

**Center for Health Workforce Planning  
Bureau of Health Care Access  
Iowa Department of Public Health**

**Evidence-based E-Learning  
for Nurse Educators**

**2006**

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This manual was made possible by grant number 1 D1DHP06382-01-00 from the Bureau of Health Professions, Health Resources and Services Administration, U. S. Department of Health and Human Services.  
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## **PREFACE**

Many stakeholders in Iowa acknowledge the need to increase access to nursing education. At the same time, Iowa struggles with a faculty shortage in nursing. The combination of these two issues calls for creativity and forward thinking to meet the current and future health care needs of Iowans.

E-learning can offer the quality and flexibility needed to address the aforementioned concerns. When properly implemented and managed, E-learning can reach learners who would otherwise not be able to participate in nursing academia because of geographic and time constraints. This flexibility can also allow nurse educators to manage competing interests (family, practice and professional development) while continuing to teach.

E-learning will enrich the learning environment in a number of ways. First, the learner and instructor can have more interactions as they are no longer constrained to a set time and location. The learners can have increased feedback as other learners will have more opportunities to evaluate their work. Social barriers such as shyness can also be eliminated in E-learning and thereby improve the learning experience for all involved. Professionals in practice will have more availability to interact with learners in the E-learning environment. E-learning will also assist in developing desired characteristics in learners such as autonomy and collaboration.

Teaching with E-learning requires a skill set that is unfamiliar to many nursing faculty. Nurse educators tend to teach in the same style in which they were taught (traditional lecture format). To successfully adapt to the E-learning environment, faculty need training in methodologies that can empower them to fully capitalize on the benefits of E-learning. This manual seeks to provide nursing faculty with the basic instructional design tools and concepts required to successfully implement and manage E-learning.

The Center for Health Workforce Planning values and invites the input of health professionals in practice and education, and the public. Comments may be directed to Eileen Gloor at [egloor@idph.state.ia.us](mailto:egloor@idph.state.ia.us) or the consultant Tim Bristol at [tim@nursetim.com](mailto:tim@nursetim.com).

## E-LEARNING DEFINED

A definition for E-learning can be an elusive issue. There are many ways to address E-learning, not to mention other terms that serve as synonyms for E-learning. For the purposes of this discussion, E-learning will be considered any pedagogy (andragogy) that utilizes the Internet for communication (Billings, 2002). Other terms that may represent E-learning include Internet-based education, online learning, asynchronous learning networks, and online pedagogy.

E-learning may include a number of program structures. Hybrid courses, sometimes referred to as blended, can utilize both the face-to-face (f2f) and online learning environments. Hybrid E-learning may mean that the learners meet face-to-face for a few hours a week and complete the rest of the coursework online. They may meet for a week at the beginning of the semester and complete the rest of the semester online. E-learning may also include fully online courses. In these courses the instructor may never physically meet or even verbally talk with the learners. The instructor might also use online technology to conduct video or voice conferencing over the Web.

Another form of E-learning is independent study. In this venue the learner may only interact with the material being learned. Some may work with CD-ROMs or information on the Internet. They may only view PowerPoint® presentations, read a text book, and take an online test to demonstrate competency. Certain programs may include just one of the aforementioned formats, or use a combination. E-learning should not be confused with distance education. Distance education is a program format in which the learners and instructors are geographically separate. While E-learning can be used in this format, it can also be used in an onsite program. Some programs allow learners the flexibility of moving in and out of f2f, distance education and E-learning through out their academic career.

The communication tools used in E-learning can include asynchronous discussion, chat, e-mail, file sharing, online testing, and a multitude of other interactions and modalities. Asynchronous discussion (newsgroup, bulletin board) is the communication format that allows participants to communicate without being on the Internet simultaneously. This might include an instructor posting a question in the discussion board. Then, at a different time when it is convenient, the learners will go into the discussion board and post a reply to answer the instructor's question. Discussion boards eliminate time and geography barriers in education. Similarly, chat is the communication tool where participants use software on the Internet to communicate in real time. This means that they are on the Web simultaneously during the discussion.

File sharing is an online tool used for participants to post documents, presentations, etc. in one central location for others to view. Learners may use this tool to work on a project together or the instructor may use this to collect assignments. Online testing is a Web-based software tool that allows an assessment to occur from a distant location or computer. Online testing can happen over the Internet or in the same room using an internal Internet known as an intranet. Testing with this tool can include many formats such as a proctored environment, open book, timed, essay, multiple choice, etc.

## **THEORY FOR E-LEARNING**

Flexibility, autonomy, and collaboration are important characteristics that are promoted through the use of E-learning. Theory that supports the use of E-learning emphasizes these principles. The main theoretical bases upon which E-learning revolves are andragogy and constructivism. Andragogy is a term that refers to the teaching methodology that best facilitates learning in the adult. Constructivism refers to the belief that learning occurs as a result of the learner thinking about and interacting with the subject matter. The following discussion will demonstrate the integrated nature of these theoretical bases and their combined use in E-learning.

### **Andragogy**

Andragogy is a type of learning in which the educational process is appealing to adults (Knowles, Holton, & Swanson, 1998). The definition of adult can vary greatly. However, the way in which andragogy encourages learning is important for the development of the learner as a professional; hence, if the 19-year-old sophomore is not considered an adult learner, they will still benefit from andragogy because the principles being utilized will improve their ability to grow into the professional role.

The ideology of andragogy capitalizes on characteristics of adults that need to be considered in academia (Knowles et al., 1998). The first principle focuses on the adult's "need to know." Adults pursue education to attain certain life objectives and subsequently assess the potential for benefit from the learning interaction. Adult learners tend to be self-directed in their learning and desire situations in which they can control their own education. The adult learner brings certain life experiences to the classroom that should be acknowledged as a frame of reference. They also require relevance in the content being studied. The information needs to be relevant for the adult to fully appreciate the need for the learning. These characteristics result in motivation for the adult learner to continue in their academic pursuits.

E-learning that is properly developed and maintained meets the needs of the adult learner. The online environment can be constructed in such a way that the adult is encouraged to build upon their past experience. The flexibility of anytime anywhere learning allows the adult to develop a learning plan that fits their needs related to family, vocation, and other areas of life. The dynamic interactions with other learners can demonstrate relevance as they work together to create new found meaning.

One example of this might be the online pharmacology class. The nature of the E-learning environment may be such that all learners have to share an unpleasant experience they had with a health care provider. Each learner would be required to post their response to the asynchronous discussion board. Instructional design could be such that each learner is to critique other learners' posts. This allows the learners to see relevance in the study of pharmacology and allows learners' experiences to drive the learning interaction.

## Constructivism

Constructivism focuses on the concept of knowledge construction versus knowledge transmission (O'Neil, Fisher, & Newbold, 2004). Jonassen and Land (2000) would refer to knowledge construction as “meaning making.” The basic focus of constructivism is that the learner interacts with the content being learned. This allows the learner to develop meaning about the content being learned within an environment that is/represents reality. In essence, the learner may acquire an understanding of basic principles and concepts by examining them within their natural environment. Other principles in constructivism include the instructor being a facilitator/coach and the learner being involved in developing the learning environment.

One underlying benefit of constructivism is related to learning styles. Quality learning environments seek to meet the learning styles of all learners. However, in the Information Age, professionals must possess the capability to operate in a variety of learning styles. Constructivist learning is dynamic enough to allow the learner to experience success and comfort in operating within their own learning style. However, the collaborative nature of this environment is such that learners grow to appreciate the value of other learning styles as well. Consequently, constructivism can facilitate growth in less preferred learning styles, therefore increasing the professional flexibility of the learner.

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E-learning is ideal for instructional design that is constructivist in nature. First, the flexibility of the learning may allow the learner to remain in a natural environment during the learning interaction. As was mentioned above, the natural environment (real world experience) is important for constructivism. Flexibility would also allow the instructor to bring in actual practitioners to interact with the learners. Finally, the learner can construct their own plan for achieving the learning outcomes based on personal interests.

An example using E-learning to facilitate constructivism could include learners' interactions after a practicum or clinical in a hospital. The learners would be given a set of objectives and told to create a case study that requires mastery of those objectives for successful completion. They will be asked to utilize experiences from their time studying in the hospital setting. The E-learning tools could be successfully used to collaborate and share ideas necessary to create this case study.

Andragogy and constructivist learning theories offer the instructor many valuable principles that are essential in developing practitioners for the Information Age. Sound instructional design for E-learning will incorporate many of the concepts found in these two theories.

## BEST PRACTICES

Innovations in education through the use of E-learning are numerous and growing. By combining flexibility with sound educational principles, academia is able to meet the learners' needs and subsequently the needs of society's workforce.

### **Growing Your Own – University of South Dakota**

The Evangelical Lutheran Good Samaritan Society has joined forces with the University of South Dakota to offer a program entitled "Growing Your Own." This program has allowed 132 Good Samaritan employees in six states to pursue an Associate of Science degree in Nursing (ASN) part-time while continuing to work full-time. Completion of this degree fulfills the requirements for the state board examination for licensing as a registered nurse (RN). The employees receive instruction through the Internet and the Good Samaritan Distance Learning Network. This project, funded with a grant from the U.S. Department of Health and Human Services, focuses on critical nursing shortage areas in rural America.

In this program learners interact with instructors via E-learning, video conferencing, and f2f meetings. They complete clinicals in facilities near their hometowns. Psychomotor skills are taught and tested by personnel at the employing facility. Many of the learners are in areas that do not have nursing programs. Hence, many of the health care facilities that this program serves have shortages of RNs. By allowing these employees (dietary workers, nursing assistants, etc.) to attain their RN at the facility, the chances of the worker staying in the shortage area upon graduation are greatly improved.

### **Texas A&M and Del Mar Community College – Online Nursing Program**

Texas A&M Corpus Christi worked in collaboration with Del Mar Community College to create a completely online ADN and BSN program they have entitled *eLine* (<http://www.eline.delmar.edu/index.htm>). The development of this program was funded in part by the Robert Wood Johnson Foundation.

In *eLine*, registration and course starts are offered monthly. Some learners may complete the nursing part of the course work in 14 months and others may take up to 4 years. In this program, learners may work at their own pace through the use of modules. For instance, the nursing fundamentals course is composed of 24 modules. Four of these modules are used in more than one course, so the learner does not repeat those modules. The grade that the learners receive on those modules is applied to subsequent courses that require the same subject matter. Adjunct clinical faculty and preceptors are employed in health care facilities in the hometown of the learner.

### **Wisconsin Technical College System – Statewide Nursing Curriculum**

The Wisconsin Technical College System has developed a statewide nursing program. This seamless program allows learners to move freely between the 16 technical college nursing

programs. Over the course of the next few years, the 16 nursing programs will be pursuing accreditation as a single unit from the NLNAC.

One positive outcome of this program is the sharing of E-learning amongst the programs. All theory courses are now provided online. Learners have the choice of taking a theory-based course f2f at their home campus or they may take an online section through anyone of the 16 programs. Many of the programs are also offering hybrid courses where the learners only attend class for a portion of the assigned time. The rest of the class activities are conducted online. A direct benefit of this improved flexibility (online and hybrid) is the access to clinical space. Given the increasing difficulty of securing clinical sites for learners, these course formats are opening schedules for clinicals.

### **PrepareIowa**

Through a multistate collaborative, the Iowa Department of Public Health has developed an E-learning system free of charge to health care professionals ([www.prepareiowa.com](http://www.prepareiowa.com)). Partners include public health officials and schools from Illinois, Iowa, Nebraska, and South Dakota. The focus of PrepareIowa is to improve Public Health throughout the state.

Through the use of E-learning, PrepareIowa has developed high quality public health training that is available anytime anywhere. The courses are offered as independent study through the course management systems (CMS, also know as learning management systems) of different universities and agencies. Content experts from across the Midwest are providing training to health care professionals without the constraints of time or geography.

### **Indiana University – Online Communities of Professional Practice**

Online Communities of Professional Practice (OCPP) offer the opportunity for a diverse group of individuals to work together for the purpose of enriching education. One OCPP at Indiana University School of Nursing currently offers a critical care nursing course to patients, practicing nurses, and students. All participants come together online. The E-learning environment is flexible enough to accommodate the different schedules of these individuals. As a result a high quality, interactive learning environment has been created for all participants. Students earn college credit while professionals obtain continuing education units (CEUs). More information is available at

<http://nursing.iupui.edu/lifelonglearning/default.asp?/lifelonglearning/ProgramsAndConferences/FIPSE/AdultCritCare.htm>.

## **BENEFITS AND WEAKNESSES**

As with any technology, methodology, or innovation, there are benefits and weaknesses which must be addressed. Acknowledging benefits is important to motivate instructors to pursue E-learning's full potential. Acknowledging weaknesses of E-learning is important to help identify and minimize the potential effect of demoralizing setbacks.

### **Benefits - Flexibility**

Flexibility is a major benefit that is widely acknowledged when E-learning is discussed. This flexibility may enhance any learning environment when properly utilized.

