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Promoting student success in online courses

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Abstract

This review examines the factors promoting student success in online courses. The first part of the study examines how prevalent the dropout rate is in secondary education, not only in the United States but also in Asia and Europe. The second part examines how online courses differ from face-to-face courses. The third part covers skills that are essential for succeeding in an online environment. The skills discussed are self-regulation, self-efficacy, motivation, and depth of learning. The fourth part of the study discusses what can be done to strengthen online courses.

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ABSTRACT

This review examines the factors promoting student success in online courses. The first part of the study examines how prevalent the dropout rate is in secondary education, not only in the United States but also in Asia and Europe. Research indicates factors contributing to the dropout rate include the age of the student, gender of the student and employment of the student. The second part of the study examines how online courses differ from face-to-face courses. The third part of the study covers skills that are essential for succeeding in an online environment. The skills discussed are self-regulation, self-efficacy, motivation, and depth of learning. The fourth part of the study discusses what can be done to strengthen online courses. Included in this section are course planning and communication tools that promote learning. Sources used in this study were published articles, literature, and research papers. The conclusions drawn from this study are: a) steps need to be taken to ensure that traditional and non-traditional students are both equally ready to succeed in an online course, b) concessions need to be made for students who are employed full time, and c) students should take prerequisite class before they are able to start an online course. Other recommendations are online learners need to be self-regulated, have strong self-efficacy, and be highly motivated to be successful in an online course. A community is essential if collaborative work is to take place that promotes critical in-depth learning. Collaborative activities are best assessed by collaborative means. Lastly, the appropriate communication tool needs to be selected to enhance the learning activity.

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INTRODUCTION

In the past when a person heard the words *distance education* one thought of correspondence courses, where the learner would receive course work through the postal service. Now the words *distance education* conjures up images of online courses, the Internet, and computers. With more and more secondary education going to online courses, there is a need to determine if course dropout rate is higher with online courses compared to traditional face-to-face courses. By examining what the design differences are between an online course and a traditional course, a better understanding can be gained as to the best way to design instruction so all students get the most from their learning experiences. The dropout rate may decrease as there is an increase in the understanding of how to design online instruction that will best suit the students' needs for motivation, relevance, and student-to-student and student-to-teacher interaction (Diaz, 2002).

This literature review will touch upon the dropout rate of post secondary education, skills needed to be successful in an online course, and ways to bridge the gap between online and traditional learning. Instructional designers or instructors can use these findings so they are better able to design instruction for the online environment. This review will seek to answer the following questions:

1. Is there a higher course dropout rate in online or traditional post secondary classes?
2. Who is dropping out of post-secondary classes?
3. How online courses differ from face-to-face courses.
4. What skills are essential for succeeding in an online environment?
5. What can be done to strengthen online courses?

METHODOLOGY

Finding information covering the dropout rate of online courses was rather difficult because there is limited data on the subject. The reviewer searched electronic databases using keyword-searching methods to locate online and traditional sources on the topic. ERIC (Electronic Resources Information Center) and WilsonWeb allowed the reviewer to locate articles, journals, and publications that were peer reviewed. The reviewer used descriptors to locate the information. These descriptors are as follows: dropout, dropout rate, andragogy, adult learners, online courses, distance education, Malcolm Knowles, motivation, self-regulation self-efficacy, depth of learning, e-tools, and course planning.

The reviewer also used the Google Scholar database to locate peer-reviewed articles, journals, and publications. The same descriptors were used to locate information on Google Scholar that were used on ERIC and WilsonWeb. Under each article there was a link called *related articles* that the reviewer used to find additional resources.

The UNISTAR database was used to search for traditional literature. The same descriptors were used to locate information on UNISTAR that was used on ERIC, Google Scholar and WilsonWeb. When literature was located in the stacks, the reviewer was able to look at surrounding literature to find additional resources.

To check the credibility of the articles, journals, and publications; the reviewer first checked the authors' background to rule out if the information presented was biased. Each author's name was entered into a search engine, for example MSN or Google, to make sure that the author was not working for a company or individual that might gain something from the research if it is slanted in their favor. The second check the reviewer did was to see if the journal or publication was peer or jury-reviewed. The name of the journal or publication was

entered into a search engine similar to the author check. The reviewer checked under how articles are published to make sure they are peer-reviewed or juried-reviewed.

The information was also chosen because of the relevance to the subject matter. The date the information was written was taken into consideration and no information older then ten years was used. References within the selected publications/journal articles were also used.

ANALYSIS AND DISCUSSION

Student Course Dropout Rate

With any new teaching method it is important to analyze the effectiveness of the chosen method - online courses are no exception. Online courses are becoming more and more popular because of their flexibility. Students who work and are unable to attend traditional courses find online courses their answer to continuing their education. Online courses also make it possible for individuals to gain access to the educational system where they might not have had access before. This approach allows students who drop out of school an avenue to finish their education (Roblyer, 2006). Since online learning has such great potential there is a need to determine if the dropout rate is a concern. This section will define a drop out and compare dropout rates between online courses and traditional face-to-face courses.

What is a Dropout?

When trying to determine the online dropout rate, the term dropout needs to be defined. There is some controversy as to what dropout means. According to Merriam-Webster's online dictionary, dropout means "one who abandons an attempt, activity, or chosen path". Levy (2004) defines dropouts as "non-completers" (p. 185). Yukselturk and Inan (2006) classify dropouts as students quitting online courses. For the purpose of this paper Yukselturk and Inan's definition of dropout will be used.

