


Retention in Online Courses: Exploring Issues and Solutions—A Literature Review

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Abstract

Despite increasing enrollment percentages from earlier years, online courses continue to show receding student retention rates. To reduce attrition and ensure continual growth in online courses, it is important to continue to review current and updated literature to understand the changing behaviors of online learners and faculty in the 21st century and examine how they fit together as a cohesive educational unit. This article reviews literature to ascertain critical reasons for high attrition rates in online classes, as well as explore solutions to boost retention rates. This will help create a starting point and foundation for a more, in-depth research and analysis of retention issues in online courses. Examining these issues is critical to contemporary learning environments.

Keywords

online courses, student retention models, social and motivational issues, technology in online courses, online learners and faculty, computer-mediated communications, online course design

Online courses are a revolutionary trend of educational technology today. With the rapid rise in online course enrollment comes a growing concern for low retention rates in many online courses and programs. Heyman (2010) points out that one of the biggest concerns in online education emanates from the excessively high attrition rates in fully online programs compared with traditional classes. Online courses have a 10% to 20% higher failed retention rate than traditional classroom environments (Herbert, 2006). Totally, 40% to 80% online students drop out of online classes (B. Smith, 2010). Review of existing literature indicates that online courses have several social, technological, and motivational issues existing from both the learners' and the faculty's perspectives.

The Importance of Studying Retention Issues in Online Courses

The online delivery system has revolutionized educational technology and has provided easy access to learning for multitudes of students, including many who were unable to go to school prior to this revolution. Today, online education is one of the top industries in the world, providing support, knowledge, and jobs to a large segment of the world's population. Allen and Seaman (2011) report that more than 6 million students were taking at least one online course in the year 2010 and that there is a steady 10% growth in online course enrollments. Online learning is also becoming an integral part of corporate training. Organizations that utilize this platform

have better chances at business and financial gains, as it provides a positive impact on workplace motivation. Access to electronic data and a self-paced learning environment may increase the interest and value of on-the-job training (Overton, 2007).

Despite all these benefits, online classes continue to display serious retention issues, which need to be addressed. A good place to start this is by examining why online learners leave, when in their academic careers are they most prone to leave, and what can be done to eliminate or mitigate these causes. Literature reviews indicate that the online attrition pattern is not limited to any specific period or level of graduation. Students may withdraw from online classes anytime in the semester and at any level of their learning process. Several studies have been conducted specifically to observe when and why students withdraw from graduate programs. The study conducted by Perry, Boman, Care, Edwards, and Park (2008) indicated that out of a group of 113 students who had withdrawn from the graduate program, 17 had been accepted, but they did not begin any class work prior to withdrawing. The balance consisted of students who had been registered and had started attending their classes, and yet decided to drop the program. These students stayed in the

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program anywhere between 2 months and 2 years. Willging and Johnson's (2009) study indicated that although students were less likely to leave after investing in several semesters, there was no dominant reason for dropping out. Most students dropped out of a program due to personal, job-related, and program-related reasons. Perry et al. (2008) mention the Canadian Association of Graduate Schools Report of 2004, which indicates that withdrawals from programs may occur even after several semesters.

Jaggars (2011) refers to several research reviews indicating that the mid-semester withdrawal rates for online courses may be higher than face-to-face courses. Levy's (2007) study indicates that students at a lower learning level at college are at a higher risk of dropping out than upper level students. Students who are less experienced and at an earlier semester of their program are more likely to drop the program. Levy indicated that students who are in the early stages of their program feel less prepared to deal with the academic rigors. On the contrary, students who have spent longer time in the program may be more motivated to complete the course, because they have already invested considerable time and efforts on it. The input in time and effort is a critical determinant as to when a student is more likely to withdraw.

The fact that students are liable to withdraw at any given stage makes it even more crucial to explore ways and means to mitigate the underlining causes of this phenomenon. Stanford-Bowers (2008) points out that a fall in online attrition rates will benefit students, faculty, and institutions. They believe that this can be accomplished if all those who have a vested interest in online learning recognize the significance of this new trend in the educational industry and examine every aspect of this revolutionary learning medium (Stanford-Bowers, 2008).