When first considering whether or not the flexibility is truly a benefit one needs to consider the current and future learner. As for high school learners, the numbers utilizing E-learning is growing. Some report that upwards of 1 million high school learners were online in 2004 (Schworm, 2004). In Colorado alone, 4,237 K12 learners were in virtual schools. Learners coming from today's secondary educational systems are going to expect the flexibility that comes with the E-learning environment.

Adults are also looking to the flexibility of E-learning. In the Iowa Community College Online Consortium, one half of the 3,900 learners are over age 25. In February of 2004, the University of Phoenix reported 99,457 learners attending their online programs (A. Scott, personal communication, June 28, 2004). At Moraine Park Technical College in West Bend, Wisconsin, each online course is full with waiting lists. The learners often cite competing interests (children, work, etc.) as reasons for choosing this format. Indiana Wesleyan University's online RN completion program grew to 200 learners in 20 months. While these examples don't speak to exact reasons for these programs attracting adults, it is clear that the E-learning environment has something to offer adults.

Flexibility can also be considered a benefit for academia. Even with the nursing faculty shortage, the University of Phoenix has seen a large influx of retired nurses and faculty willing to teach via E-learning (J. Zerwekh, personal communication, January 3, 2004). Conley (2002) asserts that "Previously retired faculty members may be a substantial pool of qualified, productive talent intrinsically motivated to be part of an academic environment on a part-time basis" (p. 125). At the Community College of Denver, faculty recruitment for E-learning tends to attract graduate-prepared RNs with no prior teaching experience because of the flexibility of online teaching (D. Shantz, personal communication, May 27, 2004). A recent study of nursing faculty in Iowa revealed that faculty who used E-learning were more likely to take extra teaching assignments (Bristol, 2005).

### **Benefits - Outcomes**

Literature does reveal other potential benefits of E-learning. The first outcome-related benefit to consider is that faculty practice in the f2f environment can improve as a result of training in E-learning (Shea, Pelz, Fredericksen, & Pickett, 2001). This really is not surprising when one

considers the theory base mentioned above. As instructors seek to create a relevant learning interaction that requires learners to take responsibility, not only for their learning but also for creation of the learning environment, the quality of the education will improve. Instructors that receive effective training in E-learning will practice these skills and subsequently can implement them in the E-learning and f2f classroom. A note of consideration from an administrative vantage point; faculty development in E-learning may not only prepare faculty for the future, it may also improve the quality of current practice. Therefore, training in E-learning can be a financially beneficial choice when faculty development dollars are limited.

As for outcomes with learners, benefits do exist. The first benefit is related to a phenomenon called “No Significant Difference” (NSD). The NSD idea was originally coined by Thomas Russell in an attempt to understand the impact of distance education over the course of the 20<sup>th</sup> century (Russell, 2005). Over the course of the past decade researchers have been studying this same issue with E-learning and have basically reached the same conclusion. As academia considers the benefit of flexibility, it is important to consider that E-learning can offer similar outcomes to the f2f learning environment. However, given the sweeping nature of these assertions, one should remember that just as there are less than ideal f2f teaching practices, the same is true for E-learning. The other disclaimer to consider is that E-learning is simply a methodological tool. Therefore, the tool of E-learning can be used to enhance most any learning environment, to include f2f.

Certain professional qualities such as autonomy, collaboration, and critical thinking can also be considered benefits derived from the use of E-learning (Palloff & Pratt, 2003). As will be discussed in other sections, the E-learning environment is very interactive when the communication tools are properly utilized. However, because of the anytime/anywhere flexibility, learners can create their own learning plan as they discover how to manage autonomy. This teaches them to direct their own growth and may even facilitate the development of life long learning attitudes and habits.

At the same time autonomy is being developed, collaboration skills can also be practiced. The communication tools used in E-learning give the learners opportunities to not only reflect on their own learning but on the learning of others as well. They will learn how to professionally provide critique to peers. They can learn the art of “meaning making” in a group setting. The benefit of group work in academia is not a new concept. It serves as an invaluable tool in allowing learners the opportunity to not only learn from the instructor, but also from every other learner with whom they interact. The real benefit in E-learning is that the team members are not constrained to meeting in a certain location for a set amount of time. Each member has the flexibility to analyze the work of every other member with time to fully ‘digest’ what is being constructed.

When one practices concept analysis and subsequently synthesizing more complex concepts or theories, critical thinking is being developed. By capitalizing on the benefits of a highly interactive, anytime/anywhere learning environment, critical thinking skills can also be

developed and enhanced (Palloff & Pratt, 2003). The E-learning environment can truly help participants learn how to learn (Billings, 2002). As was mentioned in the discussion of collaboration, the learners not only receive feedback from the instructor, but also exchange feedback with peers. Therefore, learners can also grow through analyzing the development of critical thinking skills in others.

Another benefit of this environment is that professional socialization can occur online. Many in nursing education are concerned that if the learner never interacts with the instructor in person, there may not be the professional socialization that is considered crucial. Professional socialization is considered important because it is the mentoring activity that encourages development of autonomy, professionalism, and critical thinking attitudes in the learner. Studies reveal that professional socialization can occur with E-learning (Daroszewski, Kinser, & Lloyd, 2004; Nesler, Hanner, & Melburg, 2001). While it is not fully understood how this can occur when the learner and instructor are geographically separated, it may be proposed that the highly interactive nature of E-learning can explain this observation.

As was discussed above, the adult learning principles inherent to E-learning can be beneficial for two reasons. The first reason is that many adult learners are interested in E-learning. They desire to be self-directed and identify the relevance in the learning. Adult learners feel a need to connect the learning to real life. The second reason that these adult learning characteristics can be a benefit is because those who do not have adult learning attitudes will need them to be a quality professional in the Information Age. Therefore, the development of adult learner attributes may prove to be a beneficial side effect of the E-learning environment.

Considering the relationship of E-learning to learning styles is similar to its relationship to adult learning principles. Because E-learning is so flexible and diverse, it can be developed to facilitate all learning styles. This means that learners will at some point experience the satisfaction of learning via their preferred style. At the same time, the learner will also learn to develop in less desirable learning styles. Given the requirements of a professional in the Information Age, it is important that learners develop a certain level of comfort in all learning styles (Palloff & Pratt, 2003).

### **Weaknesses**

The first acknowledged issue with the E-learning is that it requires a significant amount of change to incorporate this new tool. While this may sound trite, the issue of conflict related to change (whether it be for the good or the bad), is an important concept to acknowledge. In nursing education a significant nursing shortage is present and growing. To require significant change without support can greatly decrease the job satisfaction of many faculty. At a time of shortage, dissatisfaction must be addressed.

Some of the main techniques that should be considered to combat this weakness include demonstrating to the adopters the usefulness of the technology and letting them experience the

technology first hand (Rogers, 1995). Many faculty teach the same way they were taught as a learner. Other faculty have a very successful academic practice. These faculty will need help in finding value in a methodology that requires so much of a shift in technique. As the aforementioned discussion has demonstrated, many of the benefits being discussed can be realized in a f2f classroom. Therefore, why make the difficult move to E-learning?

Allowing the faculty to experience the E-learning environment gives them a better feel for the way in which this tool will impact their practice. Many successful E-learning programs (Indiana Wesleyan University, State University of New York, and University of Phoenix) require online faculty to train in the very same environment in which they will be teaching. This proves to help these individuals to better understand this type of learning.

The final consideration in the issue of E-learning requiring change is that there will be some faculty who are not willing or able to make this change. While this may not be desirable to the academic institution, care should be made to help these faculty find their place in the program. The faculty shortage in nursing is having too much of an impact on the profession of nursing and subsequently on health care as a whole. Alliances can be formed with these faculty to capitalize on their talents and abilities.

Another weakness to consider is the time commitment needed to implement E-learning. Whether it be converting a single class or starting a program, the effective creation of the E-learning environment requires a significant time commitment. The greatest part of the time commitment is in learning effective utilization of E-learning. When a faculty member is not properly trained in this new technology they are very likely to fail. This failure not only leads to great ineffectiveness but significant learner attrition as well. For the faculty and institution to not properly invest in training is risky.

A second part of the time commitment relates to instructional design. The syllabus that worked in the f2f course will not work online. Learning activities will often need to be adapted; while clarity of communication needs to be developed at a different level. Addressing all of these issues takes time.

Considering this time issue brings many faculty and institutions to the reality that the time must come from somewhere. Will the faculty receive release time? Will the institution pay extra to develop the course? Will the faculty pursue training independently? Addressing these questions is often a point of contention that requires consideration.

Flexibility is the next weakness that must be considered. While much time was spent above on the benefit of flexibility there is a downside that must be considered. With faculty the issue of becoming over extended does arise. A recent study of Iowa nursing faculty, who teach with E-learning, revealed they were more likely to teach overload (extra work) (Bristol, 2005). Some administrators are concerned that faculty will take advantage of this flexibility to such a point that their quality of teaching will decrease. This concern is illustrated in that some schools only

let faculty teach three courses online at a time while restricting their teaching elsewhere when E-learning is involved.

For learners the flexibility is also of concern. Some schools require that learners acknowledge that online courses will be as rigorous if not more so than f2f classes. Other schools require learners to take part in orientation that alerts them to the rigors of E-learning. In other situations, the learner may take an online course because they want to continue with life (work, children, etc.) as usual. Unfortunately, they will often become part of the ‘attrition’ statistic as they may not succeed.

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Some techniques used to address learner issues involve course design. For instance, due dates in the course room often assist the learner in keeping on track and realizing that while they are not in a classroom they still have weekly goals to attain. Another way is to have teaching assistants in the E-learning environment that focus solely on engaging the learner. While these are not sure proof answers to addressing this weakness, they do help.

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Just as with faculty, there are some learners who are not suited for E-learning. Many programs require learners to take some training to help them determine compatibility. Other schools simply administer a questionnaire to the learner (<http://web.uncg.edu/dcl/icampus/online/default.asp>). While the discussion above does note that characteristics of the E-learning environment may be beneficial to the learner, there may be those who can not adapt. This assertion is supported in that some faculty believe that E-learning is not appropriate at certain levels of education such as associate’s or bachelor’s degree.

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The final weakness to be considered revolves around what is known as a power shift. When E-learning is properly developed, the learner will have more responsibility for learning and the instructor will be more of a “guide on the side” as opposed to a “sage on the stage.” Shifting the power structure in this way does bring with it some weaknesses. First of all, the nurse educator may struggle with relying on the learner to ‘acquire’ all the important knowledge. The nurse educator takes their charge to develop safe practitioners very seriously. As a result, it will be very hard to trust that the learner can ‘find’ all that they need, without the instructor supplying every component of the learning interaction. The nurse educator will need to weigh the risk of learning not being complete with the benefits listed in the learning theories above. For some educators, this risk may not be acceptable.

For the learner, this power shift may be considered a weakness as well. Research and anecdotal evidence shows that as active learning increases and learners are expected to accept more responsibility for their learning, the learners’ satisfaction with the learning environment may decrease (Lake, 2001). Even though outcomes may improve, the learner may not appreciate what is being gained and offer comments like “we paid tuition to hear from a professional, not other learners.” Acknowledging the power shift and subsequent benefits early in the program or course may alleviate some of this tension.

## STRATEGIC PLANNING

Creation of successful E-learning takes a well developed strategic plan. Whether the plan is to develop a hybrid or a fully online degree program, the properly developed plan can not only determine success but also prevent loss of financial and human resources. Please note that a thorough examination of strategic planning for E-learning is beyond the scope of this discussion. The following will be a basic introduction to certain key issues that faculty should consider. It should also be noted that the following strategic plan format is an example format that can be adjusted to fit the preferred strategic planning format of most academic institutions.

The basic components of a strategic plan for E-learning are goal development, plan development, resource analysis, plan implementation and continuous evaluation (Billings, 2002). Goal development for E-learning should include considerations of desired learning outcomes, organizational outcomes, and understanding of learner needs. The outcomes or goals of the learning/program would be similar to that which is seen in f2f education. This goal development may be driven by accrediting bodies and the profession being served (in this case nursing and health care). The fact that the educational process will include E-learning should in no way affect the development of the learning outcomes.

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The other part of goal development focuses on the organization and the learner. First of all, why is the organization considering the use of E-learning? What part of the organization's mission lead to the decision to use E-learning? At the same time, similar questions can be asked about the learner as the mission of most academic organizations is to help the learner develop personally and professionally. Is there a need that learners have expressed that E-learning could be used to address? Does the market call for a learning environment that is different than what is seen with f2f? While the answers to these questions can vary greatly, much of this revolves around creating a flexible learning environment that will offer more opportunities to more learners.

The next part of the strategic plan is plan development. Based on the goals, the planning team starts to research best practices and theory that will guide development and execution. The planning team will also need to consider the structure of the team. Personnel with instructional design for E-learning skills will add valuable insight. As the plan is developed, all stakeholders should realize that the plan will be dynamic phenomenon subject to change throughout the implementation process.