Comparison

When looking for dropout rates for online and traditional classes, a variance was found in the literature reviewed. The estimates range from 20% to 70 % of student dropout for an online course, with the general consensus landing around 45% (Frankola, 2001; Levy,

2007; Roblyer, 2006; Willgin, 2004; *Yukselturk & Inan*, 2006). Traditional face-to-face classes have a 10% to 20% student dropout rate (Levy, 2007; Willging & Johnson, 2004). Willging and Johnson (2004) stated that students in online courses are twice as likely to dropout as students in traditional courses. According to Yukselturk and Inan (2006), European countries have an online course dropout rate of 20% to 30% and Asian countries have reported as high as 50%.

The literature shows that the dropout rate is higher in online courses than traditional courses. The reasons for student dropout must be examined to see who and why students are dropping out. "By gaining insights into the reasons why students dropout of online programs, institutions that provide such programs can begin to develop strategies to decrease attrition and maintain enrollment rates in their programs" (Willging & Johnson, 2004, p. 108). It is important to develop strategies that will help all students be successful in an online environment.

Dropout Factors

Now that it has been established that the dropout rate in online courses is significant enough to be of concern, factors must be examined to determine what is causing the dropout rate. There are many factors that contribute to the student dropout rate. In this section student's age, employment, and gender will be examined to establish the impact they have on dropout rate.

Student's Age

A student's age has an impact on whether or not he or she will drop an online course. First, the traditional age for students going to college is 18 – 22. Non-traditional students are classified as 23 and older (Southerland, 2006). There are two different ways that age plays a

role in a student's decision to drop an online course: first, the age of the traditional junior or senior student who is close to graduation and secondly, because of the age of the nontraditional student they come to the course with a purpose.

How far a student has progressed in his or her education plays a role in whether or not he or she completes an online course. Freshmen or sophomores are "especially vulnerable to under-performing in online classes relative to how they would fare in a face-to-face class" (Coates, Humpherys, Kane, & Vachris, 2004, p. 534). Levy (2007) stated, "dropout students from e-learning courses are in the lower college status than those who successfully complete e-learning courses" (p. 194). In other words, students who are seniors are more likely to stick with an online course because they are very close to graduation. Whereas, a freshmen or sophomore is more likely to drop the online course because (s)he has the time to take a different face-to-face course before (s)he graduates.

The older the student, the more likely (s)he is to start and finish an online course. According to Neuhauser (2002), "students who withdrew from the online sections were more likely to be the traditional-aged students" (p. 105). Whereas, older students have come back to school and are at school because they want to be there. "Older students are… more mature and disciplined and may value their time and money more than younger students" (Diaz, 2002, p. 3). Semmar (2006) feels that "adults walk into a class with a wide range of intrapersonal attributes, social and cultural experiences that shape their educational quest and their response to it" (p. 2). Nontraditional students know what they want from their education and they are better able to take an online class and be successful.

Employment

The nontraditional student has many commitments outside of school. (S)He has a

family, household, and work life that interferes with school life. Work life is one of the reasons that students dropout of online courses. According to Yukselturk and Inan's (2006), students have to deal with large projects at work and do not have time for the course. For the nontraditional student job responsibilities have a higher priority than course work. (S)He may not have the time required to get homework finished.

The nontraditional students may have to travel for work and be without Internet access (*Yukselturk & Inan*, 2006). This keeps them from participating in the online class activities. Rovai, Ponton, Wighting, and Baker (2007) reported that "lack of employer support were reported as contributors to higher distance education dropout rates" (p. 413). Employment for nontraditional students plays a significant role in their decision to continue on or dropout of an online course.

Gender Affecting Motivation

According to Yukselturk and Inan's (2006) research there were twice as many males as females that dropped from the three groups they studied who were enrolled in an online Information Technologies Certificate Program. There were many reasons why the students dropped the online course, but the main reason was lack of motivation (Diaz, 2002; Frankola, 2001; Jun, 2005). There were not enough hands-on activities in the class to learn or reinforce lessons. There was too much reading from the textbook. According to Roblyer (2006) there needs to be more hands-on activities that promote students working together so they are able to support each other through the learning process. Research of Diaz (2002) found that when designing online instruction, learner's characteristics must be taken into account so students are motivated to learn, which in turn, makes the learning environment meaningful for all students.

Differences

To gain an understanding as to why there is a higher dropout rate of online courses, an examination of how online courses differ compare to traditional face-to-face courses is beneficial. There are many factors contributing to these differences, ranging from technology to motivation (Summers, Waigandt, & Whittaker, 2005). Just a few of the differences, such as course curriculum, lectures, self-regulation, and motivation will be discussed in this section.

When developing an online course for the first time some instructors "translate their curriculum into an online format without consideration of how to utilize the technology in the most effective ways" (Summers, Waigandt, & Whittaker, 2005, p. 35). In other words, the instructor takes his or her current curriculum from a face-to-face course and puts it online without understanding online learning strategies. Some instructors "adopt curriculum to fit the technology rather then choosing technology to fit their curriculum" (Summer, 2005, p. 234). Summers, Waigandt and Tiffany (2005) also state that "technology is not nearly as important as other factors, such as learning task, learner characteristics, student motivation, and the instructor" (p. 234). Technology can impact students learning and motivation. If a student has a lack of computer knowledge this will hinder their online success (Summers, Waigandt, & Whittaker, 2005).