Theoretical Backgrounds for Examining Online Learners

A synthesis of literature information pertaining to retention issues and solutions for online environments must begin with a discussion of the theoretical concepts that determine the contexts within which online learning environments and learners are placed. There are several sociological theories, which explain learner behaviors in an online context. These, in turn, can become predictors and precursors of issues and solutions pertaining to online environments. Theories of marginalization or social exclusion have been used in literature to explain decisions of learners to select or reject the online platform. Ball, Davies, David, and Reay (2002) discuss how "the perceptions and choices of prospective HE (higher education) students are constructed within a complex interplay of social factors that are underpinned by basic social class and ethnic differences" (p. 53). Based on their study, Ball et al. determined that learners used cognitive and social criteria to determine their choices.

For the social criteria, the determining factors are the learners' perceptions of social classification of self and institutions. Many times, learners gravitate toward online environments as it provides them with the perceived benefits of "virtual" anonymity and protection from being at the receiving end of discriminatory behavior. However, in the context of marginalization issues, although online environments can provide some protection, under certain circumstances, this environment can become the issue. D. Smith and Ayers (2006) discuss such implications through the lens of community colleges. Their examination points to the critical issue of the prevalence of Westernized curriculum within the United States that places marginalized learners in a situation where "the pro-Western bias inherent in the technological foundations of distance learning presents an obstacle both to access and to understanding" (D. Smith & Ayers, 2006, p. 402). Nuances of cross-cultural communication, coupled with technological impediments, can create untenable learning environments, leading to attrition. "... when discourses are intricately nuanced with specific cultural meanings, such meanings may be 'lost in translation' as they are converted to Western-dominated electronic media" (D. Smith & Ayers, 2006, p. 406). Thus, although technology can be considered neutral, there is always the danger of its hegemonic contamination.

Motivational theories of self-determination and self-efficacy are also pertinent to examining learners within online environments. Self-determination is defined as action generated by one's own mind or free will, with no influence from outside situations or entities (Wehmeyer, Abery, Mitaug, & Stancliff, 2003). Chen and Jang (2010) discuss how in the context of online learners, self-determination theory prescribes three needs, namely, a sense of control, feelings of competency for tasks, and sense of inclusion or affiliation with others. Just as the satisfaction of these needs fosters better performance, the absence may actually produce highly negative results. While examining a model of online learner motivation based on Deci and Ryan's (1985) self-determination theory, Chen and Jang demonstrated the direct correlation between contextual support by teachers, need satisfaction of students, motivation, and performance. They concluded that online learners have different reasons to participate in class, including their perceptions of how the three needs of self-determination are met or unmet. Learners belonging to marginalized groups will need special consideration if these needs are to be satisfied, which means teachers need to be cognizant of the student backgrounds and design their contextual support strategies accordingly. In fact, the study suggested, "haphazard and aimless supports without addressing students' needs are likely to lead to adverse—even worse than 'no effects'—outcomes" (Chen & Jang, 2010, p. 750).

Unfortunately, the online environments may include culturally unaware faculty who are rapidly being thrown into a situation that they were not historically prepared to face. Although the globalization of education is a relatively new

trend, it has escalated exponentially within this decade. This has given birth to a situation wherein many faculty and instructors have had little to no time to increase their own cultural awareness, at least not to the extent required by the cultural rigors of this evolving situation. Due to education globalization, this issue is becoming increasingly pronounced, as more and more foreign students seek to enroll themselves in courses offered by the United States and Europe, attracted by the perceived value that credits and degrees from such courses/institutions may provide for them. In the majority of the cases, such learners enroll in courses led by faculty who may have little to no exposure to the international community (Stewart, 2012). Despite having the best intentions, the lack of cross-cultural interaction also creates a lack of empathy for one another on part of both students and faculty alike (Gelb, 2012; Ruggs & Hebl, 2012). Thus, positive or negative self-determination situations nestled within online environments will affect the retention of online learners.

Proponents of socio-cognitive views and models (Bandura, 1986; Zimmerman & Schunk, 1989) describe how self-efficacy beliefs of learners determine their abilities to persist and self-regulate. Shea and Bidjerano (2010) studied the Community of Inquiry model as proposed by Garrison, Anderson, and Archer (2000), and concluded that human, face to face, interaction may have a more positive effect on learners' self-efficacy beliefs. They indicated that "This result provides support for the assumption that the absence of traditional and familiar classroom conventions may result in additional uncertainty for fully online students" (p. 1727) and sought to argue in favor of the need "to pay more attention to supporting the relationship between teaching presence and self-efficacy in fully online environments" (p. 1727). Thus, they supported blended environments as opposed to fully online ones. The fact remains that not all online programs can afford to provide "live" student-teacher interaction, which means that the underpinning issues of learner demotivation remain at large in fully online environments.

