

Anxiety in Online Learning: Is there a Trend?

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**Abstract**

Review of 20 research articles spanning approximately 20 years showed research on anxiety in online students. Several themes thought to correlate with anxiety were uncovered in these studies. The intent of this paper was to examine the research to determine which themes recur and if they change over time. Examples of the themes uncovered in these articles included: technology, gender, computer mediated interaction (CMI), home life, communication, group projects, transactional distance, testing, and isolation.

*Keywords:* anxiety, themes, online learning, triggers

### Anxiety in Online Learning: Is there a Trend?

A 2013 survey administered by Babson Survey Research Group entitled *Grade Change: Tracking Online Education in the United States* (Allen & Seaman, 2013) indicated a new record enrollment in distance learning courses in the fall of 2012. The number of students enrolled in distance learning courses increased by 412,000 students from the previous fall. Although this represented the smallest increase in enrollment over the past five years, a record total 7.1 million students were enrolled in at least one online course in the United States at that time. (Allen & Seaman, 2013).

Online learners derive from various cultures, incomes, and educational backgrounds (Dabbagh, 2007). Individuals choose online learning for various reasons. Some of these reasons include a need for flexibility, self-motivation, convenience, cost, location, and self-improvement (Aniston, 2007; Cole, 2000; Dabbagh, 2007). Synchronous and asynchronous learning allows students to access course materials and interact with other students and instructors in real-time, anytime, anywhere environments (Cole, 2000; Blackboard, 1998). With proper design, an engaging environment can be created for a variety of learning styles using multimedia, social media, and the interactivity of the web (Arbor, 2011). Students benefit most from online learning when they are engaged. There are factors, however, that can hinder an online learner's success. One of these factors is anxiety.

Anxiety and stress have been studied extensively in the field of psychology since the 1950's (Putwain, 2007). Putwain (2007) explains that high levels of anxiety have been found in students from kindergarten to graduate school. Students with high anxiety can fall behind because they are distracted (Minahan & Rappaport, 2013). Anxiety levels can have an adverse effect on a student's efficacy, grades, and even their health (Putwain, 2007).

For the purpose of this paper, anxiety will be defined as “an emotion characterized by feelings of tension, worried thoughts, and physical changes like increased blood pressure” (American Psychological Association, 2013). Anxiety differs from stress in that “stress is a normal response to a threatening situation while anxiety is largely caused by worry” (Tyrrell, n.d). According to Saade and Kira (2009), three types of anxiety have been identified: Trait Anxiety, State Anxiety, and Concept-specific Anxiety. “Trait anxiety is defined as a general pervasive anxiety that is experienced by a person over the entire range of life experiences” (Saade & Kira, 2009, pg. 3), “state anxiety is experienced as anxiety that fluctuates over time and arises to a responsive situation” (Saade & Kira, 2009, pg. 3), and “concept-specific anxiety is a transitory-neurotic type of anxiety” (Saade & Kira, 2009, pg. 3). “Concept-specific anxiety is the range between the trait and the state anxieties. It is an anxiety that is associated with a specific situation” (Saade & Kira, 2009, pg. 3). The literature review for this paper indicates that online learners typically experience anxiety associated with a specific situation. The anxieties mentioned in this paper are considered concept-specific anxieties. Further discussion will clarify what causes anxiety in online learners and will evaluate recurring themes and timelines to determine if these anxieties have changed over the past 20 years.

## **Literature Review**

Review of 20 research articles spanning approximately 20 years showed research on anxiety in online students. Several themes thought to correlate with anxiety were uncovered in these studies. The intent of this review was to examine the research to determine which themes recur and if they change over time. Examples of the themes uncovered in these articles included: technology, gender, computer mediated interaction (CMI), home life, communication, group

projects, transactional distance, testing, and isolation. All of the articles referenced undergraduate or graduate level students.

The majority of the articles indicated that anxiety in online learners was caused by either technology despair or communication breakdown. Five of the 20 articles identified technology as the primary anxiety trigger for students in online environments (Bollinger & Halupa, 2012; Majid, Sharil, Luaran, & Nadzri, 2012; Okwumabua, Walker, Hu, & Watson, 2010; Saade & Kira, 2009; Yoshida, Tani, Uchida, Masui, & Nakayma, (2013). In Yashida et al's (2013) study students revealed that their anxiety was caused by a fear of making mistakes when using computers, such as pressing the wrong buttons or clicking the wrong link. Other students who had never experienced an online course (Okwumbaua et al, 2010) and were unfamiliar with online learning environments (Majid et al, 2012) expressed higher levels of anxiety than classmates who had taken online courses in the past. The less confident a student indicated they felt about technology, the more anxious they were about interacting with the learning management system and the content found in their online courses (Saade & Kira, 2009).

