly, or providing a completion diploma upon course completion.

477. **Post** – To place a message in a public message forum. Also, to place an HTML page on the World Wide Web.

478. **Power Users** – Advanced, sophisticated users of technology (usually a computer application or an operating system) who know more than just the basics needed to operate it.

479. **PPP** – The acronym for *Point-to-Point Protocol.* A data link protocol commonly used in establishing a direct connection between two networking nodes.

480. **Practice Item** – 1) A question or learning activity that serves as an informal validation and reinforcement of instruction. 2) A sample question that precedes a test, designed to ensure that the learner understands the mechanics of the testing system.

481. **Practices** – A set of methods or procedures to be followed, as in *best practices* or *standard practices.* In e-learning, the methods used to communicate the content to the learner.

482. **Prerequisite** – A basic requirement or step in a process that must be fulfilled before moving on to an advanced step. Being able to stand is a prerequisite to being able to walk. In computer training, using the mouse is a prerequisite to using a graphical user interface.

483.   **Prescriptive Learning** – 📖 A process in which only coursework that matches a learner's identified skill and knowledge gaps is offered to him or her, with the goal of making the learning experience more meaningful, efficient, and cost-effective.

484.   **Presence** – 💻 Functionality in certain applications, such as instant messaging programs, that allows users to know the state' of their contacts – whether they are online, if they are busy or not and possibly which form of communication they can be contacted by.

485.   **PRM** – 💻 *See* **Programmer Ready Materials**.

486.   **Processor** – 💻 The chip or chip set that performs the operations central to a computer's functioning.

487.   **Program** – 💻 A detailed set of instructions that make a computer able to perform some function. A program can be written by the user but the term is commonly used to refer to a specific pre-created software package, such as a word processor or spreadsheet.

488.   **Programmer Ready Materials** – 💻 The individual components that are ready for assembly by a programmer or multimedia developer. Typically, PRMs include scripts, graphics, audio and video files.

489.   **Projection System** – 💻 A device for showing video, television, or computer images on a large screen.

490.   **Protocol** – 💻 A formal set of standards, rules, or formats for exchanging data that assures uniformity between computers and applications.

491.   **Prototype** – 💻 A working model created to demonstrate crucial aspects of a program without creating a fully detailed program. Adding details and content incrementally to advancing stages of prototypes is one process for creating successful applications.

492.   **PS/2** – 💻 Personal System/2: a computer interface standard for keyboards and pointing devices such as mice.

493.   **Pull Technology** – 💻 In reference to the Internet or other online services, the technology whereby people use software such as a Web browser to locate and pull down information. See also push technology.

494.   **Push Technology** – 💻 A style of Internet-based communication where the request for a given transaction is initiated by the publisher or central server.   Push services are often based on information preferences expressed in advance, know as a publish/subscribe model wherein a client might subscribe to various information channels. Then, whenever new content is available on the channel, the server would push that information out to the user.

495.   **QoS (Quality of Service)** – 💻 Quality of service: network services that support prioritization of traffic to provide better throughput.

496.   **QR Codes** – 💻 *See* **Quick Response Code**.

497.   **Quality Assurance** – 📁 The totality of the arrangements by which an organization discharges its responsibility for the quality of the teaching it offers, satisfying itself that the mechanisms for quality control are effective and promote improvement.

498.   **Quick Response Code (QR Codes)** – 💻 Two-dimensional barcodes, also known as quick response codes, that, upon scanning with a smartphone camera, link digital content on the Internet to activate a number of phone functions, including email, instant messaging, and SMS, and connect the mobile device to a web browser.

499.   **RAM** – 💻 *See* **Random-Access Memory**.

500.   **Random-Access Memory (RAM)** – 💻 Temporary storage built into a computer system that functions as a workspace for data and program instructions.

501.   **Raster Graphic** – 💻 A computer image made up of a collection of dots. Can become ragged or otherwise distorted when the image is enlarged or shrunk.

502.   **RDF** – 💻 *See* **Resource Description Framework**.

503.   **Real-Time** – 💻 Instantaneous response to external events. A real-time simulation, like a driving simulator, follows the pace of events in reality.

504.   **Real-Time Communication** – 💻 Communication in which information is received at (or nearly at) the instant it's sent. Real-time communication is a characteristic of synchronous learning.

505.   **Real Simple Syndication (RSS)** – A term that refers to the family of web feed formats that distribute and share headlines and other information. RSS is an easy way to publish frequently updated material such as web logs, news headlines, or podcasts. The real simple syndication document, which is called a web feed, channel, or just a feed, contains a summary of the content of an associated website, or the entire text, depending on the length of the update. RSS is great for websites

that want more hits.   It allows visitors to keep up to date with what is going on at their favorite websites without having to visit.

506. **Receive Site** – 📖 A location that can receive transmissions from another site for distance learning.

507. **Reference Management Software** – 📖 Software for scholars and authors to use for recording and utilizing bibliographic citations (references). **Zotero** is an example of a free *Open-Source Reference Management Software.* Notable features include web browser integration, online syncing, generation of in-text citations, footnotes and bibliographies, as well as integration with the word processors.

508. **Reliability** – 💻 Within research and evaluation refers to the internal consistency of an instrument.

509. **Remote Instrumentation** – 💻 The capability to control scientific instruments, environmental systems, computers, etc., from remote locations. Devices for which a college, university, and/or other organization might arrange remote access include astronomical instruments, spectrometers, electronics equipment, and/or systems that perform systems/instrument in remote, inaccessible, and/or dangerous locations. Because of their expense and complexity, many specialized scientific instruments are out of the reach of many institutions, and for institutions that have such instrumentation, scheduling and other logistical issues can be a challenge.

510. **Repository** – 💻 A collection of digital information for sharing, evaluation, and preservation.