Constructivism and andragogy are closely related concepts and a huge factor in determining the content, structure, and climate of online learning environments. Chu and Tsai (2009) studied the factors that influence adult learners to select online programs/courses. They concluded that even though adult learners have concerns about their Internet efficacies, they find the constructivist approach of self-directed learning prevalent in online environments very attractive. However, this preference may not be enough to sustain such learners within the online environments, given their lower educational technology and Internet usage skills. Most of these learners belong to the "digital immigrant" group (Prensky, 2001), and although they could be technology users for personal things, they may not be equally well informed when it comes to using educational technology. Thus, online educators and course designers have a greater responsibility to give enough time to adult learners to practice online

activities to increase confidence, design content that the learners can connect to their everyday lives, and provide resources to allow the learners to construct their own knowledge of pedagogy and technology (Chu & Tasi, 2009). In the absence of such comprehensive teaching and designing approaches, it is very likely that adult learners may not prevail within an online environment.

Cognitivism and related theories are critical to understanding online education, particularly when viewed through the lens of globalized content creation and management, as is required in many online learning programs that have international students. Silva, Costa, Rogerson, and Prior (2009) conducted a meta-analysis of different learning theories to define knowledge and content with respect to different pedagogical approaches. When defining the boundaries of knowledge with relationship to online learning environments, they state that cognitive appropriation is key to justifiable knowledge. Budin (2008) discussed the significance of content as being culture-bound, meaning that the users of content may come from widely diverse populations. Hence, the process of content management must include a justifiable consideration for cultural factors with respect to content design.

Siemens's (2014) theory of "Connectivism" provides a new spin on traditional learning theories, by addressing the technological and digital aspects of learning. Traditional theories rely on the belief that learning takes place within people and that it is a social process. Siemens argues that learning also occurs outside of people, within the realms of technology and organizations as individual entities. His belief is that given the importance of technology in the learning environs, the focus of discussion and analysis must shift from the actual process of learning to understanding the value that any learning can bring. Siemens defines learning as "actionable knowledge" (p. 5) that can exist outside the realm of human cognition, within organizations and databases. Being able to make connections within and between specialized information that enables us to learn more "are more important than our current state of knowing" (p. 5). In this context, Connectivism is "The ability to draw distinctions between important and unimportant information . . . The ability to recognize when new information alters the landscape based on decisions made yesterday" (p. 5). This line of thought highlights new paradigms and possibly new challenges, which must be taken into cognizance when analyzing online environments.

Examining High Attrition Rates in Online Environments

Misconceptions Relating to Cognitive Load

Online learning may sometimes be a completely new platform for learners, but learners still choose it using several different criteria and assumptions. Common assumptions related to online learning are that because face-to-face presence is

not required, an online platform will be less demanding on time, will require less effort to manage workload, and will not disrupt the learners' lifestyle. Schaarsmith (2012) indicates that some of the reasons students have for joining online courses is related to financial factors, such as saving money on transportation, and the ability to continue working while pursuing a degree. Shay and Rees's (2004) research data indicate something similar. When asked about the most important reasons for choosing online classes, students indicated that they chose online courses based on considerations such as convenience, flexibility, opportunity to fuse their current lifestyles to their desire to study, availability of programs, and affordability (Shay & Rees, 2004).

Although most of these reasons could be valid and viable, they are also indicative that learners do not consider the magnitude of workload and the required depth of their involvement in the online courses as reasonable criteria to make the decision to go online. As a result, when they attend the online classes, many of them are unpleasantly surprised to find that the conveniences of flexible hours and lower cost outweigh the inconveniences of excessive demands on lifestyles, technical issues, and concerns related to the attitude and aptitude of learners toward a new platform. Online learning environment is very largely self-driven and dependent on the learners' ability to manage academic responsibilities, with fewer props than those available in face-to-face classes. If learners have not experienced this kind of self-imposed academic discipline before, they are very likely to experience demotivation, forcing them to quit. Another factor in this equation is that many online classes follow constructivist models of teaching, wherein learners are given props and aids to learn, but are left to solve complex problems on their own. If learners are not comfortable with self-learning and constructing knowledge out of their own initiatives, the online environment can become intimidating for them.