Another difference from face-to-face classrooms and online classrooms are lectures. Some instructors just copy and paste their lecture material onto their website. They are not using the technology to assist the students learning (Summers, Waigandt, & Whittaker, 2005). Conrad and Donaldson (2004) stated that:

> The involvement of the learner in the course, whether one calls it interaction, engagement, or building community, is critical if an online course is to be more than a lectured-oriented course in which interaction is primarily between learner and the content or the learner and the instructor. (p. 6)

The separation of being in the classroom while a lecture is going on leaves some students feeling "a lack of face-to-face interaction… isolated from each other and their instructor" (Summers, Waigandt, & Whittaker, 2005, p. 235). Students also feel they are not able to ask questions and receive a response in a timely manner (Wang & Woo, 2007).

However, some students feel they are able to give a more honest response in an online environment than they could in a classroom. According to Meyer (2006), students were less worried about hurting another student's feeling in an online setting during a discussion. The students were also more willing to disagree with others in an online setting. Less assertive students felt more comfortable taking part in online discussions than they were in a face-to-face discussion (Wang & Woo, 2007).

Wang and Woo (2007) stated that the "complexity index was higher in asynchronous discussions than in synchronous discussions, as students have more time to write, edit, and rewrite sentences in asynchronous discussion" (p. 274). Online discussions take longer than face-to-face discussions. Online discussions do promote more critical thinking, so time needs to be allotted for the students to think about their response after they have read the message (Wang & Woo, 2007).

Two more key indicators of how successful a student will be in an online setting compared to a face-to-face course are self-regulation and motivation. Summers, Waigandt and Tiffany feel that students must take greater responsibility for their own learning in an

online course. They also state that students who "have not developed appropriate strategies for self-regulation may find online courses do not meet their needs and may subsequently drop the course" (Summers, Waigandt, & Whittaker, 2005, p. 236). Also, "students who are characterized as most successful in an online learning environment, tend to be motivated, independent, and organized with good self-regulation strategies" (Summers, Waigandt, & Whittaker, 2005, p. 237). Students who are self-regulated are "motivated by curiosity and demand knowledge rather than by external reinforcement, are more likely to become involved in distance education more deeply and thus experience and enjoy the knowledge acquisition processes to a greater extent" (Rovai, Ponton, Wighting, & Baker, 2007, p. 415). These are important skill for the online student to have to improve their success rate.

Skills

To help students have the necessary skills to be successful in an online learning environment, an understanding of how students become successful learners must be examined. There are many factors that are involved in student learning. This section will discuss self-regulation, self-efficacy, motivation, and depth of learning.

Self-regulation

In the previous section, self-regulation was mentioned as a key factor for student success in an online class. Zimmerman and Schunk (2001) define self-regulation as "the degree that they (students) are meta-cognitively, motivationally, and behaviorally active participants in their own learning" (p. 5). Hadwin and Winne (2001) define self-regulation as "lifelong learners, whether inside or outside the classroom, self-regulate their own learning by strategically interacting with task, and engaging cognitive, metacognitive, and motivational commitment and expertise" (p. 314). Hadwin and Winne (2001) go on to say:

> These learners not only take charge of their own learning, but they also make accurate assessment of how they are doing, and how they might improve. These learners persist when faced with challenge and continually improve and adapt across a range of learning task and contexts. (p. 314)

Self-regulated learners seek out "opportunities to learn" (Eom & Reiser, 2002, 247) and learn for the enjoyment of learning.

According to Zimmerman, Bonner, and Kovach (1996) an instructor can lead the students through the four processes in self-regulation:

- *Self-evaluation and monitoring* occur when students judge their personal effectiveness, often from observations and recording of prior performances and outcomes.
- *Goal setting and strategic planning* occur when students analyze the learning task, set specific learning goals, and plan or refine the strategy to attain the goal.
- *Strategy-implementation monitoring* occurs when students try to execute a strategy in structured contexts and to monitor their accuracy in implementing it.
- *Strategic-outcome monitoring* occur when students focus their attention on links between learning outcomes and strategic processes to determine effectiveness. (Zimmerman, Bonner,& Kovach, 1996, p. 11)

Strategies were mentioned above and according to Eisenberger, Conti-D'Antonio, and Bertrando (2005), learning strategies are tactics and self-management processes that individuals use while learning" (p. 63). Strategies are an important component of self-regulation.

The instructor can also provide four types of support for students to learn self-

regulation. Modeling is the first support. When presenting a new task to students the instructor will walk the student through the steps required to get through the task to achieve a successful outcome. Encouragement is the second support for students. As the student attempts to copy the steps the instructor has shown to complete the task, it is important that the student is praised for the success he achieves and is encouraged to improve. Task and strategic analysis is the third student support. This is where the instructor helps the student break a task down to smaller parts so (s)he can form strategies for completing them. The last student support is outcome checking and strategy refinement. Students shift from strategies to outcomes to check to see if the strategies used were correct for the task. This can be accomplished by examining homework and test scores to see if the strategies provided a successful result or if the there needs to be a modification to the strategies to achieve the successful result (*Zimmerman, Bonner, & Kovach*,1996; Schunk & Zimmerman, 2008).

In order for students to build strategies they draw on their prior knowledge of what has worked for them in the past; students may use the strategy or modify it to meet the current task (Butler, 2002; Emo, 2000). To help a student build on prior knowledge, the instructor can build scaffolding to guide the student's "cognitive processing" (Butler, 2002, p. 84). As the student increasingly learns to construct personal strategies the instructor will remove the scaffolding.

Pintrich (1995) points out that self-regulated learners have a "positive self-efficacy for learning" (p. 10). Butler (2002) said, "students' perceptions of self-efficacy influences the goals they set, their commitment to those goals, and the learning strategies employed" (p. 83). In order for students to be self-regulated learners, they must also have self-efficacy.