Components of the plan should include instructional design (ID). The ID will guide many of the other components of the plan. The ID is a theory based process that creates an effective learning environment. Will that environment include asynchronous discussion or synchronous discussion? Will there be f2f components of the program or course? Another component to be considered with ID is faculty development in E-learning methodology. Instructional design champions will be great allies and invaluable resources in faculty development. Other issues to consider will revolve around administrative concerns. Will learners be allowed to go between f2f and online

programs? How will registration and financial aid be managed? How will information/library resources be used? How will advising be managed?

Once these questions have been answered, planning should then turn to internal and external marketing. Many who have already been a part of this process will acknowledge that internal marketing can be much more challenging than external marketing. External marketing can often lead the institution to awareness that E-learning may be needed. However, the internal culture may be one that is securely rooted in a high quality attitude where the predominant perception that change is not needed. Therefore, the presentation of the plan needs to stay focused on institutional mission. This provides a common ground for the proponents of E-learning and those who may not be as accepting.

Throughout plan development resource analysis can be conducted. Human and physical resource considerations are important to understand the financial impact that E-learning implementation and usage will have (O'Neil et al., 2004). This may help the planning team to realize a need to change course or alter certain elements.

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Resources to consider are varied. First and foremost are the human resources. Does the institution need an instructional designer committed to E-learning? Will faculty and staff have time to seek adequate training to be successful in E-learning? This is a crucial question for nursing as many nursing faculty are already stressed for time. Will the E-learning increase the number of learners (as it often does)? If so, where will these faculty hours come from? Will there be adequate administrative and IT personnel to manage the new learners?

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The next set of resources to consider has to do with physical infrastructure and other technology. Given the ID that was incorporated into the plan, the institution may need to consider a number of technological routes, each with a different financial impact. Will the E-learning occur via hardware on campus or through a vendor at a distance site? Will the current technology infrastructure support the initial and future levels of desired/projected E-learning usage? Will the software used to conduct E-learning (online videos, testing, information sources, teleconferencing) be part of the institution's budget or be the responsibility of the learner? Will the school develop software in-house, purchase software, or subscribe to a renewable service? No two schools will have the exact same set of answers to these questions; therefore, strategic plans should be specific to each institution.

Given the relationship between plan development and resource analysis, the strategic planning team should have a clear understanding of both areas before implementation. The timeline for plan implementation can take many forms and be just as dynamic as the plan itself. Most organizations find it best to pilot the E-learning process with one class or one part of a class. This allows the team to evaluate the process and respond accordingly on a more manageable scale than if they were to begin several courses at one time. After one or two courses have been conducted and outcomes evaluated, the strategic planning team can revisit the plan and proceed with a high-volume roll out.

Throughout goal development, plan development, resource analysis, and plan implementation there should be continuous evaluation. Is the market changing (as manufacturing did over the past few years)? Are learners coming with personal technology issues that do not allow them to access certain learning objects? Do IT personnel fully understand the course management system and software? Are certain learning outcomes attainable in a virtual environment? The answers to these questions (and many others not listed here) should be quickly fed back into the strategic planning process.

## COURSE DEVELOPMENT

Course development can be similar to the strategic planning process. The instructional designer and faculty (a.k.a. content expert) need to develop goals for the learning. Learning outcomes should be structured based on the desired outcomes set by the program. The learning outcomes should not be driven by the use of E-learning. When one explores the course description and objectives for an online course, they should be exactly the same as those listed for the same course in the f2f environment.

Once the outcomes and goals for the course have been determined the instructional designer and faculty should consider their personal readiness to develop and teach the course. Many instructional designers, technology staff, and faculty struggle with the misconception that their prior training and experience in f2f learning prepares them for the task at hand. Unfortunately, this leads to wasted resources and often poor outcomes. Faculty development for E-learning needs to be considered an integral part of the course development. Whether this training is provided by the institution or sought on a personal level, the completion of the process relies on this foundation.

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Next, the plan for the course should be developed. This may also be called the instructional design (ID) of the course. Activities, learning objects, and interactions should be driven by ID theory that supports the attainment of certain outcomes. It is at this point that faculty need to remember that E-learning does not have to permeate all aspects of the course. Frequently, the best plans will be hybrid in format.

As the plan for the course develops and a syllabus or module is created, institutional curriculum considerations need to be acknowledged. Does the institution already have a template course design for E-learning that will guide the structure of the course being developed? Are there syllabi requirements that are important for the institution's accreditation process? While the new course being developed may be the first online course for this institution, taking these issues into consideration may save frustration for the instructional designer and faculty in the future. Addressing institutional concerns may also allow for alliances to be formed with those who are not as interested in E-learning by demonstrating that E-learning is an extension of the quality that already exists and not a threatening replacement.

Once goals and institutional considerations are established, an outline for the course should be developed. This will include resources for learners to investigate as a means of exploring the content. As was mentioned earlier, addressing a variety of learning styles is a real benefit of the E-learning environment. This should be considered when choosing resources for course content. It is not advisable to simply post lengthy lecture notes as a main source of content. One may wish to consider using sections of a textbook, the CD-ROM for the book, Web sites, library sources, slide presentations, etc. to help the learner synthesize an understanding of the learning at hand. If one chooses to post long segments of text, there should be options that allow the learners to attain or explore that information.

When educators first develop a course for E-learning, they will find that they are not asking themselves “What do I need to tell my learners about this topic?” Instructors are more likely to ask “What methodology will best facilitate the learners’ exploration of this topic?” This can lead the faculty and instructional designer to many fascinating and wonderful tools. The tools available depend largely on the technological capabilities of the institution and the CMS used by the institution. Tools that may be considered in course development will be discussed later.

### **Due Dates**

One common misconception about the E-learning environment is that the flexibility requires elimination of all due dates. This is simply not true. Flexibility is heralded as a major benefit by learners at Capella University, Indiana Wesleyan University, and University of Phoenix. However, each of these programs have weekly and term due dates built into almost every course that they offer. Learners might be required to login and discuss a topic 4 out of 7 days per week. They may be required to turn in different parts of a paper each week. Or they may be required to meet in an online discussion with their small group a certain number of times per week. The reason for this structure is to give the learner a sense of accountability and progress in the learning process. Another reason for due dates is the building of community between learners and faculty. Building community will be discussed later under Tools and Skills.

### **Timing and Schedule**

When considering course development, timing and schedules play a major part in instructional design. As was noted earlier, the overall structure of the institution needs to be taken into consideration. Will the course be offered over 5 weeks or 15 weeks? Will part of the “seat time” be spent in clinical or lab? Will there be a break that will affect the class offering? As the instructional designer and the faculty consider these issues and the impact on development, one other consideration should be acknowledged. What is the future of E-learning at this institution? Is there ever a chance that this 15 week course will be offered in a 3 or 5 week session? Is there the possibility that this course may be offered as an independent study. The answers to these questions need to be addressed.

One way to address many of the timing and scheduling issues is to develop modules for the learning content. Whether the module is based on a certain body system, developmental stage, or class of drugs, creating a categorical system can make the content more adjustable. For instance if all areas required for medical-surgical nursing in an undergraduate nursing program were modularize, the content could be delivered in different program formats; such as 3 modules per week in a 15 week format or 9 modules per week in the 5 week format. As with other course or program design issues, the program mission, goals and learning outcomes need to be considered to ensure that congruency is maintained.

**Class Size**

As with the f2f learning environment, class size is a consideration. The class of 15 learners will be managed much differently than a class of 80 learners. First of all, will asynchronous discussions be used? In the group of 15, there may only need to be one discussion at a time. If 80 learners are present, there may be need for 7 or 8 discussion areas. Will the discussions be graded for clarity, grammar, and content? Or will they be graded based on number of posts? Will there be teaching assistants available to help with grading? As for other assessments, will there be papers and exams that need to be graded? All of these issues will need to be considered regarding class size.

## FACULTY DEVELOPMENT

Faculty development is extremely important as any institution considers the use of E-learning. As was noted under *Weaknesses*, the amount of change and upfront time commitment can greatly discourage adoption of E-learning. Therefore, faculty need adequate training in the management and use of E-learning early in the process. Failure to do so could prove problematic through ineffective use of the technology investment and discouragement among all involved. As an administration considers the use of E-learning, plans for faculty development should be a priority.

There are two basic types of training that faculty need, methodology and technology. While it may seem counter-intuitive, instructional design methodology competency should be the primary concern. Most faculty are able to master the course authoring software (CMS) tools (a.k.a. the technology). The software is often very intuitive and easily managed with online help guides.

Conversely, methodology that produces an effective E-learning environment can be difficult for the novice and seasoned educator alike. For the novice educator, they may think that their skill in manipulating technology (medical equipment, online games, audio visual equipment, desktop publishing) gives them all the skill they need to manage an online course. The seasoned faculty may believe that since they can figure out how to transfer the syllabus and slide presentations to an online format they have mastered E-learning. These misconceptions are all too common and all too often lead to failure and discouragement for faculty and learners.

Palloff and Pratt (2001) strongly recommend the buddy system as a way of developing competency in teaching with E-learning. The best buddy system involves one skilled in E-learning methodology with one who is new to this pedagogy. Buddy systems are great in that everything from the small technical issues (logging in) to the larger issues (syllabus format) can be problem solved at an individual level. Buddies can pair up before/during/after formal training and can continue their relationship as both grow in their understanding of effective methodology for E-learning.

The next recommendation for effective training in methodology is the environment in which the training will occur. It is best if the faculty will be trained in the same E-learning environment in which they will be teaching. Schools such as Florida State University, Indiana Wesleyan University, and University of Phoenix do this to give the instructor a learner perspective. By training in the same environment in which they will be teaching, the faculty begins to understand all the benefits and pitfalls that await their future learners. One must remember that most faculty were trained and educated in traditional learning environments. Just as it is completely different to teach with E-learning, it is also completely different to learn.

The content to be covered in faculty development for E-learning methodology is found in this manual. The aforementioned theoretical base gives the faculty an understanding of why the

power shift is necessary in the E-learning environment. Training can offer an explanation of how andragogy and constructivism can make E-learning attractive to the learner and effective at the same time. Other content has to do with the construction of the E-learning environment.

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It is best to keep E-learning user-friendly and simple. When sound methodology is not observed/understood, over-zealous faculty may use too many high fidelity learning objects (the author speaks from experience :-). High fidelity technology can include videos, animations, and interactive digital games. While these certainly have their place and can enhance the learning environment to a certain degree, they do come with a certain amount of work and risk that may not be justified. The work comes in developing and maintaining this technology. Risk comes in hardware/software/bandwidth compatibility issues for all parties involved. Considering that most textbook vendors provide a multitude of high quality digitized learning objects, the faculty would do better to keep the E-learning environment simple, utilize these pre-made tools, if needed, and focus on interactions with and between learners.

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Technology competency, while not as important as methodology competency, is a necessary characteristic for E-learning faculty. It should be clarified that for E-learning, faculty are not required to know how to develop Web pages or even use instant messaging. However, what is required is important. Faculty should be versed in basic computer usage to include:

1. operation of a Windows® computing environment
2. capability of accessing the Internet through Internet Explorer® or Netscape®
3. use of a CD-ROM to load a program onto a computer
4. ability to print to a basic printer
5. use of basic desktop publishing software (WordPerfect®, Excel®, PowerPoint®, etc.)
6. ability to use e-mail (to include sending and receiving attachments)

E-learning faculty should also be fairly familiar with electronic data bases offered by their organization's library; as well as support services (help desk) for technology and the library. Many faculty feel as if they should be technology experts and hesitate to call when needed. This fallacy has caused many to waste valuable time (the author speaks from experience :-). The importance of the help desk and the importance of faculty making good use of these valuable services will be discussed later.

Competency related to other skills and tools will be discussed in more detail in the following sections.

## LEARNER NEEDS

Discussions about learner readiness have been ongoing since the first e-mail was exchanged. Who is responsible for the learner's technology competency? What if the learner has no Internet access? What if the learner does not check their e-mail but once a week? Does the learner have the attitude and understanding of the E-learning environment needed for success? What if the learner has a disability that prevents them from using E-learning? The answers to most of the questions rely on the 'plan ahead' principle. Make all expectations clear at the onset of the program or as soon as possible. Give the learner a very realistic idea of what the E-learning experience is like.

### Technology Competency

Technology requirements need to be explicitly stated at the beginning of each program and course. This includes the type of software, hardware, and Internet access required. Just as with faculty, it is now expected that learners are personally responsible for basic computer literacy (technology competency) to include:

1. operation of a Windows® computing environment
2. capability of accessing the Internet through Internet Explorer® or Netscape®
3. use of a CD-ROM to load a program onto a computer
4. ability to print to a basic printer
5. use of basic desktop publishing software (WordPerfect®, Excel®, PowerPoint®, etc.)
6. ability to use e-mail (to include sending and receiving attachments)

While most colleges and universities (traditional, online, accelerated, etc.) have these basic requirements of learners, many will offer some type of introductory learning activities in basic computer competency. These introductory offerings are important for two main reasons. The first and most important reason is learner success. Many times, simply mentioning the word "computer" can cause some to experience anxiety. These feelings need to be acknowledged and addressed to assist the learner in their academic pursuits.