Spiro, Coulson, Feltovich, and Anderson (1988) researched the issues and impediments related to "advanced knowledge acquisition in ill-structured domains" (p. 2). While discussing their cognitive flexibility theory, they refer to the need for the learner to "attain a deeper understanding of content material, reason with it, and apply it flexibly in diverse contexts" (p. 2). Driscoll (2005) takes cue from this concept when she discusses how "errors of oversimplification, overgeneralization, and overreliance on context-independent representations" can occur when learners attempt to understand "ill-structured domains," by applying the same information they had used to understand "well-structured domains" (p. 398). When learners use their experiences from the well-structured domains of face-to-face courses as benchmarks for online classes, they may perceive the online environment as ill structured. A review of literature indicates that these misconceptions related to the cognitive loads or overloads may significantly contribute to higher attrition rates. Paas, Renkl, and Sweller (2004) refer to the concept of cognitive load as a situation where learners are intimidated by a large amount of information that

needs to be processed all at once before real learning can begin. Their study discusses the importance of "managing working memory load in order to facilitate the changes in long-term memory associated with schema construction and automation" (Paas et al., 2004, p. 2).

When learners are not familiar with the online educational delivery system, they are more apt to be frustrated with the disparities existing between the long-term memories of their face-to-face course associations and the new realities of online learning that they are forced to face. McQuaid (2009) analyzed the effects of cognitive load on online learners and discussed how important it is for learners to adapt to the online learning environment for meaningful learning to take place, as well as the critical need for instructional designers to adapt to the learners' assumptions about their ability to complete a course.

Another thing to consider is the fact that online courses allow for less student-teacher interaction, as opposed to face-to-face. Even though multiple communication options are available in online setups, they may not be used as extensively as they should be, simply because the usage is largely dependent on the learners' own initiatives. Consequently, online learners tend to communicate with their instructors more to get help with a problem and less to take actual guidance to facilitate their learning. As a result, the online environment can become less guidance-oriented, which in turn may be non-conducive to retention. Kirschner, Sweller, and Clark (2006) indicate that

the free exploration of a highly complex environment may generate a heavy working memory load that is detrimental to learning. This suggestion is particularly important in the case of novice learners, who lack proper schemas to integrate the new information with their prior knowledge. (p. 80)

Ongoing research also lends support to the fact that cognitive load may be closely related to student satisfaction with online courses. Bradford's (2011) research using his Factor Correlation Matrix and the Principal Components Analysis indicates that there are significant connections between cognitive load and satisfaction and that "approximately 25% of the variance in student satisfaction with learning online can be explained by cognitive load" (p. 217).

Social and Family Factors

The reasons for high attrition rates in online classes could be a combination of social factors, as well as the attitude, aptitude, and motivational threshold of the students. Family commitment and social obligations of the student could be contributing factors in low retention. Evans (2009) discusses how students indicate obligations to their families as a primary and recurring reason for why they drop an online course. Other key studies in this field, for example, the works of Tinto and Summers, indicate the involvement of social

factors in retention, and although these authors discussed retention in traditional classrooms, some of the things they propounded may hold true for e-learning as well. For example, Summers (2003) discussed the retention issues in relation to community college students and observed that students who had value orientations that were different from the norm were not able to interact socially with their peers. As a result, such students felt incompatible with the institution's social system and were more likely to drop out. Tinto (2006-2007) emphasized the need to understand the role family and society plays so that it helps institutions to create better and more effective support programs for students with diverse situations and backgrounds.

A turning point in the retention research came with Alfred Rovai's (2003) discussion of the Composite Persistence model, which was designed to gauge factors affecting retention for online students. This model discusses several factors affecting retention, both prior to admission and after, and includes social integration and family responsibilities as applicable factors in the retention equation.

Motivational Factors

Motivational aspects can also cause high attrition rates in online classes. Because online courses are heavily self-directed and self-learned, motivation or lack thereof can be a deciding factor in attrition. Erin Heyman (2010) indicates that motivation and accountability are closely related to student retention in online programs. Motivation in online courses can be directly linked to the overall course design, as well as the students' own aptitude and attitude toward learning and technology. Studies reveal that several factors such as the time needed to complete modules, lack of real world issues and contexts in course materials, and problems with accessibility and availability of resources and support systems create motivational constraints (Smart & Cappell, 2006).