Communication was identified four times in the literature as a source of anxiety for online learners (Conrad, 2002; Hara & Kling, 1999; Hurd, 2007; Hurd & Xiao, 2010). Anxiety produced by communication breakdown appeared to be elicited by both teacher-student and student-student interactions (Hara & Kling, 1999; Hurd, 2007, Hurd & Xia, 2010). Learners indicated feelings of anxiety when they were not able to receive immediate feedback or assistance from teachers (Hara & Kling, 1999). Conflicting instructions, lack of clarity in assignments, not being able to assess personal progress compared to others, and information overload also created anxious feelings (Conrad, 2002; Hara & Kling, 1999; Hurd, 2007). Oral

and written assignments, especially in foreign language courses, were additionally indicated as anxiety inducing in these learners (Hurd, 2007; Hurd & Xiao, 2010).

Riva and Galimberti (1998) describe computer-mediated interaction (CMI) as communication that occurs through the use of technology. This communication can be synchronous, as in a videoconference or instant message, or asynchronous, as in email or a discussion board posting. Three of the articles reviewed pointed to CMI as the cause of anxiety in online learners. Communication anxiety associated with email correspondence correlated with apprehension of oral communication, technology anxiety, and age (Fuller, Vician, & Brown, 2006). Collaborative experiences such as sharing of information and discussion actually evoked feelings of anxiety, isolation, and withdrawal as students began to express concerns that they could not represent themselves well in this context and might project the wrong image (Furguson, 2010). A final CMI study indicated that students diagnosed with social anxiety disorders reacted contrary to other studies (Yen, Yen, Chen, Wang Chang, & Ko, 2012). These students exhibited a lower level of anxiety while interacting in an online environment (Yen et al, 2012). Although their anxiety had not disappeared, it had decreased when given the opportunity to use CMI (Yen et al, 2012). This information may be of value for students diagnosed with social anxiety disorder. (Yen et al, 2012).

Gender has been explored in a variety of studies and is fundamental to distance learning research (McKnight & McKnight, 2012). Vandenbroeck et al (2007) surveyed a group of low-income women in Belgium to determine their appropriateness to participate in e-learning and potentially overcome the digital divide. A total of 551 surveys were evaluated. The average age of the population was 44. Responses showed that 88.2% claimed to have a computer, 93.4% claimed to have Internet access, and 67.5% reported that they regularly used the computer.

Results indicated that women who did not own a computer had less anxiety and were more motivated to participate. In a separate gender study, McKnight and McKnight (2012) evaluated the anxiety levels of both men and women who participated in an online video conferencing course. They determined that mental anxiety appeared to be equal for both males and females, but when physical anxiety was tested they found that women had a higher level of physical anxiety (increased heart-rate, sweating, etc.) than men during the live video conferencing session. These cases indicate that females have more anxiety in online learning environments. Other research has shown, however, that there is no significant difference in anxiety among genders (McKnight & McKnight, 2012).

A fulltime job, childcare responsibilities, and home life can add to an online learner's anxiety (Harrell, 2002). Jegede and Kirkwood (1992) administered pre-and post-tests and found that personal anxieties can change from the beginning of a semester to the end. Anxieties about course material, finances, and readiness dissipated over the semester while time, employment, and family support created more anxiety and were harder to manage for some students. These life factors can also create barriers for students when attempting to access institutional resources. Harrell (2002) noted that the unique needs of the adult learner should be taken into consideration so that peripheral service like libraries could better alleviate the daily anxiety of nontraditional, off campus students.

Test anxiety has been defined as “the anxiety that occurs in evaluative situations” (Putwain, 2008, pg. 3). Stowell and Bennett (2010) conducted a study to determine if students were more anxious taking tests online or in a classroom. The study had limitations in that the classroom students were given a specific date and time to take their test. The online students could take their test anytime during the day, and had a 5-day window to do so. Results revealed

that the students who took the classroom test experienced more anxiety. Stowell and Bennett (2010) hypothesized that the online students may have been less anxious because they were able to choose the date and time they felt most ready or comfortable to take the test. The classroom students did not have this option. Because of this limitation, Stowell (2012) repeated a similar test anxiety study two years later. The second study restricted the test date and time for both online and classroom students. The majority (67%) of the students had indicated that they felt comfortable using a computer, had taken online tests before, and preferred them (63%). Final survey results showed that students who took the online test exhibited a higher level of anxiety than those who took it in the classroom. It appeared that time and date restrictions obstructed the online learners comfort zones and created more anxiety (Stowell & Bennett, 2010).