Self-efficacy

As stated above, self-regulated learners must have self-efficacy. Self-efficacy is one's beliefs in one's ability to perform a specific behavior or set of behaviors required to produce an outcome (Maddux, 1995; Eisenberger, Conti-D'Antonio, & Bertrando, 2005; Wang & Newlin. 2002; DeTrue 2004; Spindler & Spindler, 1989). Maddux (1995) adds that self-efficacy is also:

> People's beliefs about their capabilities to exercise control over events that affect their lives and their beliefs in their capabilities to mobilize the motivation, cognitive resources, and courses of action needed to exercise control over task demands...not with the skill one has but with judgments of what one can do with whatever skills one possesses. (p. 7)

In other words, the learner as to believe in his or her own abilities to complete a given task.

There have been studies completed to see if self-efficacy has an affect on how students perform in online courses. Wang and Newlin (2002) found that "self-efficacy beliefs are predictive of college students' persistence and success in an academic major" (p. 152). Wang and Newlin (2002) also stated that a student's self-efficacy toward computers is also a predictor of how (s)he will perform in online course. DeTrue (2004) felt that students with higher self-efficacy also had higher online technology skills. Wang and Newlin (2002), also found that students enrolled in online courses had higher self-efficacy than those who took the course because there was no other course they could add to their program of study.

To better serve online students, an instructor should consider why students enroll in their course. The "course's first quiz might be a brief questionnaire concerning reasons for enrollment as well as students' perceived efficacy" (Wang & Newlin, 2002, p. 161). This

quiz could show the signs of at risk students. Wang and Newlin (2002) also felt that the number of *hits* the student made to the homepage was also an indicator of their self-efficacy.

Eisenberger, Conti-D'Antonio, and Bertrando (2005) found to improve self-efficacy students "should be guided, given feedback, and reinforced positively as they persistently practice the application of skill strategies in the face of difficulties, stressors, and competing social attractions" (p. 43). A student's self-efficacy can be weakened or strengthened by feedback. If a student is told that they outperformed themselves they will have greater self-efficacy because they will feel that they can do what needs to be done and succeed. Whereas, if a student is told that they did the worst in the class they will have lower self-efficacy because they will feel that they don't have the ability to succeed in the class (Schwarzer, 1992).

To help students have good self-efficacy, students need to develop skills. These skills are similar to the skills needed by students to be self-regulated learners. These skills include establishing goals, selecting strategies, identifying and recording key information, organizing information into chunks, and reflecting on the use of effective strategies (Eisenberger, Conti-D'Antonio, & Bertrando, 2005).

Ways to help students that will not negatively affect their self-efficacy is to watch their grades and if they start to fall, step in to help guide them back on track. "Providing time for students to think, talk, and write about their learning, their current level of skill development, their effective use of strategies, and their goal achievement is essential for developing self-efficacy" (Eisenberger, Conti-D'Antonio, & Bertrando, 2005, p. 52). A student should be helped to set goals that are realistic, not so high that the student will fail or so low that there is very little interest (Eisenberger, Conti-D'Antonio, & Bertrando, 2005).

Motivation

Stated in the previous section, motivation is a key element to succeeding in an online environment. According to a study done by Dunidan and Curry (2006), the "two most important variables used to determine achievement are motivation and learning strategies" (p. 153). Furthermore, Dunidan and Curry (2006) state, "students of distance education should be highly motivated and self-monitoring" (p. 154). Motivation and self-regulation are important for the online students because they lack the deadlines of coming to class and turning in assignments or taking tests. They have to make themselves stay on track and get assignments done on time.

Motivation has been defined as "the length and direction of effort expended by the learners in pursuit of achievement" (Moller, Huett, Holder, Young, Harvey, & Godshalk, 2005, p. 139). There are two types of motivation, intrinsic and extrinsic. Intrinsic motivation occurs when a student "engages in actions for their own sake and without coercion such as satisfaction, interest, learning, and challenge" (Alderman, 2004, p. 247). Whereas, extrinsic motivation "occurs when students engage in activities for external reasons (outside of themselves) such as praise, grades, special privileges, and certificates or material rewards" (Alderman, 2004, p. 247). There can be a combination of both of these motivations. An example would be a student who really likes to learn about math, but also likes to get good grades in classes. This student has intrinsic motivation because he enjoys learning about math and extrinsic motivation of getting a good grade. However, if a student is always driven by a reward of some kind they will not be motivated to learn for learnings sake. (S)He may need extrinsic motivation, such as money, a game etc.

Reiser and Dempsey (2007) stated that it is "necessary to gain students' attention

before they will learn" (p. 83). The literature reviewed recommend Keller's ARCS model of motivation (Choi & Johnson, 2005; Dick, Carey, & Carey, 2005; Reiser & Dempsey, 2007), The "ARCS model is a problem-solving approach… which includes an analysis of audience motivation, which provides a basis for selecting appropriate tactics" (Reiser & Dempsey, 2007, p. 87). ARCS stands for Attention, Relevance, Confidence, and Satisfaction. The attention area is what can be done to grab the students' attention and keep it. Relevance is how the instruction can be tied to the learners need. Confidence is how the learning can support the students' belief in their competence. "If they (students) understand the material and are confident that they will be successful, then motivation is sustained" (Dick, Carey, & Carey, 2005, p. 191). Satisfaction is providing reinforcement to the learner's success (Reiser & Dempsey, 2007, p. 88). Dick, Carey, and Carey (2005) commented "when you can incorporate all four – attention, relevance, confidence, and satisfaction – into your strategy, the likelihood of maintaining the learners' interest is greatly increased" (p. 191). As stated throughout this review, motivation is critical for students success in an online learning environment.