Technological Constraints and the Digital Natives

Prensky (2001) refers to the term "digital natives" to describe learners who may be familiar with popular technology but are not conformable with educational technology. Several studies support this idea and indicate that student satisfaction related to the overall course design is a key concern and determinant in student retention. Weber and Farmer (2012) indicate that students consider satisfaction regarding course delivery as a major cause of continuing or withdrawing in online classes. Another issue relates to the technical expertise of the students in relation to the course design. Although this generation of students may have technical knowledge relating to social media and digital entertainment options such as video games, these skills may not be enough to be successful in an online course. A key flaw when assessing student compatibilities with technology is crediting them with more capabilities than they actually possess in relation

to the online course materials. Overestimating the technology readiness of online students is a mistake (Clark-Ibanez & Scott, 2008). Prensky's research leading to the coining of the phrase "digital natives" to describe learners who live a highly digitized life, surrounded by technology, is critical to understanding the important role this factor plays in e-learning attrition. A key reason for high attrition rates in online courses is related to ineffective course designs that are created based on assumptions about the online learner, which may or may not be true. One such assumption is that if a student is "tech savvy" and is familiar with mobile and/or social media technology, he or she is a perfect fit for online learning. Ng's (2012) study reveals key aspects of this issue and discusses it from a solution point of view, rather than just articulating the problem. Ng contends that the digital natives, who can also be the online learners, prefer to be online for everything including accessing information, getting entertainment, and socializing. They prefer quick delivery and exchange of information, like to multi-task, and respond better to graphics instead of text. The article examines the argument that although such learners can use technology, they do not possess skills required to use them for learning. In essence, a large segment of today's online learners know how to use technology and are familiar with the digital environment; however, it does not necessarily mean that they are equally conversant with educational technology and e-learning environments as envisioned by institutions that offer online courses and programs. The article describes educational technology as the use of materials and processes to facilitate teaching and learning. Such educational technologies could be related to formal and/or informal learning, for example, an online course or self-learning by surfing the Internet. Although almost all participants in the study were familiar and comfortable with sites such as Facebook and YouTube, they were far less conversant with the usage of teaching/learning technologies such as wikis, blogs, Google Docs, Movie Maker, and Photoshop, to name a few. Almost none of them was familiar with widely used educational technologies such as Prezi or VoiceThread. They were also unfamiliar with concepts of ePortfolio or cloud computing (Ng, 2012). Therefore, it is quite possible that students of online classes often experience computer-related issues, especially at the beginning of the semester, and probably during the course of the semester, if they choose to continue in the class. This causes many of them to drop the course well before they get the opportunity to become comfortable in the courses' cyber zones and also after they have made it several weeks into the semester.

Lack of Instructor Understanding of Online Learners

It is not only the learners but also the instructors and course designers who face similar challenges relating to interaction in online classes. Many times, the individual perceptions of

the students and the teachers are dramatically different, resulting in overall poorly designed courses that are confusing and dissatisfying for the learners. To do a good job of designing online courses, instructional designers need to understand how an online learner perceives things. Available literature suggests that online instructors find it increasingly challenging to maintain a cohesive learning atmosphere in the class compared with face-to-face classes. Muirhead (2004) points out that online instructors feel challenged to create collaborative learning atmospheres that generate true and meaningful learning. Many times, this difference in perception results in a certain amount of apathy on the instructors' part to recognize student emotions and feelings. Tallent-Runnels et al. (2006) indicate that research results point to the need to create more student-compliant courses. For example, instructors should be more cognizant of the psychological aspects of student reactions as revealed in the student responses to discussions. Knowing why students react the way they do can provide an insight into modulating discussions and other collaborative avenues to make courses more flexible and learner friendly.

Faculty Limitations of Using Technology: The Digital Immigrant Issues

Prensky (2001) refers to the term "digital immigrants" to describe instructors who are unable to keep up or understand the language of the digital native community, stating that "our Digital Immigrant instructors, who speak an outdated language (that of the pre-digital age), are struggling to teach a population that speaks an entirely new language" (p. 2). Ng (2012) makes similar assertions when she points out that educators are responsible for raising awareness of educational technologies in digital natives, so that they can be used to facilitate the digital natives' formal learning. This is exemplified by comparing how children need to be introduced and taught to speak languages or use appliances to facilitate their informal learning. She further contends that digital natives are less likely to self-explore or look to use educational technology, unless they are formally introduced to them.