511. **Repurpose** – 📁 To reuse content by revising or restructuring it for a different purpose than it was originally intended or in a different way. To revise pre-existing training material for a different delivery format. For example, instructor guides and student manuals are often repurposed into web-based training.

512. **Request for Proposal (RFP)** – 📁 The official document produced by an organization that requests vendor bids for specific products and services.

513. **Research** – 📁 Investigation based on theory and existing literature; answers a question demonstrated from theory to be of general interest; answers a question demonstrated by analysis of what is known in existing literature to be an unanswered question.

514. **Resolution** – ⊗ The clarity of the image on the video display screen.

515. **Resource Description Framework (RDF)** – 💻 A dictionary and thesaurus for XML tags that sits between XML and an ontology.

516. **Response System/Clickers** – ⊗ Automated interactive response systems

517. **Reusable** – 📖 E-learning content that can be transferred to various infrastructures or delivery mechanisms, usually without changes.

518. **Reusable Learning Object (RLO)** – 📖 A specific chunk of content and code that represents an assessment, exercise, instructional content, etc. In theory, RLO's can be used in many different courses.

519. **RFID** – 💻 Radio frequency identification: a generic term that refers to wireless technologies that are used to provide information about a person or object. The term has been popularized with the emergence of RFID tags: inexpensive, miniature wireless chips with antennae that can be embedded into objects.

520. **RFP** – 📁 *See* **Request for Proposal.**

521. **RIO** – 💻 The acronym for *Reusable Information Object.* A collection of content, practice, and assessment items assembled around a single learning objective. RIOs are built from templates based on whether the goal is to communicate a concept, fact, process, principle, or procedure.

522. **RLO** – 📖 *See* **Reusable Learning Object**.

523. **Roadmapping** – 📁 A plan that matches short-term and long-term goals with specific technology solutions to help meet those goals.   The roadmap serves three key uses: (1) It establishes a consensus about needs and the technologies required to satisfy those needs, (2) it provides a mechanism to help forecast technology development, and (3) it provides a framework to plan and coordinate technology development.

524. **ROI** – 📁 The acronym for *Return On Investment.* A ratio of the benefit or profit received from a given investment to the cost of the investment itself. In e-learning, ROI is most often calculated by comparing the tangible results of training (for example, an increase in units produced or a decrease in error rate) to the cost of providing the training.

525. **Role Play** – A training technique in which learners act out characters in order to try out behaviors, practice interactions, communicate for a desired outcome, and/or solve a dynamic problem. Role plays can reinforce learning and help people apply new information, skills, and techniques. (verb) To participate in a role play.

526. **Router** - 💻 A network device connecting two or more networks, such as a local area network (LAN) with the internet.

527. **RSS** – 🖥 *See* **Real Simple Syndication**.

528. **Sakai** – 🖥 Open Source Learning Management System.

529. **Satellite TV** – ⊕ Video and audio signals relayed via a communication device that orbits around the earth.

530. **Scalability** – 🖥 The degree to which a computer application or component can be expanded in size, volume, or number of users served and continue to function properly.

531. **Scanner** – A device that converts a printed page or image into an digital representation that can be viewed and manipulated on a computer.

532. **Schema** – 🖥 A relatively simple textual description or representation of the internal structure of a database, including table names, element names, and relationships between elements. One of several new entities that define the structure and content parameters for XML documents.

533. **SCORM** – 📖   *See* **Sharable Content Object Reference Model.**

534. **Screen Reader** – 🖥 Computer software that speaks text on the screen. Often used by individuals who are visually impaired.

535. **Screenshot** – A picture of a computer display that shows the display at a given point in time. Also called a screen capture. Annotated screenshots are often used in software manuals and training programs.

536. **Script** – 🖥 In IT, a program or set of instructions not carried out by the computer processor but by another program. Code is interpreted at run time rather than being stored in executable format.

537. **Scripting Language** – 🖥 See **Script**.

538. **Scroll** – 🖥 To move text and images on a computer screen in a constant direction--down, up, right, or left.

539. **Secure Digital (SD)** – 🖥 SD is a non-volatile memory card format for use in portable devices, such as mobile phones, digital cameras, GPS navigation devices, and tablet computers. The Secure Digital standard is maintained by the SD Card Association (SDA).

540. **Seamless Technology** – 🖥 Technology that's easy to use, intuitive in nature, and isn't the focus of the learning experience. Also called transparent technology.

541. **Seaport** – 📖 Coastlines Learning Management Systems originally developed in 2005 and currently in its 3rd generation, e.g., Seaport^3 and now featuring SLO scoring and tracking, a shared repository, early alerts, customizable skins, etc.

542. **Search Engine** – 🖥 The two types of search engines, the catalog and the crawler, both locate requested information on a web site or on the whole of the World Wide Web. A catalog engine compares the user request with a collection of data that it contains concerning web sites. A crawler engine scours the contents of sites themselves to find a match to a word or string of words.

543. **Search Learning** – 📖 The process of learning by searching databases, references, etc. When you learn from perusing Amazon, looking up topics on Google, or paging through business magazines on the airplane, this is search learning.

544. **Seat-Time** – 📖 Traditional basis for documenting learning; face-to-face class time; associated with the Carnegie Unit, established in 1906 by the Carnegie Foundation for the Advancement of Teaching as an academic bookkeeping model.

545. **Section** – 📖 A division of training concerned with one topic. Several sections commonly make up a lesson, but the term is sometimes used interchangeably with the term lesson or module.

546. **Section 508** – 📁 The section of the 1998 Rehabilitation Act that states that all electronic and information technology procured, used, or developed by the federal government after June 25, 2001, must be accessible to people with disabilities. Affected technology includes hardware such as copiers, fax machines, telephones, and other electronic devices as well as application software and Websites. See www.section508.gov.