The next reason these competencies need to be addressed is because the E-learning course is often challenging enough without making technology competency a part of the learning content. One learner without the basic aforementioned technology competency can completely disrupt the E-learning environment. They may produce and submit work incorrectly causing confusion for other learners and extensive repair work for the instructor. These learners may require additional instructor support that takes faculty focus off of the content at hand.

One way to address learner technology competency is through an online questionnaire or tutorial (<http://web.uncg.edu/dcl/icampus/online/default.asp>). These learning objects will allow the learner to practice needed skills and identify areas of weakness. Some programs provide the learner with a self-directed learning activity on a CD-ROM. The learner is informed that they may not begin course work until they have completed the tutorial.

Another important part of learner technical competency is the proper use of resources. Given that the learner has a great deal of interaction with the instructor, the inclination is that they contact faculty instead of technical support for troubleshooting. The other part of this problem is that many E-learning faculty enjoy discussing technology and like helping learners. Unfortunately, many instructors do not have the skills or the time to do this. Instructors should become proficient in directing learners towards proper resources as they trouble shoot issues related to technology management.

Non-computer technology competency may also be expected, to include the use of a fax machine or teleconferencing. Learners may need to make video and audio recordings to cassette tape for distribution to others. These expectations need to be addressed ahead of time.

### **New Attitude**

Just like faculty, learners at any level can misunderstand E-learning. When considering learner attitudes, two main areas need to be addressed. First, the learner needs to understand that E-learning is not the easy way out. A well developed E-learning environment will require the same amount of rigor as f2f. At some universities, learners are told that their transcript will not differentiate between courses taken online and those taken f2f. Therefore, they should expect the same level of difficulty. Many learners are surprised by the amount of autonomy required. Others may forget that they not only need to account for time studying, but also for time that would have been spent in a classroom. For instance if it is a three credit course over 15 weeks, they may be tempted to spend 6 to 9 hours week on the E-learning course. Many instructors consider this the basic amount of study time required and therefore the learner has missed the 3 hours a week spent in the classroom.

The other attitude that may cause the learner and faculty difficulty is the amount of active learning required with E-learning. Many learners come with a level of familiarity and comfort with passive learning environments. They may be the learner who states “Just tell me what I need to know for the exam.” When passive learning is combined with E-learning, learner attrition rates are extremely high. It is for this reason that active learning (constructivism) is the backbone of most well developed E-learning. Acknowledging this at the beginning of a course and/or program can help prepare the learners. Administrators may need to be aware of this issue as they may initially field more complaints and unsatisfactory faculty end-of-course evaluations. When learners are in a completely online program, this tends to be less of a problem as all their courses will most likely be similar. However, when learners move in and out of E-learning from f2f programs, this decreased satisfaction tends to be more of an issue.

### **Differently-Abled and Literacy Issues**

The flexibility of E-learning allows many with barriers to f2f learning access academia. It is for this reason that the course development must take access into consideration. As was mentioned above, the learner needs to know the requirements of the course/program ahead of time. At the same time as the course is developed, the instructor needs to keep these learners in mind. There

is software that can read text aloud from the screen, enlarge the images on the screen, sign audio and perform many other functions. Unfortunately, as with any software, there are always compatibility issues.

This brings the discussion back to the issue of simplicity (Palloff & Pratt, 2003). While many of the learning objects available are quite interesting and exciting for faculty and learners, the complexity that they bring to the learning environment can outweigh the educational benefit realized. For further discussion of issues related to improving accessibility of E-learning visit:

1. <http://www.w3.org/WAI/>
2. <http://www.section508.gov/index.cfm?FuseAction=Content&ID=3>
3. <http://www.access-board.gov/sec508/guide/1194.22.htm>

Another issue to consider relates to learners who have difficulty with reading and writing (Palloff & Pratt, 2003). While it is acknowledged that using E-learning can improve learners' writing ability and even assist "English as a Second Language" learners, they do need to come with a certain level of literacy. Many E-learning programs offer some tutorial services in reading and writing. These services can be offered in-person or online. Some online vendors ([www.smarthinking.com](http://www.smarthinking.com)) offer tutoring in everything from writing to economics. Even with assistance, there may be situations where the learner is removed from E-learning until literacy concerns can be adequately resolved.

## ASSESSMENT AND EVALUATION

Feedback is vital to the success of any E-learning environment. Many of the benefits and drawbacks of E-learning rest in the success of implementing effective feedback. This includes instructor to learner, learner to learner, and learner to instructor feedback.

### Instructor to Learner

Clarity is crucial in E-learning. When instructors give feedback in the f2f environment it is on many different levels (handouts, gestures, verbal comments). When that feedback (or instruction) occurs online, it is usually only in the text based format. It is for this reason that instructors are encouraged to use multiple messages to ensure that learners understand what is expected. For the first few times a course is taught online, the instructor should create a “frequently asked questions” list or a tips guide. As questions arise for clarification on assignments and expectations, the instructor will do well to note those comments and incorporate them into handouts or announcements for the next time the course is taught.

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At the University of Phoenix, the instructor is required to post a weekly “office hours” discussion. This is a place where learners can ask questions. At the end of that post are reminders for the learner as to what is due that week and commonly misunderstood components of that assignment. Even though the assignment may be clearly outlined in the syllabus, the rubric, and mentioned on the course calendar, this additional reminder is very valuable in E-learning.

As will be discussed later, the grading rubric is crucial. A rubric simply outlines what is expected in an assignment. It needs to clearly outline what is meant by a paragraph. How many references from the Internet will be allowed? Can the text book be quoted? While each instructor/course/program will have their own specifications, clarity should be a given.

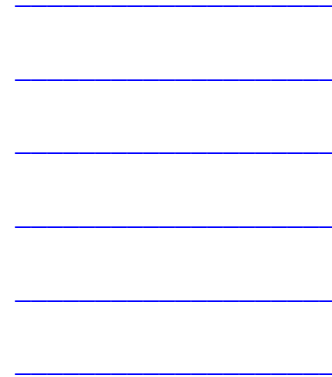
Another tool that allows proper communication of feedback is the scoring guide. These tools may be a list of the different components of an assignment with point values next to them. They may have additional directions on completion of the assignment. They offer the instructor and the learner common ground on which to develop the assignment and discuss the final product. If a scoring guide is separate from the instructions on completing the assignment, it is crucial to ensure that they are congruent.

Feedback on papers, essays, and reports in E-learning can easily be managed with the tools in most word processing programs. The most basic way to provide feedback is to place the cursor where comments are needed and change the color of the font to RED and style to BOLD. Then type in the needed comments. This works quite well and allows the instructor to easily communicate the feedback to the learner. A more complex method is known as TRACK CHANGES. This particular tool is found under the TOOLS menu in Microsoft Word®. When this feature is “on,” the learner will see a very detailed account of the changes that were made. If a letter was deleted a bubble pops up on the side that shows the deletion. If a word is inserted, its

color is changed and underlined. This feature will give a different color to each individual incorporating changes into the document. This feature also exists in Microsoft Excel®. One note is that if TRACK CHANGES is going to be used, the learner and the instructor will need the same software program and versions that are relatively close.

Feedback in the asynchronous discussion (AD) may also be needed. As with other types of feedback clarity is vital. To ensure clarity, if an instructor is offering comments on a learner's post to the AD, the section of the post that is being commented on should be copied and pasted into the instructor's comments. For example:

Hi John, you stated "Nurse educators are usually too busy to practice." I would have to say that this statement is multifaceted. While many schools require some type of faculty practice, it can be done as part of the teaching load. For instance, if I take a clinical group to the med-surg floor at the hospital, that may be considered practice. Thanks for the comments, NurseTim



Instructors should also be careful to never embarrass a learner in the public AD setting. This may occur accidentally at times and the instructor should be quick to apologize publicly and admit fault. If a correction is related to attitude, content or process it is best for the instructor to contact a learner in a private fashion. This may include an email, phone call, or private group area AD or live chat. If the AD post from the learner is still in the discussion board, an agreement should be reached about whether or not the post needs to be removed or revised. This is situation dependent. Posts offensive or injurious to others require negotiations related to apologies and possible removal from the course. This may also require intervention from the administration. As with other parts of the E-learning environment, the best way to handle these situations is prevention. Reinforcement and training in professional communication and Netiquette needs to occur before learning begins.

As for other feedback situations in the AD, if it is constructed well the learners will often answer questions for their peers before the instructor can. Otherwise, much of the feedback can come from the instructor in the form of a question. "Can you clarify what you meant by ...?" "If what you have said is true, then how do we rationalize the comments by the author?" "Could you give an example from practice that would help me to better understand your comments?" A classic resource for using discussion in education (f2f or E-learning) is *Discussion as a Way of Teaching: Tools and Techniques for Democratic Classrooms* by Brookfield and Preskill (1999).

Feedback on projects such as video, audio, spreadsheets, and slide presentations need to also be considered. If there is a scoring guide that can be used, that may be the best way to offer feedback. Many software programs (mind mapping, Web authoring tools) have online group work options that allow learners and instructors to come together for the purposes of collaboration and feedback.

Finally, the instructor needs to be very clear on when feedback will be offered. The isolation that can come with E-learning can create anxiety for learners. Many programs offer guidelines for instructors to follow. Instructors must be online in the AD 4 or 5 days per week. They must reply to learner questions in the discussion or via e-mail within 48 hours. All assignments or weekly grades should be posted within 7 days of the due date. Whether these ideas are used or other guidelines are set, it is vital that the learner be aware of them.

### **Learner to Learner**

As was mentioned earlier, peer feedback is crucial in the E-learning and the Information Age. Most AD grading rubrics require the learners to professionally critique each other's posts (see Appendix A). For instance, if the answer to a case study is to be posted, each learner may also be required to provide substantial feedback to at least two peers. This activity not only exposes them to other's work (and subsequently another's point of view on the content being learned), but it also allows them practice in providing constructive feedback.

When developing a grading rubric for this type of feedback, clarity is vital (see Appendix A). Learners should clearly know how much feedback to offer. Professionalism is a must and it is important to substantiate their feedback. Many of the techniques and issues listed under *Instructor to Learner* may be taught and discussed as the learners offer each other feedback. One particularly useful feedback tool for learners is the 2+2 model (Allen & Allen, 1996).

This simple yet effective model requires the learner to offer two strengths of their peer's work and two areas that may need improvement or clarification. Practice within this model is useful for learners.

Learners may also be required to offer each other feedback on projects and papers other than the AD. Learners may be required to submit their paper to two peers for preliminary grading. At the same time the learner is required to grade the papers of two other peers. Each learner is expected to provide feedback as if they were the instructor. They put comments in the body of the paper and then they offer comments on the scoring guide with a final grade. The final grade offered by peers may or may not be taken into consideration when the instructor grades the paper. Personal experience has revealed that if the peer can affect the other learner's grade with their feedback, the feedback is artificially positive. However, when the quality of feedback being offered affects the grade of the one offering the feedback, the quality improves substantially. Learners have acknowledged that this is a tough assignment. Feeling inadequate to provide this type of feedback, some believe that it is the instructor's job to do this sort of activity. However, they acknowledge learning more about the topic at hand, collaboration, and professional writing.

### **Learner to Instructor**

Constructivism and andragogy both direct the instructor to include the learner in developing the learning environment. Therefore, mechanisms must be in place to allow the learner to offer feedback to the educator. In E-learning, the isolation factor must be considered when the course is developed. Many instructors encourage learners to contact them by phone or email if an issue

arises. However, the instructor must be clear on availability. If the learner knows when to expect a reply about their concern, they are less likely to experience frustration during the waiting.

Many course management systems offer assessment tools that can be done anonymously. This tool looks similar to the online testing tool, but the learners' comments can not be linked to them specifically. In the discussion board, some posts can be made anonymously. This allows them to share a comment more freely without fear of their name being connected with the critique.

Comments from learners should be carefully considered. It is best if the instructor has a "buddy" outside the course room to share the comments with before action is taken. However, it is best to acknowledge most comments to give the learner ownership in the learning environment.

## TOOLS AND SKILLS

Allowing a motivated faculty member to go into E-learning without guidance or training is like sending someone who loves electronics and computers into Best Buy® with a \$1 million gift card. Too many options mixed with untrained excitement are a recipe for disaster. The tools used in E-learning are vast and numerous. Knowing which ones to use and how to apply them can be a daunting task.