Based on the results of her study, Ng (2012) inferred the need for educators to be aware of the benefits and possibilities that various technological tools provide for teachers' training and students' learning. Digital natives, although familiar with technology and Internet, may have severe limitations in understanding how technology could support their learning. Therefore, they need constant guidance from their teachers until they become familiar with the educational technologies (Ng, 2012). However, this need for the technical "savviness" of educators is not being met, because the instructors who are teaching online courses are not technically literate to the extent required. Prensky (2001) also points out those digital immigrant instructors have incorrect assumptions that today's online learners are no different from what learners have been in the past, and that the teaching methods that were

successful yesterday will be effective today. As a result, there is a marked dissatisfaction among online learners regarding the lack of technical knowledge of their instructors. The new generation of e-learners is "networked most or all of their lives" and possesses "little patience for lectures, step-by-step logic, and 'tell-test' instruction. Unfortunately, for our Digital Immigrant teachers, the people sitting in their classes grew up on the 'twitch speed' of video games and MTV" (Prensky, 2001, p. 3).

The key contributing factor for this is the paucity of technical resources and expertise available to online faculty and course designers. Liu, Gibby, Quiros, and Demps (2002) highlight the challenges faculty face when trying to keep pace with the ever emerging and rapidly evolving technologies that are necessary to create effective online course designs. They point out that although instructional design courses make students well conversant with the theoretical aspects of the subject, they do not provide the expertise and knowledge required for practical applications of technologies. Another key factor leading to ineffective online course designs is the level of confidence and comfort that the faculty have with respect to online classes and using technology in the classroom. The results of a case study by Osika, Johnson, and Buteau (2009) show that this could be due to a combination of factors such as the faculty's belief that online courses are not equal to face to face with respect to learning quality. Many faculty do not subscribe to the concept of online course delivery as a full-time medium of instruction. A large number of faculty from the study group expressed concern over the lack of support they receive from the institution, indicating that this was a major factor that made online courses unattractive to faculty. Young (2004) refers to a national survey released in 2004 by the Educause Center for Applied Research that reveals that students were very dissatisfied with the way instructors used, or did not use, technology. Young reports that students complained that sometimes professors perform poorly, because of technology, indicating that such professors are better off when they use the chalkboard.

Institution Limitations to Training Faculty

One of the prime reasons for lack of good faculty input in online courses is the lack of drive of educational institutions to create good training programs for their faculty. The emphasis is more on developing and deploying online courses rapidly to increase enrollment, rather than create a body of well-trained faculty to boost retention. Young (2004) points out that although colleges spend top dollars for adding technological components in classrooms, far fewer resources are devoted to train professors to use these technologies. Another key reason that institutions and organizations should spend more time, money, and effort on training faculty is the changing expectations for online courses and course designs that involve the use of many different media and technologies

to deliver course content. In their report, Liu et al. (2002) compare the process of instructional designing today with a movie production or conducting a symphony. The authors discuss how instructional designers like to use different media to create a harmonious blend of technology and learning to incite the attention of the students, just as movie directors or symphony conductors do when they try to attract their patrons and viewers (Liu et al., 2002). The modern trends in the changing attitudes and aptitudes in education technology create a need for better trained faculty. As the existing literature review indicates, several factors relating to online course design can cause high attrition rates in online classes. Keeping these factors in mind while designing online courses may help regain and retain students.

Some Solutions to Improve the Online Course Experience

Make Orientation Programs Mandatory

One of the biggest deterrents to online retention is the overestimation of student capabilities with respect to the demands of time, commitment, and technological skills required in online learning. One way to deal with this is through orientation programs that introduce students to the rigors and unique demands of the online classes. However, that in itself can be a challenge. Studies conducted by Bozarth, Chapman, and LaMonica (2004) reveal the need for designers and facilitators to understand that students' own perceptions or misconceptions of their technological skills becomes the biggest challenge as it makes students feel that an online orientation program is not required. As a result, many students show resistance to what they perceive as unnecessary intervention to their course penetration. Instead of feeling frustrated with this attitude, instructors and institutions must think about strategies that will enforce orientation, rather than make it obligatory. Instructors should also evaluate their own technological, communication, and facilitation skills and attempt to update them if necessary.