547. **Self Publishing** – 📁 The publication of any book or other media by the author of the work, without the involvement of an established third-party publisher. The author is responsible and in control of entire process including design, formats, price, distribution, marketing & PR. New cloud-based self-publishing organization/approaches are reducing the cost and time to produce and distribute textbook.   These include **Lulu**, **Flatworld**, etc.

548. **Self-Assessment** – 📖 An internal review by which an organization assesses its own processes and performance against given criteria. A process within a distance or technology-based course by which learners are assisted in checking their own progress towards achieving course objectives. The process by which the learner determines his or her personal level of knowledge and skills.

549. **Self-Directed Learning** – 📖 The ability to exercise learner autonomy. No one is autonomous at all times or able to be fully self-directed as a learner at all times, but the development of these capacities is the aim of many educational

philosophies. The teacher aims to transfer to the learner the skills associated with teaching, i.e., to decide what ought to be learned, the most effective means of learning it, and to know realistically and correctly when the learning has been achieved.

550.   **Self-Paced Instruction** – 📖 Training the enables learners to complete instructional segments on their own, without the guidance of an instructor, e.g., the learner determines the pace and timing of content delivery.

551.   **Semantic Web** – 💻 A concept proposed by World Wide Web inventor Tim Berners-Lee. States that the Web can be made more useful by using methods such as content tags to enable computers to understand what they're displaying and to communicate effectively with each other. That, says Berners-Lee, will increase users' ability to find the information they see.

552.   **Serial Bus** – 💻 A channel through which information flows, one bit at a time, between two or more devices in or connected to a computer. A bus typically has multiple points of access through which devices can attach to it.

553.   **Serial Port** – 💻 A connection point for peripheral devices to be attached to a computer, through which data transmission occurs one bit at a time.

554.   **Serious Games** – 📖 A game primarily developed for purposes other than entertainment or information, e.g., teaching and/or learning.   The term serious refers to the intent of the game, e.g., learning.

555.   **Serious Simulations** – 📖 As in *Serious Games*, *Serious Simulation* are designed with teaching and learning in mind, e.g., a serious outcome versus entertainment alone.   The main difference is that Serious Simulations fit the classic definition of a simulation versus a game, e.g., imitation of the operation of a real-world process or system over time versus structure play.

556.   **Server** – 💻 A networked computer that is shared by many other computers on the network. Intranets use servers to hold, or *host*, web pages. A computer with a special service function on a network, generally to receive and connect incoming information traffic.

557.   **Sharable Content Object Reference Model (SCORM)** – 📖 A set of specifications that, when applied to course content, produces small, reusable learning objects. A result of the Department of Defense's Advance Distributed Learning (ADL) initiative, SCORM-compliant courseware elements can be easily merged with other compliant elements to produce a highly modular repository of training materials. SCORM is a series of e-learning standards that specify ways to catalog, launch, and track course objects. It seeks to track and manage courseware developed by various authoring tools using a single system. The objective is to bring together diverse and disparate learning content and products to ensure reusability, accessibility, durability, and interoperability. Built on the work of AICC, IMS, the IEEE, and others, this is the one with staying power. See www.adlnet.org.

558.   **SharePoint Portal** – 💻 An intranet portal designed to centralize access to enterprise information and applications throughout the organization. Thereby, helping an organization manage its data, applications and information more easily.

559.   **Shelf-Life** – 📁 The length of time a learning activity, systems, and/or process has value, e.g., some knowledge is perishable and/or changes over time. As a result, it should be labeled with a pull or update time.

560.   **Single Sign On (SSO)** – 💻 An access control feature/property of multiple related, but independent software systems. With this feature a user logs in once and gains access to all related systems without being prompted to log in for each system. Conversely, Single Sign-Off is the property whereby a single action of signing out terminates access to multiple software systems

561.   **Simulation** – 📖 A mode of instruction that relies on a representation in realistic form of the relevant aspects of a device, process, or situation.   Highly interactive applications that allow the learner to model or role-play in a scenario. Simulations enable the learner to practice skills or behaviors in a risk-free environment.

562.   **Skill Gap Analysis** – 📖 Compares a person's skills to the skills required for the job to which they have been, or will be, assigned. A simple skill gap analysis consists of a list of skills required along with a rating of the employee's level for each skill. Ratings below a predetermined level identify a skill gap.

563.   **Skills Inventory** – 📖 A list of skills or competencies that an individual possesses, usually created by self-evaluation.

564.   **SLIP** – 💻 The acronym for *Serial Line Internet Protocol.* A means of allowing a user to connect to the Internet directly over a high-speed modem. Also see PPP. SLIP is older and used less frequently than PPP.

565.   **Slow Scan Converter –** 💻 A transmitter or receiver of still video over narrowband channels. In real time, camera subjects must remain still for highest resolution.

566.   **Smart Card** – 💻 A smart card is a credit-card-size device with an embedded microchip. There are two main types of card: contact and contactless (proximity). Contact smart cards, such as the new chip-and-PIN credit cards, need to be inserted or swiped through a reader. Contactless smart cards use short-range radio that allows them to be read when they come close

to a reader. These are often used for door entry systems, taking attendance in schools, cashless catering and a range of other services such as transport systems (London Underground Oyster Card, for example).

567. **Smart Devices** – 💻 A digital device that can operate to some extent autonomously and may exhibit some properties of ubiquitous computing including artificial intelligence.

568. **Smart Phone** – 💻 A mobile phone that includes PDA-like functionality. They tend to be more powerful than standard phones, with larger screens and expansion slots for memory cards. Applications can be installed on the phones.

569. **SME** – 📖 The acronym for *Subject Matter Expert.* An individual who is recognized as having proficient knowledge about and skills in a particular topic or subject area.