### Course Management Systems

Most faculty think of a CMS when they think of E-learning. These include such popular online software as Angel®, BlackBoard®, eCollege®, Lotus Learning Space®, WebCT®, and many others. The CMS is a package of tools that are designed to improve the quality and efficiency of learning interactions. CMSs are not strictly used for online programs. Many f2f programs require that all courses use the CMS for such functionality as e-mail and the grade book. While they are few and dwindling, some programs still have instructors developing their own Web sites with Web authoring software such as Front Page® and Dream Weaver®. Other schools use free software (Outlook Express®) or develop their own CMS.

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The CMS includes such functionality as a grade book, discussion board, chat room, e-mail, assignment submission tool, document delivery tool, Web links, calendar, and activity tracking. Certain CMSs have other features that allow textbook vendors to provide material that can be automatically integrated/uploaded into the course (i.e. videos, learning games, book chapter outlines, glossaries, etc.). Some vendors will provide a CMS free of charge with a textbook or media adoption.

For CMS access, learners and faculty are each given individual login usernames and passwords. The learners can only access areas of the CMS that are made available to them by the faculty. The faculty can develop group areas that limit access to a certain group of learners. The faculty can also identify when learners have entered the CMS and what tools were used. Learners and faculty can be automatically enrolled in the CMS from the institution's registration system or manually entered on a per course basis.

The CMS can be purchased through a number of different arrangements. Some institutions purchase a site license, have the CMS loaded on their own hardware, and supply all the technical support themselves. Others subscribe to a CMS that is located on a server at another location. Some schools can combine forces and purchase the CMS at a group rate. Others subscribe on a per learner or per course basis.

### Help Desk

The help desk is a tool that is vital in E-learning. It is important for the instructor to understand what support is available and then ensure that learners are aware of these resources. This "help desk" literacy should include help with technology (personal computer and Internet), CMS, and

library services. Sometimes the same help desk will handle all of these areas. Sometimes the help desk will be separate for each tool or area. The help desk can come in the form of a telephone call or visit with a live person; it may be e-mail or chat on the Internet; and it may include using a digital or print manual. Unfortunately, there may be situations where the help desk is not available for certain areas. In such situations, the instructor would do well to develop a FAQ of questions that learners bring. These questions can then be answered and offered to learners in future classes. Instructors may also wish to contact vendors about possible free resources that could be offered to users.

As was mentioned above, it is vital for learners to develop the skill of utilizing these services. While an educator may be tempted to help, care should be taken to not inhibit the learner's understanding of the help desk feature. One should remember that professionals need to be able to manage technology. The instructor should also be aware that helping in these areas can be surprisingly time consuming; subsequently, the instructor's focus may be diverted from the primary mission of teaching about the objectives of the course.

### **Administrative Tools**

The administrative tools that may be used include grade book, activity tracking, assignment submission tools, and file delivery tools. The online grade book is a useful tool in providing the learner with up-to-date grades and feedback. The days of waiting until class next week to find out about a score on a paper or exam are over. The grade book is individualized in such a way that the learner logged in may only see their grade book entries. Some grade books are connected to the submit assignment tool. When the learner submits a paper, the grade book is marked with a symbol (i.e. "!" ) that alerts faculty to a waiting assignment. The faculty can access the assignment, download it, provide feedback, upload the graded document, and input a numeric or letter grade. The grade book can be programmed to calculate grades based on individual assignment and exam grades. In some CMSs, the grade book final grade can be linked to the institutions administrative software for automatic grade submission.

The next tool that is quite common in the CMS is activity tracking. This tool can display the number of times any CMS user has accessed any given part of the CMS. Activity tracking in some systems can also generate reports that show how often a certain area is accessed or how long a person was logged into a course. Some institutions offer a disclaimer to learners that this feature is used at the instructor's discretion and others do not mention this at all.

Assignment submission tools are just that. They are a part of the CMS that allows the learner and faculty to see the same electronic file (word processor, spreadsheet, slide presentation, etc.). The learner would upload a completed file and then the faculty would download the file. The item could be evaluated and then re-inserted in the CMS for the learner to download and read the comments or see corrections. These tools may be referred to as submit assignment or drop box depending on the CMS.

File delivery tools allow the instructor, and sometimes learners to distribute files to the entire class or select individuals. This is useful for disseminating syllabi, handbooks, slide presentations, video files, images, Web links, etc. In a group area, the learners of the group may circulate a document or presentation that requires input from all members before submission for grading. In some CMSs the faculty can store files without sharing them with the class and therefore have access to the files from the Internet.

While this is not a comprehensive list of CMS-based administrative tools, it has offered a basic overview of the most commonly used. As was mentioned before, each CMS can offer a wide array of different tools that may be specific to that particular vendor. Now the discussion will turn to other tools that can be a part of or separated from the CMS.

### **Asynchronous Discussion**

One of the most important tools in E-learning is the asynchronous discussion (AD, also known as the discussion board, bulletin board, or news group). Most of the benefits related to outcomes, communication, and socialization are related to the AD. The AD is asynchronous because the participants of the discussion are not required to be online at the same time.

The value of a discussion in this format is multifaceted. First of all, learners are able to digest the newly discovered learning and formulate a response to it that contributes to the discussion. In a f2f discussion, many learners often think of great comments after the discussion has ended. Or they offer a comment that was not well thought out or planned.

The next benefit has to do with collaborative learning. Collaboration with peers is vital to any professional in the Information Age. Learning to find the value in the thoughts of others can really improve one's professional capabilities. Learning to offer valuable critique to peers is equally important. The AD allows learners to "make meaning" together. As was discussed earlier, this is a vital component in constructivist learning.

Another noted benefit of AD, is that learners come to appreciate the power of written communication. Acknowledging this in the Information Age is vital for any professional. Other benefits noted include improved writing ability and even improvements in critical thinking. The final benefit frequently touted is that all members of the learning team can be on an equal playing field. While there can be overpowering personalities in the AD, many who would never participate in the f2f discussion are able to in the absence of social inhibitions. Some of the social inhibitions include physical appearance and gender. As one virtual high school executive noted, no one online has acne (Schworm, 2004). When using the AD in a hybrid course (some online, some f2f), it is striking the quality of online contributions that come from the learner who will not even say "hello" in the classroom.

As with any tool, the benefits come with some issues; the main issue being that learners need the skills to effectively utilize the AD. Training can come from the pre-program orientation, role modeling by the instructor, reminders in the course handouts, guidance from the rubrics, and

tutorials. Learners need to be reminded that even though the discussion may be an informal environment, professionalism is still expected.

The most important way to avoid pitfalls is to help learners see value in the AD. While most learners enjoy the AD, best practices reveal that value is often connected to the learner's grade. While some would argue that discussion which is graded is artificial and not deep enough, this author believes that the AD which is not graded is not valued by the learners as a whole. While there will be those who do participate, experience reveals that a majority will not, and this greatly diminishes the power of the AD for all involved.

Instructor participation in the AD is another issue to consider. In the traditional f2f classroom, the instructor may be used to being the main source of learning and information. This changes in E-learning where learners may use many other sources (to include each other) for their learning. Some refer to this as a "power shift" others refer to this as a transition from "sage on the stage" to "guide on the side." It is for this reason that instructors should be careful about offering too much input in the AD. One comment by the instructor with the "right answer" could shut down the discussion. Learners may think that the correct answer has been given and no further discussion is needed.

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To prevent premature termination of discussion activity, instructors may wish to ask questions. These questions can be asked to stimulate further discussion ("Tell us more about..."), encourage creativity ("If you were the nurse manager, how would you ...?"), or seek clarification ("Please give an example from practice that would demonstrate the connection between ..."). The instructor may also wish to offer comments that will redirect or refocus the conversation. The main goal for the instructor in the AD is to facilitate the progression of the conversation and subsequently critical thinking.

Grading the AD requires significant clarity and consistency (see Appendix A). Some programs require that the graded discussion be done the same in all courses. Some programs leave it up to each individual instructor. Regardless of the format, the learner needs to be completely clear regarding expectations (see Appendix A). Another concept to be considered is grace in the beginning of the course or program. When this author grades the AD, during the first 1/3 of the course, grading is very easy and usually includes many reminders with very few points lost. In the last 1/2 of the course, the message is clear that if the discussion rubric is not followed closely, significant points are lost. This emphasizes to the learners the importance of full participation by all. In essence, every voice counts in the AD.

As the instructor develops the course, consideration needs to be given as to how discussion will be graded. There are two basic methods for grading the AD; qualitative and quantitative. Qualitative grading involves analysis of each post for certain key elements. Is the correct answer given? Are grammar and spelling correct? Do learners offer substantial critique or just a shallow affirmation? The quantitative grading approach requires the instructor to count the number of posts and look for signals as to whether or not key elements are being addressed. One signal may

include watching peer replies for indications that another learner is having difficulty. The instructor may also randomly scan posts for an idea of whether or not the discussion is flowing as planned.

While it would be ideal to always do qualitative discussion grading, it may not always be appropriate or practical. If an instructor had 3 groups of 6 learners, each discussing a topic in class, it would be very difficult for the instructor to qualitatively grade all 18 learners in a one or two hour discussion. What most instructors do is more of a quantitative grading method. If there is an area that is crucial (i.e. the correct answer to a case study), instructors might focus qualitatively on that part (they do not read every line of every post). However, in most well designed ADs, the learners will offer enough critiques to peers that they will usually find their own short comings as a result of the feedback offered. It is important for the instructor to remember that learners can and do offer quality feedback to one another with proper guidance (see Appendix A). It is equally important to remember that learners who provide feedback will learn in the process.

The decision to grade qualitatively or quantitatively should be made before the rubric is developed and the class begins as this may determine some of the wording used. Important components of the rubric for grading the AD include but are not limited to:

1. size of the post (number of words is best for clarity)
2. number of posts (minimum or maximum)
3. who to offer a reply/post
4. quality of the post (do not just say “I agree” “Nice work” or “Me too”)
5. grammar, spelling, style (MLA/APA), Netiquette
6. content of the post (correct answers, professional references, critique)
7. date and time each post is due (does Tuesday mean 4:00PM or midnight)
8. which discussion area is the post to be submitted

Once the initial rubric has been developed, it is important for the instructor to offer frequent reminders of its content throughout the course. If a weekly discussion question is posted by the instructor, it would be beneficial to offer a reminder of when the main reply is due from the learner. If the CMS has an announcement feature, an announcement could remind the learners that a resource from the CINAHL® or ProQuest® database in the library is due as part of the discussion post. Multiple reminders will empower the learners to focus on the learning and find success online. See sample discussion assignments in Appendix B.

### **Communication Tools**

Other communication tools in E-learning may include e-mail, chat, and instant messaging. E-mail can be very effective in communicating with learners if some guidelines are followed. For instance, do learners know that the instructor may not know who they are if a signature is not attached to the e-mail? Learners may also need to be reminded that spam filters and other protective software may need to be adjusted to receive e-mail from classmates and the instructor.

It would be beneficial for all participants to put the course title or number in the subject line of all e-mails to avoid confusion with spam.

E-mail is an effective tool when communication needs to stay private between a few participants. Or the instructor may wish to highlight a certain issue by sending an e-mail to the entire class. Many CMS have built in e-mail features. This allows all participants to simply select the name of an individual or group and send them an e-mail. Most CMSs will allow e-mail to be sent to external addresses not associated with the CMS. When this type of CMS is used, the participants may not receive the e-mail in the CMS; they will receive it via another software program separate from the CMS. However, some CMSs do have a completely internal e-mail system that allows both sending and receiving.

Chat is also known as synchronous discussion. This online tool allows participants to come together on the Internet at the same time and converse about a given topic. Communication via chat is useful when groups want to discuss a topic in real time. Chat may also allow an instructor to have office hours at a particular time. The drawback about this type of discussion is that those with slow Internet connections or slower typing speeds are often a little behind in the conversation. It is also not ideal to have more than 10 participants at a time as the discussion traffic can become overwhelming.

Another tool sometimes used is instant messaging and is not found in most CMSs. Internet vendors such as AOL®, MSN®, and Yahoo!® are frequently used for instant messaging. This tool is similar to the AD in that a post can be created and added to a discussion area. However, it is also similar to chat in that participants are together on the Internet at one time. This technology may also be used by instructors for office hours. A drawback of this particular technology is that they are not locked behind a password protected CMS. This means that others may enter the conversation and spam or unsolicited messages may be sent to participants.

### **Netiquette**

Netiquette is a term used to describe online interaction guidelines that are considered desirable in professional venues (O'Neil et al., 2004). The goal of Netiquette is to create an environment that promotes effective communication and understanding. In E-learning netiquette should be practiced by all participants at all times. Expectations about netiquette should be listed in all syllabi and emphasized frequently throughout the course (Palloff & Pratt, 2003). These concepts should be maintained regardless of the communication tool being used. Main principles include:

1. proof prior to posting (clarity, grammar, spelling)
2. never use all-caps (CONSIDERED SHOUTING)
3. concise communication is critical (use short paragraphs)
4. professional communication should be used at all times
5. communications should be thoughtful and not just “off the top of your head”
6. keep bandwidth in mind (don't include attachments unless needed)
7. use a signature line in all communications
8. if forwarding, remove the FW: indicators
9. avoid sending spam at all costs; this really decreases professionalism

## Building Community

Isolation is often touted as the main drawback of E-learning. The learners miss the f2f interaction with others. The instructor misses the rich interpersonal interactions with the learners.