Using "Live" Interaction and Transparency in Computer Mediated Communication (CMC)

As indicated by the literature reviews above, social factors play a significant part in determining student retention. There is already a preexisting prejudice against online courses relating to the level of interaction between students and teachers. According to Roblyer and Ekhaml (2000), several studies indicate that students and faculty alike have huge doubts regarding the depth of interaction possible in an online environment. This creates a serious discomfort in the minds of learners and educators when it comes to embracing online delivery systems. Literature reviews also support that enhancing the social culture of an online class goes a long way in allowing students to continue with their e-learning and complete their education.

Dow (2008) provides insight as to how designing online courses to foster effective dialogue, ease of the use of media tools, well-structured interactions, and transparency of CMC helped create a better learning environment. Dow's study reveals that not having a "live" component in the interactions was very detrimental to the online learning atmosphere. He lists several areas of concern in this regard such as the absence of live conversations, not having any visible identifiers such as photos of teachers and peers, and a general frustration about the time gaps between communications. Students feel uncomfortable when they are unable to see the people they are conversing with, which in turn hinders how they may gauge the feelings of their peers online. Consequently, online courses should be designed to foster more social interaction between peers and students-teachers.

Creating Classes Structured for Collaborative Learning

In the study conducted by Dow (2008), participants indicated how difficult it was to gauge social presence of their peers and instructors, in the absence of any cohesive working structure and continued interactions. Another research conducted by Moallem (2003) studied the impact of applying an interactive design model for creating an online course that was more structured for collaborative activities, and consequently more amenable to online learning. When applying this model, emphasis was placed on collaborative problem-solving tasks, individual accountability, encouraging commitment to group and its goals, facilitating communication between group members, and providing stability so that group members could work productively together for longer period. The results of Moallem's study indicated that having cohesive and structured tasks, as well as an intuitive design model, might influence positive interactivity and interaction among students in an online course. Muirhead (2004) recommends that instructors develop strategies that will enhance their guidance for the students, such as creating a timeline for feedback and having a specific feedback rubric. This may mitigate the struggle instructors face when trying to establish a meaningful presence in their online classes. This may also facilitate the instructors' own discovery and experiments to develop strategies for a seamless collaboration with and between the students.

Enhancing Faculty Training and Support

Literature supports the importance faculty training has in online course design and overall retention. Kate (2009) discusses the need to focus more on re-training professors who are taking a huge leap when shifting from face to face to an online environment. Simply having 'good teaching' as part of an institution's mission is not enough, unless it is complemented by having support infrastructures for the faculty. Only then can an institution be able to provide effective online course delivery. Even when an institution claims excellence in

teaching as its core value, it does not necessarily mean that the institution has appropriate support structures for the teachers. Kate also highlights the importance of including discussions about training faculty whenever institutions discuss educational excellence and quality. Levine and Sun (2002) highlight the connection between effective course design and faculty training when they discuss how faculty training and course designing are connected, and how these in turn are critical to students. They show concern over the fact that many times faculty do not receive formal training, which they believe is required to create good learning environments in their online classes.

The literature reveals instances of unique and successful solutions to faculty training and support. One such success story is that of University of Illinois where administrators gave faculty a full semester off before teaching online classes, so that faculty could use that time to train and prepare for a smoother transition from face to face to an online environment (Kate, 2009). Another example is that of San Jose State University, where a grant received was used to create a 2-week program that successfully trained instructors using one on one training by professional instructional designers (Kate, 2009). As supported by research, it is possible that faculty will perform better as far as online course design modification and teaching are concerned if some form of training takes place before a faculty teaches an online course for the first time. In a quantitative study, Julie Ray (2009) concluded that training instructors prior to their starting to teach online courses resulted in better preparation for the classes. Similarly, Ray refers to a study of pharmacy instructors that showed how only 3 hr of training resulted in a significant increase in instructors' perceived ability to instruct online. Ray concluded that no matter what and how the training is imparted, it always has a positive influence on the instructor's ability to teach online.

Synthesis of Literature Used

The article provided a synthesis of literature to analyze online learning environments and learners with the intention of highlighting retention issues and recommending solutions. The high attrition rate in online courses is a cause for concern (Herbert, 2006; Heyman, 2010; B. Smith, 2010). This phenomenon needs to be studied in light of the growing demand for online programs in academic and corporate settings, and the fact that a fall in attrition rates will benefit students, institutions, and businesses (Allen & Seaman, 2011; Overton, 2007; Stanford-Bowers, 2008). Several studies have been conducted specifically to observe when and why students withdraw from graduate programs (Jaggars, 2011; Levy, 2007; Perry et al., 2008; Willging & Johnson, 2009). The results of these indicate that students were more apt to drop out during earlier stages of the semester, and there are multiple reasons for doing this including personal preferences, profession-related, and program-related issues.