570. **Social Bookmarking** – 💻 A method for Internet users to organize, store, manage and search for bookmarks of resources online or a user-defined taxonomy system for bookmarks. These taxonomies are sometimes called a folksonomy and the bookmarks are referred to as tags. Unlike storing bookmarks in a folder on your computer, tagged pages are stored on the Web and can be accessed from any computer. Web sites dedicated to social bookmarking such as Flickr and del.icio.us, provide users a place to store, categorize, annotate and share favorite Web pages.

571. **Social Learning Networking** – 📖 A process whereby individuals observe the behavior of others and its consequences and modify their behavior accordingly.

572. **Social Networking Community** – 💻 A Web site that provides a virtual community for people to share activities with family and friends, or to share unique interests in a specialized topic, or increase their circle of acquaintances. Examples include: dating sites, friendship sites, learning sites, business sites, and hybrids that offer a combination. Facebook is the leading personal site and LinkedIn is the leading business site. Hundreds of millions of people belong to one or more social networking sites.

573. **Soft Skills** – 💻 The informal term for non-IT related business skills. Examples include leadership, listening, negotiation, conflict management, etc. Business skills such as communication and presentation, leadership and management, human resources, sales and marketing, professional development, project and time management, customer service, team building, administration, accounting and finance, purchasing, and personal development.

574. **SoftChalk -** 💻 A leading provider of content authoring software for educators in K-12, colleges, universities and medical programs. With SoftChalk, educators can create professional, engaging, learning content quickly and easily, which enhances their teaching and improves the learning experience for their students.

575. **Software** – 💻 A set of instructions that tell a computer what to do; a program. Programs that allow a user to complete tasks with computers, such as word processing and graphics programs. Compare to application.

576. **Source Code** – 💻 Program instructions written by a software developer and later translated into machine language that a computer can understand.

577. **Spam** – 💻 Junk email that is sent, unsolicited and in bulk, to advertise products or services or publicize a message.

578. **Specification** – 💻 A plan, instruction, or protocol for e-learning that's established or agreed upon. *Specification* is often used interchangeably with *standard*, but the two terms are not truly synonymous. Specifications become standards only after they've been approved by an accrediting agency.

579. **Speech Recognition (SR)** – 💻 The recognition and translation of spoken words into text, also known as automatic speech recognition (ASR), computer speech recognition, or speech to text (STT).

580. **SQL** – 💻 The acronym for *Standard Query Language*. Language for accessing information in a database and updating entries.

581. **SQUID** – 📖 The acronym for Seaport's test development and management engine, e.g., **S**eaport **QIUiz D**evelopment tool.

582. **Staff Development** – 📖 Various, usually formal, training or activities, funded by employers to enhance the attitudes, knowledge and skills of current employees.

583. **Stakeholder** – 📁 A person with a vested interest in the successful completion of a project. Stakeholders in e-learning often include the developer, the facilitator, the learners, the learners' managers, customers, and so forth.

584. **Standard** – 💻 An e-learning specification established as a model by a governing authority such as IEEE or ISO to ensure quality, consistency, and interoperability. A collection of frames created by a developer that detail the sequence of scenes that will be represented to the user; a visual script.

585. **STAR** – 📖 This fast-track program allows students to earn an Associate's degree in 3.5 semesters.

586. **STB** – 💻 Set-top box: the device that gives access to digital television services such as satellite television, IPTV or

Freeview. STBs are becoming more sophisticated, with built-in hard drives and network functionality.

587. **STEM** – 📖 The acronym for *Science, Technology, Engineering, and Mathematics* teaching and learning.

588. **Storyboard** – An outline of a multimedia project in which each page represents a screen to be designed and developed.

589. **Strategic Technology Plan** – 📁 A strategic technology plan serves as an extension to an organization's overall strategic plan, detailing the technical devices, applications, skills, and processes that empower an organization to achieve its goals.

590. **Streaming Media (Audio or Video)** – Audio or video files played as they are being downloaded over the Internet instead of users having to wait for the entire file to download first. Requires a media player program.

591. **Student Learning Outcomes (SLO)** – 📖 Student learning outcomes or SLOs are statements that specify what students will know, be able to do or be able to demonstrate when they have completed or participated in a program/activity/course/project. Outcomes are usually expressed as knowledge, skills, attitudes or values.

592. **Student Mentors** – 📖 A select group of technology-savvy students, engaged to assist with technology training, implementation, and or peer-to-peer support.

593. **Study Guide** – 📖 Printed material organized as a framework to support a course; traditionally delivered by print but also may be delivered by electronic media.

594. **Studying** – 📖 The self-directed practice of reviewing instructional material (usually as a follow-up to instruction) to improve retention and understanding. Aims to increase or improve skills or knowledge in the long-term, although some people argue that studying only places information in the short-term memory and mainly serves the goal of improving performance on tests.

595. **Style Sheets** – In traditional print publishing and on the Web, style sheets specify how a document should appear, standardizing such elements as fonts, page layout and line spacing, repeated content, and so forth. Web style sheets help ensure consistency across Webpages, but HTML coding can also override the sheets in designated sections of the pages. Also see CSS.

596. **Subject Matter Expert (SME)** – 📖 The member of a project team who is most knowledgeable about the content being instructed upon. Frequently, the SME is an expert contracted or assigned by an organization to consult on the training being created.

597. **Subordinate Objective** – 📖 A task or objective that must first be mastered in order to complete a terminal objective.

598. **Summative Evaluation** – 📖 An evaluation performed after development used to measure the efficacy and return-on-investment of a training program.

599. **Synchronous** – Live event or activity.