Consequently, building the online learning community (sometimes referred to as humanizing the learning) is vital (Palloff & Pratt, 1999).

Building an online learning community requires training, practice, and continuous revision. There is no one magic tool that allows the instructor to effectively construct an online learning community. The main goal is to remind the learners (and the instructor) that on the other side of every post, slide presentation, e-mail, and grade, there is a human being.

Community can be developed by sharing personal stories. It is important in most ADs to have learners incorporate some personal experience or opinion related to the learning content (see Appendix B Sample Discussions). This is not only an important part of constructivism and andragogy, but also important in that it can personalize the E-learning. While this particular technique can really enrich the learning for all involved, certain precautions should be taken. Learners must never feel obligated to share sensitive material. They should be told to only share what they feel is appropriate in a group of acquaintances. They must also know not to share proprietary information (business secrets). Even with providing these guidelines, the instructor should be alert to potential problems arising.

Here are some examples of building community in the AD. At one point in a pathophysiology class, kidney transplantation was being discussed. One learner's father was on the waiting list for a kidney. When she shared their experience, the class was really touched by their story of anxious waiting. During a discussion on epilepsy, one learner shared about the fog that she lived in during late adolescence because of antiseizure medication. These are perfect examples of how the properly designed course can really build community among learners.

A properly designed E-learning environment will have areas where learners can interact as well. This allows for learners and the instructor to socialize without disrupting the flow of the academic discussion. These areas may be called the cyber sandbox, cyber café, or break room (Palloff & Pratt, 1999). Other areas that some programs use include an "introductions" or a "biography" AD. Some programs also have an AD area where prayer requests can be shared amongst participants. Conrad and Donaldson (2004) offer some great ideas for online ice breakers that can really build community including: what animal best represents you; take a quiz about your classmates; and describe the view from your favorite window. These can be used to begin the course with a sense of community.

Another way to build community is through role modeling. If the instructor introduces themselves with a transparent biography



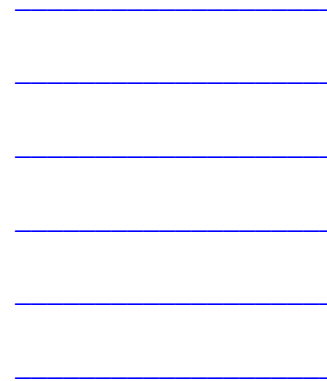
Bueller Bristol

(success as well as failures) then the learners are likely to follow suit. While it is not encouraged that all learners be required to share a photo of themselves, it may be beneficial for all to submit a picture of someone or something important. In a nursing theory course, the author welcomes the class with a funny picture of his dog. This shows that even with a tough (often deemed boring) topic, the online learning community can be fun. An entertaining side effect of sharing this funny dog picture is that learners frequently join the fun and start sharing pictures of their pets or children.

One final recommendation for building community is the use of games. Post a picture in an announcement and give the class a clue as to what the picture might represent. In one example a picture of the Muppet Kami is posted (<http://www.muppetcentral.com/news/2002/091702.shtml>). The learners are told to guess who this is and told that he is HIV positive. In another picture, people are floating in an aircraft while performing CPR. The learners are asked if they can figure out what the aircraft is ([http://www.space.com/peopleinterviews/yaniec\\_991020.html](http://www.space.com/peopleinterviews/yaniec_991020.html)). These are just examples of community building activities that can help learners to feel as if they are part of a team with whom they can interact and trust.

### **Exams and Quizzes**

E-learning can use exams and quizzes in a number of ways. If a hybrid format is used, the exam may be given on paper in a classroom as usual. Then the grade may be placed in an online grade book manually. If the learner is geographically removed from the instructor, a proctor may be contracted at a library, church, or school near the learner's home. The exam would then be delivered to the proctor, administered to the learner, and mailed or faxed back to the school. Or the learner may log into the online exam tool under the supervision of the proctor.



Many online options exist for administering exams. These tools are beneficial because they may have functionality that allows for automatic grading, automatic grade book entry, instant quantitative/qualitative feedback to learners, timed exams, randomization of questions, and even randomization of answer options. Most online exam tools require that the learner enter a password before the exam is opened.

Online testing options can be part of a CMS, part of a book vendor's Web site, or part of software only found on certain computers at the school. If the learners will be taking the exam from a distant unproctored location, it should be considered open book. This is considered acceptable by many faculty and is usually offered as a timed exam (i.e. 30 multiple choice questions in 45 minutes).

It should however be noted that most online tests lack the capability to block copy/paste and printing of the exam. This means that learners may be able to copy questions or print them and share them with learners who have not taken the exam. Using a large pool of exam questions with random assignment may discourage learners from doing this. Keeping the exams timed may also discourage this. Regardless of the techniques implemented to discourage cheating, it will

still occur. However, most authorities have concluded that cheating in E-learning is no more frequent than cheating in the f2f environment (Palloff & Pratt, 2003).

The online quiz or exam can be used in creative ways in both fully online and f2f. The online quiz may be open book but required before a f2f class begins to encourage learners to be prepared for the in-class discussion. The online quiz can be used as a pre-test post-test comparison to demonstrate to the learner what they have accomplished. Another way to use the online quiz is to have group competition games. The team can work on a quiz together and the team with the best score wins.

### **Paper Grading**

Papers can be submitted via a number of mechanisms in E-learning. The learners can e-mail it to the instructor as an attachment. Many instructors do not prefer this method as the e-mail inbox can become cluttered. Learners may submit the paper to a drop box in the course management system. The drop box allows the learner and the instructor to see the status of the assignment and may be connected to the online grade book.

Feedback on papers, essays, and reports in E-learning can easily be managed with the tools in most word processing programs. As was mentioned earlier, the most basic way to provide feedback is to place the cursor where comments are needed and change the color of the font to RED and style to BOLD. This works quite well and allows the instructor to easily communicate feedback to the learner. A more complex method is known as TRACK CHANGES. This particular tool is found under the TOOLS menu in Microsoft Word®. When this feature is “on,” the learner will see a very detailed account of the changes that were made. If a letter was deleted a bubble pops up on the side that shows the deletion. If a word is inserted, its color is changed and it is underlined. One note is that if TRACK CHANGES is going to be used, the learner and the instructor will need the same software program as well as versions that are relatively close. Another feature that can be used is COMMENTS. This is found in Microsoft Word® or Excel® under the INSERT menu. It will put a comment anywhere in a document without changing the document. These features will give a different color to each individual incorporating changes into the document.

One final issue to consider is the use of peer feedback. As was mentioned under *Learner to Learner* feedback above, this tool can not only benefit those receiving the feedback, it can be very valuable to the learner providing the feedback.

### **Plagiarism**

Understanding how to use other’s material is an issue that most learners and instructors struggle with. It is important to teach learners the proper way to use other’s writings, images, and other creations. Many times plagiarism issues arise as a result of a learner not understanding the proper way to cite the source of the information. Therefore, learners in any environment (f2f or E-learning) need training in managing this issue.

One way to avoid plagiarism is to have learners submit their papers to a plagiarism detection program. One such program is called Turnitin®. The software compares the paper to the Internet, other learners' papers, and full text databases. It then gives the learner feedback on how much of their paper appears to be "the words of others." While this resource can be used by faculty wishing to detect plagiarism, it is better used by the learner to prevent plagiarism.

Another way to avoid plagiarism is for the learner to understand proper citation. Some may think that it is acceptable to use unlimited quotes because the source is listed in the reference page. Others may think no quotation marks are needed because an author's name could not be found on the Web site. These are just a few of the common misconceptions learners may have if not properly trained in style and formatting. Learners may also need training in citing the sources of images, animations, and audio clips.

While the literature is clear that plagiarism is no more prevalent in E-learning than it is in the f2f environment, educators still need to have mechanisms in place to deter and detect cheating. As was mentioned above, online tools exist that can assist. Other tools may be the simple Internet search engine such as Google® or Yahoo!®. Simply copy the sentence or passage of concern and paste it in the search window in quotes. By clicking on search, the Web engine will look for that information (quote) on the Internet. The main problem with online plagiarism detection methods is that they are not useful for most print-only mediums (books or magazines that are not full text online).

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### **Information Sources**

The Information Age has brought many blessings and challenges to the learning environment. Information found on the Internet is vast and of a quality that is quite varied. Whenever E-learning is used, learners are going to be more likely to become entangled in this Web of knowledge and information. It is vital that educators clearly direct learners on how to manage this knowledge. Not only for success in the course, but for success as a professional as well.

Once again, clarity is key. It is vital that the educator tell the learners exactly what is acceptable and what is not. If the Internet is to be used as a resource (for papers or posts in the AD), the learner will need to know where they can go and what they can use. By giving them clear instruction, the educator will be teaching the learners what is considered professional and what is not. When the learner is left to their own exploration, they often find material that is questionable and falls far short of professional standards.

The best way to manage the use of the Web in these cases is to give the learners a list of sites that are acceptable and be sure to tell learners how much of the information can come from that source. In one paper that the author assigns, learners are required to have at least three references in the paper. Only one of the three references may be from a list of four approved Web sites and no quotes may be taken from the Web sites. The material take from these Web sites have to be actual articles and can not be patient education material, advertisements, or editorials. The Web sites are:

1. [www.WebMD.com](http://www.WebMD.com)
2. [www.Medscape.com](http://www.Medscape.com)
3. [www.cdc.gov](http://www.cdc.gov)
4. [www.nih.gov](http://www.nih.gov)

Another issue to consider related to information management is that the learner needs exposure to professional sources of information, including journals and databases. Many libraries now offer full text journals and databases online. It is important for the professional of the Information Age to learn how to use these tools. By requiring resources from these areas, the learner will acquire the skills needed to manage these tools.

In one discussion learners are required to answer the instructor's main question and then critique at least two of their peers' posts. In one of the three required posts they must utilize (and properly reference) a full text journal or database from the school's library. They are instructed early on that if they have any questions about using these tools they are to contact the library via e-mail or toll free telephone. This is not only an academic activity to help them learn the content being discussed; it is practice in developing a skill they will need as a professional in the Information Age.

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### **Learning Objects**

Learning objects are great tools for reinforcing what is learned in a class. Learning objects may include games, animations, case studies, simulations, and more. Learning objects are often supplied by text book vendors on accompanying CD-ROMS or on companion Web sites. There are also major learning object repositories on the Internet.

1. <http://www.wisc-online.com/>
2. <http://www.merlot.org/>

Many instructors have created their own learning objects with such programs as Dreamweaver® and FrontPage®. While this is enjoyable for some, others may be intimidated by the thought of undertaking such a task as developing a learning object. Please remember that there are so many sources of free learning objects that few faculty really need to create their own. Faculty should remember that the AD is the most important tool in E-learning and hence should focus there when possible.

### **Audio and Video**

Audio and video (A/V) can enrich E-learning. The A/V can be pre-recorded or live and with the proper technology can be delivered right to the learner's computer over the Internet or via DVD or CD-ROM. The A/V can also be delivered via television in live or pre-recorded format. Some software (PowerPoint®) can incorporate A/V right into a file. Other software can have the learners online watching a slide presentation during a discussion that is heard over the telephone or teleconferencing system ([www.webex.com](http://www.webex.com)).

In one course, the instructor developed a slide presentation that had her talking during every slide. She only did this as an introduction to the course. Some schools use video files to deliver

lectures in the CMS. Another possibility to give the learner a list of videos to choose from. The learner picks one, goes to the video store, rents it, watches it, and does a family assessment on the video.

With today's technology the possibilities are endless. However, a few points to remember:

1. interactions through the AD are still vital
2. learner's personal technology at home may be inadequate for video
3. will learners with disabilities be able to access your A/V (closed caption, screen reader)
4. time is valuable and may be better spent (compared to learning to use A/V technology)
5. text-based learning objects are much easier to update than A/V learning objects
6. some A/V material already exists on the Web
  - a. <http://ci.columbia.edu/ci/tools/1121/index.html>
  - b. <http://www.wilkes.med.ucla.edu/lungintro.htm>
  - c. <http://www.med-ed.virginia.edu/courses/pom1/videos/index.cfm>
  - d. <http://www.mayoclinic.com/health/blood-sugar/MM00641/RETURNTOOBJID=67CDF280%2D4583%2D4E6E%2DA1DD12C8817E4302&RETURNLINK=1>

### **Simulation**

Simulation is a term that encompasses many different learning modalities and objects. When one certifies for CPR, that is considered simulation-based training with a human patient simulator (HPS). The HPS is divided into low-fidelity (simple technology if any) and high-fidelity (computer controlled mechanics in the mannequin). Some high-fidelity HPSs can have bowel sounds, give birth, have a collapsed lung, die, etc.