Learning theories such as social exclusion, self-determination, self-efficacy, cognitivism, constructivism, and connectivism can provide a deeper insight into the workings of online learning environments, including learners, instructors, and course contents (Bandura, 1986; Budin, 2008; Chen & Jang, 2010; Chu & Tasi, 2009; Deci & Ryan, 1985; Gelb, 2012; Ruggs & Hebl, 2012; Shea & Bidjerano, 2010; Siemens, 2014; Silva et al., 2009; D. Smith & Ayers, 2006; Stewart, 2012; Wehmeyer et al., 2003; Zimmerman & Schunk, 1989).

Several critical factors lead to high attrition rates in online environments. One of them is the misconceptions learners have about the workload, cognitive challenges, and general expectations. Learners may select online classes for personal reasons, without recognizing that they may have issues with their entry-level skills pertaining to the subject or technology being used in online classes. This could place novice-level learners, who are used to the structured forms of face-to-face courses, in the fluid, ill-structured domains of online environments, leading to demotivation and attrition (Bradford, 2011; Driscoll, 2005; Kirschner et al., 2006; McQuaid, 2009; Paas et al., 2004; Schaarsmith, 2012; Shay & Rees, 2004; Spiro et al., 1988).

Family commitment and social obligations of students could be contributing factors in low retention. In addition, students without the norm value orientations may be unable to interact socially with their peers. As a result, such students felt incompatible with the institution's social system and were more likely to drop out (Evans, 2009; Rovai, 2003; Summers, 2003; Tinto, 2006-2007). The constructivist and self-oriented nature of online learning can create issues of motivation, particularly for learners with technological skill limitations. The assumptions of online course designers and educators about the technological compatibility of the digital native learners can lead to issues with course designs. These factors have been known to accelerate attrition rates (Clark-Ibanez & Scott, 2008; Heyman, 2010; Ng, 2012; Prensky, 2001; Smart & Cappell, 2006; Weber & Farmer, 2010).

In addition, the profiles, attitudes, and aptitudes of online faculty could become issues for online learning environments. Research indicates that a large number of online faculty have a low level of understanding of the way online learners learn. Many times, face-to-face faculty are invited to teach or design online courses, with minimal or zero exposure to the pedagogical aspects of online environments. Consequently, they may work under the erroneous assumption that what works for on-ground will work equally well for online. Some of the challenges such faculty face are developing and sustaining interactive and dynamic collaborative climates in their online classes, adjusting their own gaps in technology skills, and falling prey to their inherent prejudice against the perceived lack of value of online classes versus face to face ones. The paucity of training and professional development opportunities compound the problems (Liu et al., 2002; Muirhead, 2004; Ng, 2012; Osika et al.,

2009; Prensky, 2001; Tallent-Runnels et al., 2006; Young, 2004).

Given the magnitude and depth of the issues, researchers have looked for viable solutions. Rigorous orientation programs can help online learners become better prepared for their academic journeys online. Faculty should also evaluate their own technological, communication and facilitation skills and attempt to update them as and when needed so that they can create a more transparent and collaborative online learning environment within their classes and be effective guides of technology for their students. Institutions must find ways to enhance faculty training for online teaching. Using such simple measures can greatly help contain attrition and increase retention rates in online classes/programs (Bozarth et al., 2004; Dow, 2008; Kate, 2009; Levine & Sun, 2002; Moallem, 2003; Ray, 2009; Roblyer & Ekhaml, 2000).

Implications for Future Research

As a survey and review of literature reveals, the causes of poor retention in online courses are many, and although there has been some headway in the area of providing viable solutions to this issue, much deeper and wider studies are required to develop a better understanding of ways and means to solve online course issues and improve online classes and course designs to facilitate and benefit both learners and educators. The most desired outcome of such research should be to help boost retention. At present, there are many emerging trends in the world of e-learning that presents different avenues for future research such as Rovai's (2003) Composite Persistence model or Bradford's (2011) concept of Factor Correlation Matrix and the Principal Components Analysis. However, models and concepts such as these need to be examined in the light of more real world context using larger participant groups. Faculty and institutional involvement, as well as the importance of creating more interactive and better-designed online course content in the retention equation, must also be studied. This article is a small beginning toward a larger and broader scaled research in this field.

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