600. **Synchronous Learning** – 📖 A real-time, instructor-led online learning event in which all participants are logged on at the same time and communicate directly with each other. In this virtual classroom setting, the instructor maintains control of the class, with the ability to call on participants. In most platforms, students and teachers can use a whiteboard to see work in progress and share knowledge. Interaction may also occur via audio- or videoconferencing, Internet telephony, or two-way live broadcasts.

601. **Synchronous Training/Learning** – 📖 A training program in which the student and instructor participate at the same time. For example, an instructor-led chat session is a form of synchronous training. Common examples today include the use of products from Centra, Interwise, or others that enable web-casts of live events.

602. **Synergy** – 📁 The dynamic energetic atmosphere created in an online class when participants interact and productively communicate with each other.

603. **System Requirements** – 💻 The technological conditions required to run a software application. Includes the operating system, programming language, database, hardware configuration, bandwidth, processing power, and so forth.

604. **Systems Approach** – 💻 Application of industrial principles including recognition of the division of labor and of specializations where teams of specialists work together to provide quality education. Includes carefully planned integration of the full range of technology and human resources so that each operates to maximum efficiency and effectiveness. Necessary consideration for quality distance education.

605. **T-1** – 💻 The acronym for T-Carrier Tier One. A Type of broadband telecommunications connection used especially to connect Internet service providers to the Internet's infrastructure.   Developed by Bell Labs, the T-carrier systems offer entirely digital, full-duplex exchange of data over traditional wire, coaxial cable, optical fiber, microwave relay, or other communications media. The T1 lines carry about 1.5 megabits of data per second.

606. **Tacit Knowledge** – 📖 Knowledge which we acquire through our experience of acting in the world. Not book knowledge acquired through formal education. Can be contrasted with explicit knowledge.

607. **Target Population** – The audience defined in age, background, ability, and preferences, among other things, for which a given course of instruction is intended.

608. **Task Analysis (TA)** – A process of examining a given job to define the discrete steps (tasks) that insure effective and efficient performance of the job's requirements.

609. **TBL** – The acronym for *Technology-Based Learning*. Synonymous with TBT, or Technology-based Training.

610. **TBT**– The acronym for *Technology-Based Training***.** The delivery of content via Internet, LAN or WAN (intranet or extranet), satellite broadcast, audio- or videotape, interactive TV, or CD-ROM. TBT encompasses both CBT and WBT.

611. **TCO** – *See* **Total Cost of Ownership***.*

612. **TCP** – The acronym for *Transmission Control Protocol***.** A protocol that ensures that packets of data are shipped and received in the intended order.

613. **TCP/IP** – *See* **Transmission Control Protocol/Internet Protocol**.

614. **Teacher Tube** – A video sharing website similar to, and based on, YouTube. It is designed to allow those in the educational industry, particularly teachers, to share educational resources such as video, audio, documents, photos, groups and blogs.

615. **Teacher-Focused** – An approach to education in which the teacher is the holder of knowledge to be dispensed to students; can be contrasted with *learner-focused*.

616. **Teaching** – A process that aims to increase or improve knowledge, skills, attitudes, and/or behaviors in a person to accomplish a variety of goals. Teaching is often driven more toward the long-term personal growth of the learner and less toward business drivers such as job tasks that are often the focus of training. Some people characterize teaching as focused on theory and training as focused on practical application. See also Training and Learning.

617. **Technology** – The making, modification, usage, and knowledge of tools, machines, techniques, crafts, systems, methods of organization, in order to solve a problem, improve a preexisting solution to a problem, achieve a goal or perform a specific function. It can also refer to the collection of such tools, machinery, modifications, arrangements and procedures. Technologies significantly affect human's as well as other animal species' ability to control and adapt to their natural environments.

618. **Technology Mediated Learning (TML)** – A term, incorporating different approaches to using computers in learning and teaching, e.g., Computer-Aided/Assisted Learning (CAL), Computer-Mediated Communication (CMC), generic computer-based production and presentation tools, and computer-supported research tools. These tools are incorporated into Managed Learning Environments (MLEs) where learners can access resources, drills, other learners and tutors, research and assessment tools.

619. **Technology Roadmap** – A plan that matches short-term and long-term goals with technology-based solutions to achieve desired outcomes. It is also a plan that applies to the development and or acquisition of a new product, process, or emerging technology.

620. **Technology-based Training (TBT)** – The term encompassing all uses of a computer in support of learning, including but not limited to tutorials, simulations, collaborative learning environments, and performance support tools. Synonyms include CBL (computer-based learning), TBL (technology-based learning), CBE (computer-based education), CBT (computer-based training), e-learning, and any number of other variations.

621. **Telecommunication** – The science of information transport using wire, radio, optical, or electromagnetic channels to transmit and receive signals for voice or data communications.

622. **Telecommuting** – Working at home but connecting to one's office by way of a computer network.

623. **Teleconferencing** – Two-way electronic communication between two or more groups in separate locations via audio, video, and/or computer systems.

624. **Telepresence** – A set of technologies which allow a person to feel as if they were present, to give the appearance of being present at a place other than their true location.

625. **Telnet** – A utility that enables a user to log onto a computer or server and access its information remotely, for example, from home or a work location in the field.

626. **Template** – A predefined set of tools or forms that establish the structure and settings necessary to quickly create content.

627. **Terabyte (TB)** - A data storage capacity term meaning about 1,000 Gigabytes.

628. **Terminal Objective** – A learning objective the student should be able to master after completing a specific lesson or

part of a lesson.

629. **Test Engine** – 📖 Database driven client/server program to create and administer tests on a local area network or the Internet.

630. **Text** – ☻ The medium of delivering information via words to be read and interpreted by the learner. Compare to audio, video, graphic, and animation.