Depth of Learning

What is deep learning? Weigel (2002) defines deep learning as "learning that promotes the development of conditionalized knowledge and metacognition through communities of inquiry" (p. 5). Metacognition is mentioned in self-regulation and this is the "ability to think about thinking – the art of thinking. It involves being able to monitor and reflect on one's level of understanding to know when this understanding is not adequate, and how to remedy this inadequacy" (Weigel, 2002, p. 7). A distinction between deep learning and surface learning needs to be made so there is an understanding how metacognition fits

into deep learning and self-regulation. According to Samkaran and Bui (2001):

> A student using deep learning will put in longer study hours, make detailed notes from the text and class Web site, do exercises in addition to meeting minimum assignments, and will study continually rather than cram. It may be the highest form of learning. Surface learners on the other hand are directed to memorizing facts, disjointed pieces of data, examples, and illustrations. A student using surface learning will have a reproducing orientation trying to memorize pieces of information and is more interested in good grades without having to fully master the material. (p. 192)

Metacognition is going past the surface of learning and learning for understanding. It is learning out of curiosity because the student wants to know more.

Titeston (2005) states there are four stages to develop deep learning. Stage one is starter knowledge, which is sometimes referred to as surface knowledge. A student just memorizes facts without any specific meaning to them. Stage two is relational knowledge. This is where students are starting to make connections across disciplines and time. Stage three is globalized knowledge. This knowledge stays with a person throughout her/his life. Students see things from others' points of view and have an understanding of the value of the information they have acquired and the processes it took to get that information. Stage four is expert knowledge. This is where students are insightful and can apply the knowledge in many different contexts.

The challenge of an online course is to present information in a way that promotes deep learning. According to Weigel (2002) there are six teaching methods that promote deep learning; many of these are similar to what is needed to promote self-efficacy. The six teaching methods are modeling, coaching, scaffolding, articulating, reflecting, and exploring.

Modeling is teaching students how to think to promote problem solving. Coaching is where the instructor helps the student walk though the problem solving process, and helping them when they go off track or need help. Scaffolding is helping a student build "opportunities for student-to-student modeling and coaching" (p. 11). Articulating allows the student to apply similar problem solving skills to other tasks or to see things from another student's point of view. Reflecting permits student time to compare their problem solving skills to other students or the instructors. Exploring is when the student solves problems on his or her own; this can be thought of as removing the scaffolding.

In order for students to be successful in an online environment they must be self-regulated learners, have self-efficacy, be motivated, and have the opportunities for deep learning. All of these components are intertwined, in order to have self-regulation the student needs to have self-efficacy, or believe that (s)he can do the task. The student must be motivated to look beyond the surface of learning to develop deep learning skills. According to the literature an instructor can impart these skills to their students they will be successful in an e-learning environment.

Strengthening Online Courses

As stated in the section on how online classes differ from face-to-face classes, some instructors just take their face-to-face courses and place them online. Another issue is some students feel isolated from other students or the instructor. Technology also may hamper the student's progress. These are all issues that should be addressed when online courses are planned out.

Course Planning

There are many ways to design curriculum for online learning. This section will touch

on three different design theories. They all consider the student's skills and characteristics as key components. They all have the student making decisions on the direction of their learning. They also have the instructor scaffolding the students until they are comfortable in the online environment. Lastly, they all feel that the best assessment tool for online learning is performance based.

In an online environment, the role of the instructor switches from instructor controlled to the instructor "in a supportive role as a facilitator" (Conrad & Donaldson, 2004, p. 3). This shift may cause students who are not motivated self-regulated learners to fail. As stated previously, the instructor must teach the students to learn, by helping them to organize information gathered into meaningful knowledge (Livingston & Condie, 2006). "Instructors assist learners in evolving from their traditional role of receiving knowledge to a role that focuses on their generating knowledge for themselves and others" (Conrad & Donaldson, 2004, p. 7). This may be hard for some students to take on this new role of generating knowledge for themselves, but it is a critical role that must be learned in order for student to be successful in an online environment.

Chou and Tsai (2002) have seven stages of curriculum design for web-base learning:

1. Define target students and their needs – careful analysis of the students, not only to identify what they have already learned, i.e. their cognitive, affective, and psychomotor skill levels, as traditional curriculum designers do, but also understand the nature of their computing capabilities and learning environment.
2. Identify instructional objectives – as a result of web-based curriculum a forum in which both instructor and students discuss course direction and progress may shape instructional objectives as the course progresses

3. Select the scope of subject content – in other words, teachers and designers must determine how to develop web curricula that is open, non-fixed and boundless and how to link web resources in such a way that curriculum content is enriched and students' attention is both captured and maintained.
4. Organize sequence and structure – first the curriculum can be divided into five to ten modules. Modules should lead somewhere – horizontally to the next module and/or vertically to a more intensive, advanced or detailed set of modules. Modules should also be able to stand alone. In this way, the combination of individual modules can be systematically organized and interrelated.
5. Select presentation methods and media – teachers and designers, therefore, need to be adept at preparing and organizing content-appropriate presentations in a digital multimedia form.
6. Design assessment activities – teachers and designers must be able to grasp the unique requirement and features of Web technology for implementing and maintaining web-based assessment, and to design effective web-based test and assignments that accurately assess students' learning and provide useful data for further curriculum development.
7. Implement formative evaluation, a critical step in curriculum development, is the process of gathering information to advise design, production and implementation decisions. (p. 625)

Chou and Tsai's (2002) curriculum design discusses breaking the course down into modules. Dr. J. A. Donaldson (2007), stated that while teaching future instructional designers how to teach distance education courses, the course should be broken down into two-week modules.