There is great value in using a HPS. When learners go to clinical or practice in a health care setting, they may not experience every scenario possible. For instance, even though the learner in nursing is expected to know how to manage a patient having a heart attack, they may never have that opportunity in clinical. Therefore, the HPS can allow learners the opportunity to manage this patient situation. Another valuable part of the HPS is related to safety. If they are just learning how to manage a patient with a heart attack, it is much better to practice on a mannequin than on an actual person.

One final advantage of the HPS is related to nursing education in particular. There is a growing problem of clinical space for training of new nurses. In many schools, some learners can not progress in the nursing program because there are no places for them to practice in a live health care setting. It is for this reason that some states are using more HPSs to replace some of the time spent in clinical.

Using the HPS can be considered a part of E-learning because it can be used to enhance the simulation experience. The instructor may use an AD to debrief learners after a simulation. Video from the simulation experience can be posted in the CMS for evaluation by all learners.

An online exam can be given prior to a simulation experience to ensure that the learner is coming prepared to practice.

Another type of simulation is computer-based simulation. With this type of simulation the learner can use software (on the personal computer or Internet) to simulate the actions of caring for a patient. This may include everything from choosing steps in a process (administering medication safely) to identifying important information from a patient interview (watch a video and take notes).

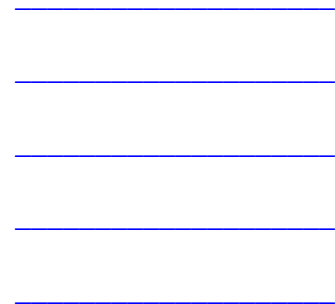
Popular computer-based simulation programs used in nursing education are:

1. Virtual Clinical Excursions ([http://evolve.elsevier.com/staticPages/s\\_vce.html](http://evolve.elsevier.com/staticPages/s_vce.html))
2. MicroSim (<http://www.laerdal.com/document.asp?subnodeid=10439140>)

While this type of simulation lacks the actual hands-on (psychomotor) part of health care practice, it does allow for development of critical thinking and preparation for clinical and skills-based training.

### **Psychomotor Skill Training**

Certain learning outcomes may not be solely attainable with E-learning. There are skills that the learner must actually practice hands-on to attain competency. There are times when learners must sit face-to-face with an actual patient to understand the full impact that health care can have on a person. However, there are ways of using E-learning to greatly enhance the f2f and psychomotor learning experiences.



Clinicals are great courses to augment with E-learning. The communication tools can keep the instructor in touch with learners, preceptors, and other faculty. If the clinical is taught in a group by the actual faculty member (i.e. 1 instructor to 10 learners at the hospital at one time) the post-conference (debriefing) may occur in an asynchronous discussion. This allows the learners time to get away from the busy clinical and think about what happened. Then they come together online to share high quality reflection with the rest of the class.



A similar use of the AD has to do with preceptors in the clinical environment. There are certain clinicals where learners are paired with a professional practicing in the clinical agency. The learner is taught by the preceptor. The faculty member then communicates with the preceptor and the learner to monitor the learning experience. Using an AD to facilitate this communication has many advantages. A discussion area could be developed that allows learners from a variety of clinical sites to come together and discuss what they have experienced (even though they may be geographically separated). The preceptors may be able to collaborate with other preceptors and the faculty for learning and support. This is an important concept for nursing education as more preceptors are being used.

In skills (psychomotor training) E-learning is a valuable tool. Through the asynchronous discussion, former/current patients can share with learners what their experience was with a certain procedure (i.e. getting a shot). This type of interaction allows the learner to better

understand the effects of the skills, at a time when they are very focused on psychomotor training. Professionals could take part in the AD regarding their current practice to make the learning relevant for the learner. For an example of best practices in this area, review Online Communities of Professional Practice under *Best Practices*.

### **Rubrics and Scoring Guide**

For the purposes of this discussion, rubrics and scoring guide will be synonyms. A rubric is a contract between the learner and the instructor on point allocation for a particular learning activity. As was noted earlier, the learner needs clarity when learning occurs online. Using a rubric should assist in that process.

Rubrics should encompass all elements of a project or learning activity that are important. If the project is in a group format, the rubrics may need to include evaluation of group process. If the rubric is for a discussion, learners may need direction in how and where to post a question or reply. The instructor should be careful to not impose words that are not well defined in a rubric. For instance, does professional presentation mean “interesting with animations/images?” Or does professional mean “animations/images are inappropriate?”

Conversely, while clarity is vital, the instructor should be careful to limit learning and critical thinking. If the rubrics is too structured, the learner simply becomes like a robot in completing assignments. Or learners may be able to fulfill the objective via another means that the instructor has not considered. Instructors may intentionally leave part of the assignment open to allow for creativity for the learner. Appendix A has two sample rubrics for review.

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### **Syllabus**

Some programs refer to the syllabus as the module. Other programs use multiple modules to compose one syllabus. Regardless of the terminology, there are a few structural considerations for the syllabus in E-learning.

The syllabus in E-learning is quite similar to that which is found in f2f classes. This is important to remember because many times academic institutions have syllabi formats that will need to be considered when developing the syllabus for E-learning. Most institutions that use E-learning attempt to maintain a standard format for the syllabi to improve the learner’s ability to move from course to course. If format is also maintained with the f2f programs, the learner will be able to better transition between f2f and E-learning.

The syllabus for E-learning usually needs a statement about skills and technology required to participate in the course. This statement may also include information on acquiring these skills or tools. The E-learning syllabus may also need information on help desk availability and other administrative contacts. Information about exam issues, such as proctors and timing, may need to be addressed. Due dates for AD and assignments are also important.

Many E-learning programs have a weekly schedule for all courses. Some begin on Tuesday. Others begin on Wednesday. The benefit in this type of structure is that the syllabus can have a static date system. For instance, all discussion 1 posts are due by week 2 day 4. This could apply every time that course is taught and would be reinforced by a separate calendar handout.

Another issue to consider is placement of assignment descriptions, discussion questions, rubrics, peer/group evaluation forms, etc. In some E-learning courses these are all part of the syllabus. In other courses, these items may be “handouts” in the course room or file sharing. It really depends on the preference of the program.

## APPENDIX A – SAMPLE RUBRICS

### Sample 1 – Pharmacology Course

Online Discussion (This is a hand out for learners in online discussions)

Purpose - One of the student's greatest resources in learning is fellow learners. It is for this purpose that a graded online discussion is a part of this course. Through discussion with others about topics relevant to the classroom content, the student will gain a better understanding of the topic and learn the value of collaborative investigation and learning. Collaboration is not only an excellent tool to improve learning but a vital component of professional nursing practice.

These discussions will assist the student in identifying important information for assisting clients who are using pharmacological agents. This discussion will also demonstrate the student's ability to be self-directed, collaborative, and use critical thinking skills as a tool to improve client outcomes.

Instructor Participation – The instructor will monitor the discussion and make comments when necessary. The instructor has the responsibility of keeping the discussion focused and moving forward. However, learning research cautions instructors to not be too involved in that he or she may blunt the conversation and learning of the students. Therefore, the instructor will not provide a response to every student with every post. The instructor has the responsibility of posting the discussion one week prior to the initial due date. The instructor will provide a point value for the discussion participation in the Gradebook on eCollege when the exam grade is posted.

Student Participation – The student has the responsibility to be interactive in the discussion with others in the discussion setting. This interaction requires that the student read ALL posts from the instructor (even those directed at other students) and all posts directed at the student personally. In addition, students have the responsibility to post their responses on time. The student has the responsibility of presenting the information in accordance with the rubrics presented below. Above all else, the student must stay in contact with the instructor regarding issues that arise BEFORE a deadline is missed. If a deadline is missed with no PRIOR communication, points will be lost at the instructor's discretion. If the student is professional in communicating needs, the instructor MIGHT be able to assist the student in meeting class requirements with minimal, if any, impact on grade.

You should provide the main responses on your own. However, you will be collaborating closely with other students as you reply to your classmates. Your participation is vital to everybody's learning in the class because of your contributions.

Journal Articles and APA formatting – Success in the online discussion requires identification of professional nursing journals from the CINAHL database in the library. The article or journal title should have the word NURSE somewhere in the title. When searching for the article, be sure to check the PEER REVIEWED box. These articles must not be older than 5 years and need to be peer reviewed (can not be editorials, letters, commentaries, advertisements). The student will need to find articles related to the discussion questions, make a personal copy of the article, and discuss the article with other students in the online discussion. The librarian can assist the student in acquiring articles in person at the library or over the Internet.

The written presentation of the journal article requires that APA formatting be used as this is the gold standard in nursing. Information on using APA format and the library can be obtained at the library or in the "WebLinks" section of "NurseTim.com." The APA formatting will not hold completely in eCollege. The hanging indent and italics may be lost in the posting to the discussion board. However, the student needs to keep the sequence format correct (ie. author/year/article title/journal title/volume/issue/page #).

Online Discussion will provide the student with the opportunity to obtain a maximum of 10 out of 10 points. Point allotment will be based on the following rubrics. Final point allotment is at the instructor's discretion.

### Grading Rubrics

Discussion Area	Excellent	Satisfactory	Unsatisfactory
Response to Main Discussion Questions	3pts – Includes: 1. 100 – 250 word response to <u>each</u> main discussion question (usually 3 POSTED BY INST) 2. Posting is clear and concise 3. Posting poses 1 UNIQUE question for others to answer.	2pts – Depends on: 1. Minimum response 2. Posting is clear and concise. 3. Posting poses 1 UNIQUE question for others to answer.	0-1pts - Depends on number of requirements met.
Response to Others	3pts – Includes 1. 50 word minimum per response to others 2. Response to at least <u>4</u> other students' responses to include responding to at least one other student's main post.	2pts – Depends on: 1. 50 word minimum per response 2. Response to at least <u>3</u> other students.	0-1pts – Depends on: 1. 50 word minimum per response 2. Number of Responses to other students.
Journal Article	2pts – Includes: 1. Postings include at least one Journal Article from a professional nursing journal* related to the discussion. 2. APA reference to the Journal Article 3. The article is discussed in the posting and relates to issues being discussed by the students.	1pt – Depends on: 1. Postings include at least one Journal Article from a professional nursing journal* related to the discussion. 2. APA reference to the Journal Article 3. The article is discussed in the posting and relates to issues discussed by the students.	0pts – No article listed or 2 or more of the requirements are missing.
Discussion Participation	2pts – Includes: 1. Discussion posts are made by midnight of the day/date listed in the syllabus. 2. The student participates in each discussion on <u>2</u> <u>different days</u> .	1pt – Depends on: 1. Discussion posts are made by midnight of the day/date listed in the syllabus. 2. The student participates in each discussion on <u>2</u> <u>different days</u> .	0pts – 2 or more of the participation requirements are not met.

\* Professional Nursing Journals are found in CINAHL, have the word NURSE in the title, and are PEER REVIEWED. The librarian can assist you in finding these articles. You NEED to MAKE a COPY of the article (paper or electronic) in the event that the classmates or the instructor asks for a copy.

## Sample 2 – Medical Surgical Course

### Scoring Guide Overall Criteria and Ratings

#### Scoring Standards

You must achieve a total of 83% of the points possible or higher to pass this assessment task.

#### Rating Scales

2.5 Criterion met consistently

1 Criterion met inconsistently

0 Criterion not met

#### Scoring Guide Criteria and Ratings

No.	Criteria	Values		
1.	You cover criterion for each case study.	2.5	1	0
2.	You follow directions by: (1) Submitting the case study on time. (2) Using at least one resource from the CINAHL or ProQuest Nursing Database (available from the Moraine Park Library Web Site).	2.5	1	0
3.	You interact with peers by: (1) Participating in the case study discussion on two different days (at least 24 hours apart). (2) Providing substantial feedback to at least two peers' case studies: two strengths of the case study and two areas in which improvement is needed (at least four sentences). (3) Providing evidence for your critique from valid journals, books, Web Sites.	2.5	1	0
4.	Total Points Possible	7.5		
5.	Total Points Achieved			

## APPENDIX B – SAMPLE ASSIGNMENTS

### Sample 1-Images Online

Go to Google.com and click on the Images tab. Print out 2 pictures of hydrocolloid dressings and 2 pictures of transparent dressings. At least one picture for each must include a human. Copy/paste the Internet address for each picture into a post in the Wound Discussion.

### Sample 2-NCLEX Prep

*NCLEX Prep* for chapters 2,3,5,6

There are 2 assessments here. The first is *NCLEX Practice*. The second is *NCLEX Writing*.

*NCLEX Practice* - Visit the Companion Website ([www.prenhall.com/adams](http://www.prenhall.com/adams)) for your text book. Go to the NCLEX-RN Review for the chapters listed above.

Take the NCLEX Questions for each chapter. When you are finished click on "Submit Answers for Grading."

If you got a score of 70% or better, then Email the Results to yourself and the Instructor ([tim@nursetim.com](mailto:tim@nursetim.com)). The email function is at the bottom of the "Your Results for "NCLEX-RN Review" page. It is also recommended that you print out your results in the event that the email did not go through.