631. **Theory** – 📁 A doctrine, or scheme of things, which terminates in speculation or contemplation, without a view to practice; hypothesis; speculation. Way of understanding how the world works.   A summary of what is known, providing the basis for research into what is unknown.

632. **Theory-In-Use** – 📁 A theory that may be inferred from a person's actions.

633. **Thin client –** 💻 1) A network computer without hard- or diskette drives that accesses programs and data from a server instead of storing them locally.
2) Software that performs the majority of its operations on a server rather than the local computer, thus requiring less memory and fewer plug-ins.

634. **Thread** – 💻 A series of messages on a particular topic posted in a discussion forum.

635. **Total Cost of Ownership (TCO)** – 📁 A financial estimate to managers determine direct and indirect costs of a product or system. TCO, financial benefit analysis, provides a cost basis for determining the total economic value of an investment. Examples include: return on investment, internal rate of return, economic value added, return on information technology, and rapid economic justification.TCO is essential to quantify the financial impact of deploying learning and information technology products over their life cycle.

636. **Touch Screen** – 💻 An input device used to simplify user input and response. The user touches the screen to control the output, working with menus or multiple-choice decision points. Allows some simulation of hands-on training; for example, pointing to parts on a machine.

637. **Training** – 📖 To teach and form by practice; to educate; to exercise; to discipline.   A process that aims to improve knowledge, skills, attitudes, and/or behaviors in a person to accomplish a specific job task or goal. Training is often focused on business needs and driven by time-critical business skills and knowledge, and its goal is often to improve performance. See also Teaching and Learning.

638. **Training Management System (TMS)** – 📖 TMSs and LMSs have many similarities, e.g., track and manage courses and/or training information. TMS are different in that they track core competencies for positions, and required training for employees to develop, sustain, and/or improve core competencies. TMS may also track and measure employee development plans, mandatory training and/or certification, and most importantly measure and report gaps between desirable and current competencies, e.g., gap analysis.

639. **Transactional Distance** – 📖 Theory developed by Michael Moore which emphasizes that distance is a pedagogical/andragogical phenomenon which must be addressed by design, curriculum, forms of communication and interactions, and management of distance education programs.

640. **Transmission Control Protocol/Internet Protocol (TCP/IP)** – 💻 The set of rules and formats used when transmitting data between servers and clients over the Internet.

641. **Transparent Technology** – 💻 Technology that is easy to use, intuitive in nature, and not the focus of the learning experience. Also called seamless technology.

642. **Transponder** – 💻 Satellite transmitter and receiver that receives and amplifies a signal prior to retransmission to an earth station.

643. **Tutorial** – 📖 A mode of instruction that presents content, checks understanding or performance, and continues on to the next relevant selection of content. Tutorials may be linear or branched.   Step-by-step instructions presented through computer or Web-based technology, designed to teach a user how to complete a particular action.

644. **Unicasting** – 💻 Communication between a sender and a single receiver over a network. For example, an email message sent from one person to another.

645. **Uniform Resource Locator (URL)** – 💻 The standard address for a web page on the Internet or on an Intranet.

646. **Uplink** – 💻 The communication link from a transmitting earth station to a satellite.

647. **Upload** – 💻 To send a file from one computer or server to another.

648. **URI** – 💻 The acronym for *Uniform Resource Identifier.* Name and address of information – text, graphics, audio, video, etc., on the Internet. A URI usually identifies the application used to access the resource, the machine the resource is

located on, and the file name of the resource. A Webpage address or URL is the most commonly used type of URI.

649.   **URL** – 🖥 The acronym for *Uniform Resource Locator.* The address of a page on the World Wide Web. For example, see Uniform Resource Locator.

650.   **Usability** – 🗁 The measure of how effectively, efficiently, and easily a person can navigate an interface, find information on it, and achieve his or her goals. An evaluation and measurement of a computer program's overall ease-of-use.

651.   **User Experience (UX)** – 🖥 The way a person feels about using a product, system or service. User experience highlights the experiential, affective, meaningful and useful aspects of human-computer interaction and ownership. UX also includes a person's perceptions of the practical aspects such as utility, ease of use and efficiency of the system. User experience is subjective in nature, because it is about an individual's feelings and thoughts about the system. User experience is dynamic, because it changes over time as the circumstances change.

652.   **User Interface** – 🖥 The components of a computer system employed by a user to communicate with the computer. These include the equipment, such as a keyboard or mouse, and the software environment, such as the desktop of Windows or the program lines of DOS.

653.   **USTREAM** – 🖥 Network of diverse channels providing a platform for lifecasting and live video streaming.

654.   **Ultra Wideband (UWB)** – 🖥 An emerging, high data rate wireless technology. Intended to provide high-speed wireless connections over short distances, it is expected to be used for cable replacement applications and for multimedia networking in the home. However, the IEEE 802.15.3a standards process for UWB has now been halted as agreement between rival solutions could not be achieved. Devices using the two incompatible solutions are expected to come to market in 2006. The first implementations should be wireless versions of USB 2.0.

655.   **Validity** – 🗁 Within research and evaluation refers to extent to which what is measured is what is intended to be measured.

656.   **Value-Added Services** – 🗁 In the context of the e-learning industry, value-added services include custom training needs assessment and skill-gap analysis, curriculum design and development, pre- and post training mentoring and support, training effectiveness analysis, reporting and tracking tools, advisor services and implementation consulting, hosting and management of Internet- or intranet-based learning systems, integration of enterprise training delivery systems, and other services.

657.   **Vector Graphic** – ⊕ An image created based on mathematical formulas or primitives (objects) rather than by an array of dots (raster graphics). Vector images look cleaner when they're enlarged or shrunk because the mathematical formulas on which they're based redraw the images to scale.

658.   **Vertical Slice** – 📖 A program prototype that includes the development of one section, usually a complete lesson, for a course.