This gives the student time to go through the required material individually and collaboratively and complete any assignments.

Phases of Engagement

Conrad and Donaldson (2004) have four phases of engagement to help the learner gain more confidence and expertise. The first phase for the learner is one of a "newcomer" (p.11). This is where the instructor provides activities so the students can get to know each other, such as ice breakers. An example of this is an activity where the students have to use one word to describe themselves. It is interesting to see what other students' words are, which starts conversations and a community begins to form.

The next phase is cooperator; this is where the instructor breaks groups into pairs based on the work from the newcomers phase. This newly formed pair will do an assignment such as answer a question for the reading. This activity reduces the threat of addressing a large group (Conrad & Donaldson, 2004).

The next phase is the collaborator. This phase breaks the large group into smaller groups of four to six. It takes about four weeks for students to feel comfortable with the technology and their peers to move into this phase. During this phase the group works on a group project, where each student is responsible for their part of the project (Conrad & Donaldson, 2004).

The last phase is the initiator/partner. This is where the group creates a project then presents it to the rest of the class. Then the presenting group will lead a discussion about the project (Conrad & Donaldson, 2004).

When the course begins, it would be wise to determine the student's technological skills with a skill assessment. This can be as simple as sending an e-mail to the students and

asking if the students know how to use e-mail, chat rooms, how to search the web, and how to upload files. With the results of the assessment a library search can be done to see if the student knows how to do the search and if they don't then the instructor can model the behavior for them. Students can also do a search on the web using Boolean search techniques. The students can also do a scavenger hunt on the web to look for the color of Ben Franklin's eyes (Conrad & Donaldson, 2004).

Once the technology skill level has been established it is time to form the learning community so no "student participating in virtual academic courses may lack the social connection to class member which may lead to a feeling of isolation" (Wilson, Cordry, & King, 2004, p. 20). In phase one of Conrad and Donaldson (2004), the use of icebreakers helps students learn about each other so they start to feel comfortable with each other. There are six questions that need to be asked to determine if an icebreaker is effective:

> Is the activity fun and nonthreatening, is it person-focused not content-focused, does it require learners to read one another's entries, does it require the learner to find something in common with at least 10% of the learning community, does it require a person to be imaginative or express genuine emotions or openness, and are learners required to respond to one another. (p. 47)

Phase two is where Conrad and Donaldson (2004) pair students together. This phase is to get the students to work together and be able to "critique one another tactfully and helpfully" (p. 61). This skill needs to be practiced more in an online environment because conventional visual and audio cues are missing. The paired assignment can be an individual assignment where they both need to do the work to get it completed. The instructor can set guidelines for critiquing the assignment (Conrad & Donaldson, 2004). These are questions

for effective peer partnership activity:

- Is the activity academically oriented?
- Is it content-focused?
- Does it require learners to read one another's entries?
- Does it require that peers express what they agree with or liked about each other's work?
- Does it require that peers express what they would improve in each other's work. (Conrad & Donaldson 2004, p. 61)

This paired phase helps to build students comfort level with group communication by presenting the first assignment together so no student fells isolated.

The next step is to move the pairs into teams for cooperative activities. Some considerations in the formation of the teams are: the time zone of the learners, time that the learners are available to work together, expertise in content, technologies. The team activities should require that all members are active participants in the project (Conrad & Donaldson, 2004). The following is a checklist for effective team activities:

- Do the activities consist of more than just questions and answers?
- Is it content-focused, does it require learners to respond to each other and build on one another's thoughts?
- Does it require team members to demonstrate critical thinking?
- Is the team required to produce a synthesized response or end product?
- Are team members held individually accountable for their contributions to the discussion or project? (Conrad & Donaldson, 2004, p. 62)

The cooperative phase further builds on the comfort level of the students. There is now a

group to work with; where discussion and feedback help to clarify ideas and projects. The students now feel a part of the learning community.

If the instructor takes the students through the four phases that Conrad and Donaldson have outlined, a learning community will be formed, where students will feel comfortable enough to share and ask their peers questions or for help. A learning community must be established for the online environment to be successful.

Assessment

The last key element of online learning is assessment. With online learning the tradition face-to-face assessments are applicable for general knowledge. The most effective assessment of an engaged learning environment are "projects, papers, discussion postings, and student-led discussions – also required additional tools; discussion analysis tools, rubrics, team assessments, and reflective self-assessments" (Conrad & Donaldson, 2004, p. 25). With an engaged learning environment a higher level of thinking and reflection can not be measured with a multiple-choice test.

A rubric "clearly specifies the expectations for the activity and the effort required by the student to achieve a desired score" (Conrad & Donaldson, 2004, p. 27). Rubrics have different levels of effort that determine the points for the given activity. "The creation of a rubric is time consuming but worth the effort because the student and instructor expectations are better met when evaluation criteria are provided at the time a task is assigned" (Conrad & Donaldson, 2004, p. 27). Rubrics allow the students to clearly see what is needed to achieve a desired score.

"In an engaged learning environment, peers often have the best perspective on whether their teammates are providing valuable contributions to the learning community"

(Conrad & Donaldson, 2004, p. 27). With community projects some students may feel that not everyone is doing equal work. However, with a team assessment each student is able to evaluate all members of the team and give constructive feedback about each team member's performance.