Falkner, Falkner, & Vivan (2013) discuss the prominent use of social constructivist learning theory in distance learning. When collaborative learning activities place undue cognitive or metacognitive load upon students, however, it may introduce problems with anxiety and decrease learning. Group projects with unclear learning objectives can create unequal activities, heavier workloads, and anxiety for some online students (Falkner, Falkner, & Vivan, 2013). Hauser, Paul, and Bradley (2012) revealed that transactional distance also plays a role in the anxiety of online students. Moore (1997) explains “the transaction that we call distance education occurs between teachers and learners in an environment having the special characteristic of separation of teachers from learners. This separation leads to special patterns of learner and teacher behaviours. It is the separation of learners and teachers that profoundly affects both teaching and learning. With separation there is a psychological and communications space to be crossed, a space of potential misunderstanding between the inputs of instructor and those of the learner. It is this psychological and communications space that is the transactional

distance” (pg. 1). There are three variables in teaching and learning that determine the extent of transactional distance (Moore, 1997). Moore (1997) defines these variables as: Dialogue, Structure, and Learner Autonomy. Hauser, Paul, and Bradley’s (2012) study indicated that organization and innovation proved to be most important for online students to bridge the transactional gap.

A few factors were shown to curb anxiety. Course design, ease of use, training, and guidance were all suggested as tools to help alleviate technology anxiety (Saade & Kira, 2009; Majid et al; 2012). Creating a sense of community, receiving correspondence from teachers before a class began, clear due dates, and access to course layout before class start were all indicated as essential for a positive beginning of a semester (Conrad, 2002).

## **Discussion**

The 20 studies evaluated in the literature review were published between 1992 and 2013. It should be noted that this is not a complete representation of all studies reporting anxiety and online learning. For the purpose of this study, only 20 were uncovered and chosen for this paper. Upon review, nine themes (technology, communication, computer-mediated interaction, gender, home life, testing, group projects, and transactional distance) were identified as correlating with anxiety in online learning. Technology and communication themes were referred to most. Computer-mediated interaction appeared in three articles, while gender, home life, and testing were referenced in two, respectively. Group projects and transactional distance were identified once each. All of these themes fall into the concept-specific category of anxiety, as they are associated with specific situations.

To determine if there were any patterns of change in these studies, the data was examined more closely. It was decided that the gap between the first article, published in 1992, and the

second article, published in 1999, was too great to accurately represent a complete 20 years of research. It was decided that the study would examine a span of 14 years, beginning in 1999 and ending in 2013. The studies were organized in chronological order and a predominant theme was identified with each study (Table.1).

Table 1

| <b>Year Researched</b> | <b>Anxiety Theme</b>          |
|------------------------|-------------------------------|
| 1999                   | Communication                 |
| 2000                   | Communication                 |
| 2002                   | Home Life                     |
| 2006                   | Computer Mediated Instruction |
| 2007                   | Communication                 |
| 2007                   | Gender                        |
| 2009                   | Technology                    |
| 2010                   | Technology                    |
| 2010                   | Computer Mediated Instruction |
| 2010                   | Communication                 |
| 2010                   | Testing                       |
| 2012                   | Technology                    |
| 2012                   | Technology                    |
| 2012                   | Gender                        |
| 2012                   | Computer-Mediated Instruction |
| 2012                   | Transactional Distance        |
| 2012                   | Testing                       |
| 2013                   | Group Projects                |
| 2013                   | Technology                    |

Communication and home life appeared to be predominant themes in the late 1990's and early 2000's. Between 2006 and 2010 gender, technology, CMI, and testing were examined and indicated as anxiety triggers for online learners. Technology, CMI, gender, and testing reappeared between 2012 and 2013, as group projects and transactional distance made their debut. Review of the data showed that themes stayed fairly consistent over the 14 years. It appeared that communication, technology, and computer-mediated interaction were most often identified as triggers that caused anxiety in online learners. Communication anxiety was identified most often between 1999 and 2010 while technology anxiety was identified most often between 2009 and 2013. Communication anxiety seemed to be replaced by technology anxiety over the 14-year span. Home life, gender, testing, group projects, and transactional distance all appeared sporadically during that time. Of interest also was that almost half of the 19 articles were published between 2010 and 2012.

## **Conclusion**

This paper evaluated 20 research articles that focused on the causes of anxiety in online learners. The articles were published between 1992 and 2013. Nineteen of the articles were evaluated to determine if there was a recurring pattern in the themes that correlated with anxiety. After review, it was determined that there were certain themes that were mentioned more often than others. Communication, Technology, and computer-mediated interactions were referenced throughout the 14 years. Other themes like gender, home life, testing, group projects, and transactional distance appeared intermittently.

Distance learning affords students an education through flexibility and convenience (Cole, 2000). The constant growth of online courses influences and changes the way courses are designed and how students perceive them (Song, Singleton, Hill, & Koh, 2004). Enrollment in

online courses is at a record high and anxiety related with this medium has not dissipated (Allen & Seaman, 2013; Song, Singleton, Hill, & Koh, 2004). Causes of anxiety remain an important issue to educators. According to Welsh (200) online learners who had “high levels of self-efficacy, good computer and time management skills, financial stability, a favorable study environment, were enrolled in more than one course, and believed their prior learning experiences helped prepared them for their course were more likely to be successful”.

Evaluating, understanding, and providing solutions for students with anxiety can help them reach these goals and be more successful in their endeavors as students.

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