659.   **Video** – ⊕The medium of delivering information created from the recording of real events to be processed simultaneously by a learner's eyes and ears. Compare to audio, text, graphics, and animation.

660.   **Videoblogging (VLOG)** – 🖥 A blog where the medium is video. VLOGs often combine embedded video or a video link with supporting text, images, and other metadata. Entries may be recorded in one take or edited from multiple sessions.

661.   **Videoconferencing** – ⊕ Using video and audio signals to link participants at different and remote locations.

662.   **Virtual** – 🖥 Not concrete or physical. For instance, a completely virtual university does not have actual buildings but instead holds classes over the Internet.

663.   **Virtual Campus** – 📖 Online offerings of a college or university where courses are completed either partially or totally online.

664.   **Virtual Classroom** – 📖 The online learning space where students and instructors interact.

665.   **Virtual Community** – 🖥 See Online Community.

666.   **Virtual Desktop Infrastructure (VDI)** – 🖥 The practice of hosting a desktop operating system within a virtual machine (VM) running on a centralized server. VDI is a variation on the client/server computing model, referred to as server-based computing.

667.   **Virtual Lab** – 📖 An interactive environment (online laboratory) for creating and conducting simulated experiments.

668.   **Virtual Learners** – 📖 Students learning in an online environment.

669.   **Virtual Learning Environments (VLE)** – 📖 A learning environment or space that supports teaching and learning with computer-mediated communication and instruction, e.g. community, collaboration, Content Management System (C3MS) where inherent VE features (social space, social presence, awareness tools etc.) can be exploited.

670.   **Virtual Meetings –** 🖥 Meetings conducted in a virtual environment (online and/or using telephony), e.g., teleconferences, videoconferences, and webconferences.

671.   **Virtual Realty (VR) –** 🖥 Computer-simulated environments that can simulate physical presence in places in the real world, as well as in imaginary worlds.

672.   **Virtual World** – 🖥 A simulated online computer-based community/environment there users can interact with one another and use and create objects. The term is most commonly used with interactive 3D virtual environments, where the users take the form of avatars visible to others. Second Life is one widely used example.

673.   **Virtualization** – 🖥 The creation of a virtual (rather than actual) version of something, such as a hardware platform, operating system (OS), storage device, or network resources.

674.   **Virus** – 🖥 A destructive type of computer program that attempts to disrupt the normal operation of a computer, rewrite or delete information from storage devices, and in some cases, cause physical damage to the computer.

675.   **Virus detection program** – 🖥 A software program used to detect, diagnose, and destroy computer viruses.

676.   **Visual Recognition** – 🖥 Recognition of words, objects, and or sounds received form a sensor such as scanner or camera for decision making and/or conversion.

677.   **Vlog** – 🖥 A blog based on video content.

678.   **VoD** – 🖥 *See* **Video-on-Demand**.

679.   **Voice Over IP (VoIP)** – 🖥 Voice transmitted digitally using the Internet Protocol. Avoids fees charged by telephone companies.

680.   **VoiceThread** – 🖥 Web-based application that allows users to post and tag media with images, videos, documents, and presentations at the center of an asynchronous conversation.

681.   **VoIP** – 🖥 *See* **Voice Over IP.**

682.   **Vortal** – 🖥 Vertical portal; a portal that targets a niche audience.

683.   **VPN** – 🖥 The acronym for *Virtual Private Network*. A private network configured inside a public network. Offers the security of private networks with the economies of scale and built-in management capabilities of public networks.

684.   **W3C** – 🖥 *See* **World Wide Web Consortium**.

685.   **WAN** – 🖥 *See* **Wide-Area Network.**

686.   **WAP** – 🖥 *See* ***Wireless Application Protocol.***

687.   **WBT** – 📖 *See* **Web-Based Training (WBT).**

688.   **Web 1.0** – 🖥 The term used to describe the first few years of the World Wide Web. The core principle of web 1.0 was top-down regarding the use of the WWW and its interface.   Web 1.0 users were largely limited to viewing webpages; content creators were few with the vast majority of users simply acting as consumers of content. Web 1.0 webpage information was largely closed to external editing.

689.   **Web 2.0** – 🖥 The transformation of the Web from a static and one way to an interactive and collaborative environment conducive to information sharing, interoperability, and user-centered design. A Web 2.0 sites allow users to interact and collaborate with each other in a social media dialogue as creators of user-generated content in virtual communities. Web 2.0 tools include social networking sites, blogs, wikis, video sharing sites, hosted services, web applications, mashups, and folksonomies.

690.   **Web 3.0** – 🖥 There are many definitions and disagreements regarding the definition of Web 3.0.   Most agree and refer to it as the semantic web. Most agree it will be intrusive, persistent, and vast. Generally, the third phase will usher in an environment, based on the idea that the Internet understands the pieces of information it stores and is able to make automatic and predicative logical connections between them.   With Web 3.0 is about the Web becoming smarter, getting to know users better through their use and types of connections and automatically delivering content that is relevant to the users and those interested in users.

691.   **Web Conference** – 🖥 A meeting of participants from disparate geographic locations that's held in a virtual environment on the World Wide Web, with communication taking place via text, audio, video, or a combination of those methods. (verb) To participate in a Web conference.

692.   **Web-Based Learning** – 📖 See Web-based training.

693.   **Web-Based Training (WBT)** – 📖 Delivery of educational content via a Web browser over the public Internet, a private

intranet, or an extranet. Web-based training often provides links to other learning resources such as references, email, bulletin boards, and discussion groups. WBT also may include a facilitator who can provide course guidelines, manage discussion boards, deliver lectures, and so forth. When used with a facilitator, WBT offers some advantages of instructor-led training while also retaining the advantages of computer-based training.   Acronym for Web-based Training. Synonymous with e-learning.