Self assessment allows the student to reflect on personal learning. This is done through journaling, where the student documents personal thoughts during the activity. A journal can describe moments where the student makes the connection with what (s)he has Flearned and reflect how it is applied to a real world situation (Conrad & Donaldson, 2004).

As with any assessment, the purpose is to see if the learning objectives have been met. This allows the instructor to see if the strategies have been an effective tool to promote critical thinking. Furthermore, assessments shows if the student was fully engaged in the learning process (Conrad & Donaldson, 2004).

Collaboration

The last design theory that will be discussed is Palloff and Pratt's. Palloff and Pratt (2005) state, "collaboration forms the foundation of a learning community online – it brings students together to support the learning of each member of the group while promoting creativity and critical thinking" (p. xi). Palloff and Pratt (2005) go on to say "collaboration has often been defined as the 'heart and soul' of an online course" (p. 6). According to Palloff and Pratt (2005) everything that students engage in online is collaborative.

Furthermore, Palloff and Pratt (2005) feel that collaboration accomplishes a number of outcomes:

- Assists with a deeper level of knowledge generation – when online classes are developed from a collaborative framework; the central theme is the co-

construction of knowledge and meaning.

- Promotes initiative, creativity, and critical thinking - the ability to collaborate enables the development of the ability of critical thinking, a skill that is more difficult to master individually.
- Allows students to create a shared goal for learning and forms the foundation of a learning community - if students are clear from the beginning of the course that "we're all in this together," then incorporating collaborative activities into the course happens much more easily.
- Addresses all learning styles – when an online course is developed using the concept of learning cycles – a systematic set of activities that build on each other and scaffold learning, collaborative projects, or complex activities that demand that students use multiple skills – all learning styles are tapped.
- Addresses issues of culture – collaborative activities enable students to construct their own knowledge and apply prior experience and their own culturally preferred way of knowing task. (p. 6)

There are many ways that instructors can create collaboration online including: the use of small group activities; asking students to present information to their peers; or participating in a chat room or a threaded discussion.

Palloff and Pratt (2005) maintain that with collaborative learning there is a sense of sharing responsibility. One of the drawbacks of collaborative learning is that some students have had negative experiences where not everyone in the group did his or her fair share of work. There needs to be a contract that is signed by all group members at the beginning of the course that spells out what the group will call itself, how they will communicate, what

day during the week they will begin discussions, how quickly the group will respond to e-mail and postings, what role each member will perform, who will do posting of assignments, and how will the group deal with a member not doing his or her fair share of the work. The contract should be posted so members of the group can go back and familiarize themselves with it when the need arises (Palloff & Pratt, 2005). This contract will help group members deal with a member that is not doing his or her fair share and team initiated steps can be taken to rectify the situation.

Lastly, the issue of assessment in collaborative work must be "embedded in and aligned with the design of the course" (Palloff & Pratt, 2005, p. 41). Pattoff and Pratt suggest that the following should guide assessments in online courses:

- Design learner-centered assessments that include self-assessment.
- Design and include grading rubrics to assess contributions to the discussion as for assignments, projects and the collaboration itself.
- Include collaborative assessment through publicly posting papers along with comments from student to student.
- Encourage students to develop skills in providing feedback by providing guidelines to good feedback and by modeling what is expected.
- Use assessment techniques that fit the context and align with learning objectives.
- Design assessments that are clear, easy to understand, and likely to work in the online environment.
- Ask and incorporate student input into how assessment should be conducted. (Palloff & Pratt, 2005, p. 42)

One form of learner-centered assessment that Palloff and Pratt (2005) recommend is the use

of a portfolio. A portfolio allows the student to showcase her or his work as an individual or a member of a team. The student can take her or his portfolio out into the job market to show the capabilities of the student to do individual or group work. Another form of assessment is the rubric which "provides a realistic picture of how the student interacts with the course material and their peers" Palloff & Pratt, 2005, p. 44). A well developed rubric allows both student and instructor to evaluate their performance. If the rubric is linked to course objectives then the student will end with a clear understanding of their performance in the course (Palloff & Pratt, 2005).

Communication Tools

When a person thinks of an online course the first thing that comes to mind is a technology, but there is more involved in an online course then just a computer. In this day and age while the computer is the foundation to online learning, it is also the tool that enables active learning to take place. In this section the communication tools used to promote online learning will be discussed.

Obviously the computer is a tool used to promote communication in an online environment. However, there are considerations to take into account when designing an online course, such as contingency plans if there is a computer glitch and the system fails. This may be a plan that as simple as calling students and explaining the situation, or as complex as having to send material to the student thorough the postal service or moving the course to another server (Herring & Smaldino, 2005). These are just a few situations that might happen with online courses.

When the computer servers are acting according to plan there are many forms of communication tools to be used. A distinction between asynchronous and synchronous

communication must be made. "Asynchronous communications occurs at varying times" (Conrad & Donaldson, 2004, P. 20). Whereas, "synchronous or real-time communication occurs at the same time for all participants" (Conrad & Donaldson, 2004, p. 20). One of the problems with synchronous communication is that online courses are global and time zones are a problem. However, synchronous communication does help students feel less isolated, it is more like a face-to-face classroom.

Asynchronous communication is the most prevalent form of communication for online courses. That is the main reason why students take online courses. They can do their work at any time. There are many tools to choose from, but once again the tool needs to fit the instruction (Conrad & Donaldson, 2004).

The first form of asynchronous communication being discussed is the DVD or CD that has come with the textbook to be used as an extension to the book. The student is able to access this information at any time. The DVD or CD provides additional examples, simulations, or quizzes that help promote a deeper learning of the content (Conrad & Donaldson, 2004).