If you did not get 70% or better, then retake the quiz. Once you obtain the 70% or better, e-mail the results to your instructor. Make sure you do this for each chapter listed above.

NCLEX Writing

In a separate Word document, develop 2 NCLEX style questions from each of the chapters listed above. You may NOT use 'all of the above' or 'none of the above' or 'only A and B' etc. After each question, you must indicate the correct answer, rationale, and what page number in your text book you used to develop the question. See the practice NCLEX questions that you took for examples. Once you have written 2 NCLEX questions with the correct answer, rationale, and page number, submit the Word document in the Dropbox.

NCLEX Writing Example (Your NCLEX Writing should be formatted like this.)

Ch. 10

1. The nurse must understand the following things when treating patients in different ethnic groups:

- a. diet, alternative therapies, beliefs of health and diseases, and genetic differences
- b. just gender differences
- c. ethnic and cultural and beliefs
- d. diets, therapies, and andero(folk healer)

ans. A; pg. 95

RATIIONALE - Culture and ethnicity can impact pharmacotherapy in many ways. The nurse must keep in mind that when treating patients from different ethnicity she should remember these variables, diet, alternative therapies, beliefs of health and diseases, and genetic differences.

### **Sample 3 – Discussion Assignment**

*This discussion assignment is graded with Sample Rubrics 1.*

You are a new graduate nurse on the unit of your dreams. This unit just happens to be in the part of the world that you have always wanted to live in. It is your first day of taking care of patients. As you are preparing to give your medications, one of the meds is not in your drug guide so you have no ready source to find the information. Pick one of the drugs from the Drug Master List for Exam 1. Pretend like this is the drug that you could not find in your drug guide.

When students cannot find a drug in their drug guide they are told to go look it up online at [www.google.com](http://www.google.com). Take the drug that you have chosen and do a "Google Search" on that medication.

1. What medication did you choose to look up? List 2 sites that you found useful from your "Google Search." For each of these sites describe the usability and accuracy of information compared to what information you have learned in class about the drug.

HINT: Look over grading RUBRICS in your syllabus to make sure that you do not miss any discussion points. If you stay organized, these points are quite manageable.

2. Do you feel that using Google in this way is a safe and effective way to identify information about new medications that may not be in the drug guide? Why or Why not?

HINT: Don't forget to somehow (somewhere in this discussion for Exam 1 Discussion 1) incorporate your Journal Article in APA format. Make sure that it is from a peer reviewed journal listed in CINAHL. Make sure that the word "nurse" is somewhere in the title of the article or journal title. You can cite and reference this article in any of your 3 main posts or 4 peer posts as long as it is applicable and you used the information from the article that you are listing.

3. The Tool Box Memorization List can be a tough item to get used to. However, as professional nurses, we face new challenges each day we are on the job. What is one or two problems that you had while studying the Tool Box for Exam 1. How did you overcome the problem(s)? (you may not say 'I talked to the instructor.'). What was the answer to your problem?

## **Sample 4 – Discussion Assignment**

*This discussion assignment is graded with Sample Rubrics 1.*

Visit the website (SeniorNet) listed above [*links not present in this manual*]. If you have trouble accessing the links try to highlight the entire address and select COPY from the EDIT menu. Then open a new web browser page and PASTE the address into the address window.

Read some of the posts presented by people suffering from heart disease. I would ask that you NOT reply to these posts as this is a web site for seniors suffering from heart disease (unless you are a senior). Please note you will need to scroll down quite a bit to read more posts. If you would like to see more pages of post, scroll all the way down and click on the "first – previous – next – last" buttons to see more posts.

Don't forget to discuss a journal article at some point in your MAIN posts OR your PEER replies.

1. Based on the posts that you have read, pick one or two posts where patients talked about symptoms that they experienced with their disease. Using what you know of anatomy/physiology and heart disease, write a letter to that person explaining to them why they had the symptom that they did. Please make sure that your letter is accurate, because they may make important decisions based on the information that you provide. Post your letter in OUR WebCT discussion board for others to critique. (Again, do not post in Senior Net).
2. After reading some posts at SeniorNet, describe some of the important issues that patients and family members are talking about. What makes these issues so important to patients? Is this a useful tool for nurses? Why or Why not?
3. What are your thoughts on the John Q video clip (in the Exam 2 folder on the CD)? Is this realistic? Have you seen the movie or will you go rent it? :-)

For this discussion set you may pick an article on heart disease to talk about in the appropriate question from CINAHL (make sure that it is a professional journal with the word "nurse/nursing" in the title of the article or journal).

## INDEX/GLOSSARY

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### A

A/V · See audio video · 30, 31  
AD · See asynchronous discussion · 27, 28, 32, 33, 34, 35, 36, 39, 40, 41, 42, 43  
access · 23, 24  
adult learner-*one who displays characteristics such as a 'need to know' and 'self determination' in the learning process* · 6  
andragogy-*learning/instructional design theory that focuses on characteristics of adults which can affect their learning* · 5, 6, 22, 28, 36  
Angel® · See course management system · 29  
animations · 22, 39, 40, 43  
announcement · 34, 37  
ASN · See ADN · 8  
assignment submission tools · See submit assignment · 30  
asynchronous-not present online at the same time · 5  
asynchronous discussion · 6, 15, 20, 32, 42  
attachment-*a file that is incorporated into a digital communication* · 38  
audio · 40

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### B

bandwidth-*the speed that information can travel over the Internet (i.e. dial up has less bandwidth than Cable or DSL)* · 22, 35  
BlackBoard® · See course management system · 29  
blended · See hybrid · 5  
break room · 36  
BSN-*bachelor's of science in nursing* · 8  
building community · 36, 37  
bulletin board · See asynchronous discussion · 5

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### C

case study · 40, 46  
CDC-*Centers for Disease Control and Prevention* · 39  
chat · See synchronous discussion · 5, 30, 31, 35  
cheating · 37, 39  
CINAHL-*Cumulative Index to Nursing & Allied Health Literature* · 34, 44, 45, 46, 48, 49  
cite-*to give reference to the information source* · 38, 48  
clinical-referring to the area where learners and professionals interact with patients · 7, 8, 9, 19, 27, 41, 42  
CMS · See course management system · 9, 19, 21, 30, 40  
comments-*feature in Microsoft Word® that allows for annotations in the document without altering the text of the document* · 38  
Community College of Denver · 10  
constructivism · 6, 7, 24, 36  
course management system-*online software that provides a group of tools (grade book, discussion board, e-mail,*

*test generators) useful for managing E-learning.* · 8, 16, 28, 29, 37  
critical thinking · 11, 12, 32, 33, 42, 43, 44  
cyber café · See break room · 35  
cyber sandbox · See break room · 35

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### D

disability · 23, 24  
differently-abled · See disability · 23  
discussion board · See asynchronous discussion · 4, 5, 26, 31, 43, 48  
dog picture · 37  
Dream Weaver® · 30, 40  
drop box-*tool in the CMS to exchange files between learner and instructor* · 31, 38

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### E

eCollege® · See course management system · 29, 43  
E-learning-*using computer and Internet-based tools for communication during the learning interaction.* · 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 21, 22, 23, 30  
eLine · 8  
e-mail · 5, 22, 23, 30, 34, 35, 36, 38  
English as a Second Language · 25  
exam · 24, 31, 37, 41, 43, 44

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### F

f2f · See face-to-face · 4, 7, 8, 9, 12, 41 (et al.)  
face-to-face-*the instructor and learners are physically together in the learning environment.* · 4, 41  
feedback · 26, 27, 38  
file delivery · 31, 32  
flexibility · 4, 5, 6, 7, 8, 9, 10, 11, 13, 14  
Front Page®-*software used to develop Web pages* · 30, 40  
full text-*complete document text in a digital format* · 38, 39, 40

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### G

games · 21, 22, 30, 37, 38, 40  
gender · 32, 47  
grade book · 30, 31  
guide on the side · See power shift · 13, 32

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### H

hands-on · See psychomotor · 41  
help desk · 21, 29, 30, 42  
high school learners · 10

high-fidelity · 40  
HPS · See human patient simulator · 40  
human patient simulator-*mannequin that can be used for simulated patient care* · 41  
humanizing · See online learning community · 35  
hybrid-*part of the learning environment is online and part of it is f2f* · 5, 9, 15, 18

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## I

Inbox-*area where files and communication are received digitally* · 37  
Indiana University · 9  
Indiana Wesleyan University · 10, 13  
instant messaging-*online tool where text and files are shared between participants, can be in real time or delayed format* · 21, 33, 34  
instructional design · 3, 5, 6, 12, 14, 15, 17, 20  
isolation · 36

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## K

Kami · 36

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## L

learning management system · See course management system · 9  
learning object · 17, 18, 22, 40, 41  
learning styles · 7, 12  
lecture · 4, 18, 53  
library · 16, 18, 22, 31, 34, 37, 40, 44  
literacy · 23, 24  
Lotus Learning Space® · See course management system · 29

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## M

mannequin · 41  
pedagogy-*instructional design that tends to facilitate the learning of children* · 4, 20  
meaning making-*to create knowledge by interacting with concepts in a natural environment* · 7, 11  
Medscape · 39  
Merlot · 40  
methodology-*term used to describe online pedagogy (andragogy) in this manual* · 6, 10, 13, 21, 22  
MicroSim-*computer-based simulation software* · 42  
module-*term referring to a unit of study, sometimes used to describe a syllabus* · 7, 17, 18, 20, 42  
Moraine Park Technical College · 10

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## N

Netiquette-*preferred communication techniques for E-learning* · 27, 34, 35  
newsgroup-*an Internet-based tool that facilitates text-based communications between participants who present material for review by others* · 4  
NIH-*National Institutes of Health* · 39  
NLNAC-*National League for Nursing Accrediting Commission* · 8  
No Significant Difference-*there is no difference in outcomes between f2f and distance education* · 10

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## O

OCPD · See Online Communities of Professional Practice · 8  
office hours · 26, 35  
Online Communities of Professional Practice-*an Internet-based learning environment that brings together learners, professionals and other stakeholders for the purpose of enriching the learning environment* · 8, 41  
online learning community · 35, 36  
online testing · 4  
overload-*teaching more than the regular full-time contract* · 12

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## P

peer feedback · 27, 37  
physical appearance-*can lead to social inhibitions that deter learner participation in f2f classrooms* · 31  
picture · 35, 36, 46  
plagiarism · 37, 38  
post-*a message that is presented in an electronic forum (chat or asynchronous discussion) on the Internet* · 4, 5, 17, 19, 25, 32, 37, 42, 48  
post conference · 41  
power shift-*the instructor gives more control of the learning to the learner* · 13, 21, 32  
preceptor-*professional that works with learners in the clinical environment* · 7, 41  
PrepareIowa · 9  
problem-based learning · 5  
proctor-*one who will monitor a learner while they complete an examination or quiz off-campus* · 4, 36, 42  
proprietary information-*business secrets* · 35  
ProQuest · 33, 45  
Psychomotor-*term used to describe a skill that is done with physical objects, usually requires hands-on learning* · 41

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## Q

qualitative grading-*grading of a written assignment (AD) where the content and structure of the final product are closely analyzed* · 32, 33, 36

quantitative grading-*grading of the AD where the number of posts are counted* · 32, 33, 36  
quiz · See exam · 36, 37

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## **R**

references · 25, 35, 40  
role modeling · 31, 35  
rubrics · 27, 31, 41, 42, 43, 44

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## **S**

sage on the stage · See power shift · 13, 32  
search engine · 38  
SeniorNet · 48  
shouting · 34  
simulation · 41, 42  
social inhibitions · 31  
spam · 33, 34  
strategic plan · 14  
submit assignment · 30  
syllabus · 12, 17, 22, 25, 42  
synchronous discussion · 14, 34

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## **T**

text book · 4, 25, 41, 467

track changes-*tool in Microsoft Word® that allows users to see changes made in a document and accept or reject those changes* · 25, 37  
Turnitin®-*software that analyzes document files for possible plagiarism* · 38

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## **U**

University of Iowa · 8  
University of Phoenix · 9, 12  
unproctored · 36  
ADN-*associate's degree in nursing* · 7

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## **V**

video · 4, 7, 23, 26, 31, 39, 40, 48  
Virtual Clinical Excursions · 41

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## **W**

WebCT® · See course management system · 29, 48  
Webex · 39  
WebMD · 38  
Wisconsin Technical College System · 7  
Word® · 25, 38  
word processing · 25, 37

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**FEEDBACK PLEASE**

The Center for Health Workforce Planning values and invites the input of health professionals in practice and education, and the public. Any input you may have related to this manual is appreciated. Comments may be directed to Eileen Gloor at [egloor@idph.state.ia.us](mailto:egloor@idph.state.ia.us) or the consultant, Tim Bristol, at [tim@nursetim.com](mailto:tim@nursetim.com).

**Input**

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