694. **Webcast** – 🖥 *Web + broadcast,* A broadcast of video signals that's digitized and streamed on the World Wide Web, and which may also be made available for download. Also to digitize and stream a broadcast on the World Wide Web.

695. **WebForm** – 🖥 A web page that allows users to enter data that is sent to a server for processing.   Examples include applications, surveys, and/or other form-based or form-like data tools used to collect information.

696. **Webinar** – 🖥 A portmanteau combining *World Wide Web and Seminar.* Defined as a small synchronous online learning event in which a presenter and audience members communicate via text chat or audio about concepts often illustrated via online slides and/or an electronic whiteboard. Webinars are also often archived for asynchronous on-demand access.

697. **Weblog** – 🖥 *See* **Blog**.

698. **Webpage** – 🖥 A document on the World Wide Web that's viewed with a browser such as Internet Explorer or Netscape Navigator.

699. **Website** – 🖥 A set of files stored on the World Wide Web and viewed with a browser such as Internet Explorer or Netscape Navigator. A Website may consist of one or more Webpages.

700. **Whiteboard** – ⊗ An electronic version of a dry-erase board that enables learners in a virtual classroom to view what an instructor, presenter, or fellow learner writes or draws. Also called a smartboard or electronic whiteboard.

701. **Wide-Area Network (WAN)** – 🖥 A computer network that spans a relatively large area. Usually made up of two or more local area networks. The Internet is a WAN.

702. **WIDS** – 📖 *See* **Worldwide Instructional Design System**.

703. **Wi-Fi** – 🖥 A term that is used generically to refer to wireless networks based on the IEEE 802.11 standards. However, Wi-Fi actually refers to products certified as being standards compliant and interoperable with other Wi-Fi devices. This testing and certification is carried out by the Wi-Fi Alliance, a not-for-profit industry body.

704. **Wiki** – 🖥 A Web site developed collaboratively by a community of users, allowing any user to add and edit content. Wikis are powered by wiki software such as MediaWiki (free and OpenSource provided by Wikipedia).

705. **WiMAX** – 🖥 WiMAX is a high-speed wireless technology based on IEEE 802.16 standards. It is intended to provide wireless broadband coverage over a large area. As with Wi-Fi and 802.11, WiMAX is the industry body that tests and certifies products as being standards compliant and interoperable with other WiMAX devices. There are different standards for fixed/nomadic and fixed/mobile access. The first WiMAX implementations, based on 802.16-2004 (fixed), are expected to provide a wireless alternative to DSL and cable broadband internet access.

706. **Wireless Application Protocol (WAP)** – 🖥 The technical specifications required to communicate and display content on wireless devices, such as WAP-enabled cell phones. Relevant for m-learning.

707. **Wizard** – 🖥 A mini-application that prompts a user through the steps of a particular computer-based action. The user provides necessary information as he or she proceeds through the wizard's screens, while the wizard completes the actual steps behind the scenes.

708. **WLAN** – 🖥 Wireless local area network.

709. **Work-Based Learning** – 📖 An educational strategy that links academic instruction with the world of work. It is a powerful tool for motivating students and enhancing learning. It holds particular promise in the context of multiple pathways to improving success in college and the workplace.

710. **World Wide Web Consortium (W3C)** – 📂 An organization developing interoperable specifications, software, and tools for the WWW. See http://www.w3c.org.

711. **Worldwide Instructional Design System (WIDS)** – 📖 A comprehensive ISD approach and methodology supported by application and professional development tools, for designing and planning performance-based learning and teaching curriculum. See www.wids.org.

712. **WWW** – 🖥 The acronym for *World Wide Web*. A graphical hypertext-based Internet tool that provides access to Webpages created by individuals, businesses, and other organizations. See World Wide Web.

713. **WYSIWYG** – 🖥 The acronym for *What You See Is What You Get* interface. Pronounced wizzy wig, a WYSIWYG program allows designers to see text and graphics on screen exactly as they will appear when printed out or published online, rather

than in programming code.

714. **XML** – Extensible Markup Language. XML is a flexible, text based markup language for describing structured information.

715. **YouTube** – The most popular video sharing website founded in 2005 and acquired by Google in 2006. YouTube allows users at no cost to upload and watch a wide variety of user-generated video content, including movie clips, TV clips, and music videos, as well as amateur content such as video blogging and short original videos.   YouTube partners such as CBS, BBC, VECO, etc., also offer portions of their materials.   In addition, a special area, YouTubeEDU, has been developed to provide access to a wide range of teaching and learning materials.

716. **YouTube EDU** – YouTube's collections of high quality educational content from around the world designed to provide users a, global platform where anyone, anywhere can learn – or teach –anything they want.   YouTube EDU offer access to a broad set of educational videos that range from academic lectures to inspirational speeches and everything in between. YouTube EDU is divide into three areas (channels): (1) Primary and Secondary, (2) Higher Education, and (3) Lifelong Learning.

717. **Z Object Publishing Environment (ZOPE)** – A community project concerned with development and distribution of free and open-source, object-oriented web application server written in the Python programming language. Zope was the first system using the now common object publishing methodology for the Web.

718. **ZigBee** – ZigBee is a wireless sensor network technology specification based on the IEEE 802.15.4 standard. The ZigBee Alliance is a trade body that oversees testing and certification for ZigBee products. ZigBee is intended to be a low-cost, low-power, lowdata-rate wireless networking standard for sensor and control networks. The technology will primarily be used for industrial and home sensor networks and building control systems, such as security systems, smoke alarms, and heating and lighting controls. ZigBee-enabled products can create mesh networks, routing traffic via other ZigBee devices.

719. **Zope** – *See* **Z Object Publishing Environment**.