Announcements are alerts that let the student know about important information pertaining to the course. This can be a reminder of an upcoming assignment or when information for the next module is going to be posted, which leads into course documents, that are the "video, audio, and text files" (Conrad & Donaldson, 2004, p. 21). The student is able to view a video or listen to a lecture when the time is right for them.

E-mail is one of the most widely used forms of asynchronous communication. A student is able to communicate with other students or the instructor to ask for help or clarification of instructions or just to catch up. E-mail is also a way to transfer files from one

person to the next (Conrad & Donaldson, 2004).

Discussion boards are a very popular communication tool in an online course. This is the area that the students openly discuss the topic at hand. This can be done with a threaded discussion, where one person will pose a question or make a statement about a topic and their peers will comment on the question or statement. There may be a group discussion area set up for the different groups in the class where they are able to work together on their project. This area allows for communication on the project and transfer of files to other members of the group (Conrad & Donaldson, 2004).

There needs to be a way to turn in assignments in an online course. This can be done with e-mail; where the assignment is sent as an attachment. The instructor can set up an assignment drop box that allows the student to upload their assignment for grading. An assignment could be faxed to the instructor or sent through the postal service. The assignment could even be taken to the instructor in person if the student is located in the vicinity (Conrad & Donaldson, 2004).

There are not as many options with synchronous as there are with asynchronous communication. But like their counterpart they also play an important role in online communication. For the students who are more comfortable with face-to-face courses where they have instant feedback, synchronous communication will help them to adjust to an online course (Conrad & Donaldson, 2004).

One tool that is used in synchronous communication is the chat room. Students who have group projects are able to meet once a week and discuss issues they are having with the project. They can also assign tasks at that time because everyone is there and they can all have a say in what is going on. This can also just be a work session where students ask

questions and their peers provide them with feed back. The chat room can be a lecture hall where the instructor presents information and the students are able to ask questions or make comments (Conrad & Donaldson, 2004).

Instant messaging is another form of synchronous communication. This is where a student or student instructor are able to send real-time messages back and forth to one another. This could be used as virtual office hours for the instructor; however students would have to realize that the instructor might have many conversations going at once and they will need to be patient (Conrad & Donaldson, 2004).

The phone is also a form of synchronous communication. Students are able to call each other and ask questions. The instructor may use this form of communication for virtual office hours, where the students call the instructor to ask questions (Conrad & Donaldson, 2004).

The last form of synchronous communication to be discussed is meeting in person. If this option is feasible it can sometimes make the students feel more at ease to initially meet with their group and put a face to a name. This can help the student who is having a hard time making the transition from face-to-face to online instruction (Conrad & Donaldson, 2004).

Lastly, when planning an online course the first thing to keep in mind is to examine "the technologies available… with the focus being on learning as opposed to the technologies that may have been selected for delivery" (Bassoppo-Moyo, 2006, p. 10). Sometimes instructors are told to use certain technology tools to meet the need of the department or institution (Summers, Waigandt, & Whittaker, 2006). "Technology is not nearly as important as other factors, such as learning task, learner characteristics, student motivation,

and the instructor" (Summers, Waigandt, & Whittaker, 2006, p. 234). Care must be given when selecting technology to meet the needs of the curriculum and students.

CONCLUSIONS AND RECOMMENDATIONS

With online courses becoming a reality, there are still many concerns. Concerns include dropout rate for online courses. There is concern that student have the required skills to be successful in an online course. Lastly, steps must be taken to strengthen online courses.

Online courses are twice as likely to have students drop out compared to traditional students. Steps need to be taken to ensure that traditional and non-traditional students are both equally ready to succeed in an online course. There needs to be concessions for students who are employed full-time so they are more likely to complete online courses. Lastly, all students should have to take some prerequisite classes before they are able to start an online course. This way if they are not ready for online courses then they will be given the skills needed to be productive in an online environment.

Furthermore, the skills necessary to be successful in an online setting are self-regulation, self-efficacy, motivation, and depth of learning. An online student must be an active participant in his or her own learning. A student needs to learn how to learn and believe (s)he is capable to learn or complete the given task. Motivation and self-regulation are important for online students because they don't have the deadlines of coming to class and turning in assignment or taking test. They have to make themselves stay on track and get their assignments done on time.

Additionally, when developing an online course it is important that a learning community is established so no student feels isolated. The students need to get to know one another before they can feel comfortable working collaboratively. It is important that the students are able to work together because collaboration is the foundation of an effective learning community.

Student assessment is a factor that needs to address the critical learning that takes place in online courses. This can be accomplished with peer-assessment, self-assessment, portfolios, or rubrics. As with any assessment, the purpose is to make sure the learning objectives have been met.

Lastly, the selection of learning tools must promote the learning. The tools should not drive the curriculum; the curriculum should drive the tools. Whether it is synchronous or asynchronous it must fit the learning that needs to take place.

There need to be further studies to determine why males are not as successful in an online environment. There is a need for more research as to what can be done in the K-12 setting to make the transition easier to an online environment in post secondary school. I would like to see more research on how to teach K-12 students self-regulation so they are better able to excel in an online environment.

The literature reviewed indicated that the dropout rate of online courses will decrease if students are prepared to enter this environment with the skills needed to be successful. If online courses are designed to support collaboration and communities students will feel safe to actively participate in the learning process. The technology selected to use must support the curriculum and students. If everything mentioned above is incorporated into an online course the student success in an online environment will soar.

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