

CONTRADICTIONS IN E-LEARNING: THE NATURALNESS OF UNNATURALLY LEARNING ONLINE

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ABSTRACT - Online learning has many advantages for students who choose that learning modality. Yet, certain limitations exist. These limitations manifest themselves in various contradictions and dichotomies experienced by educators and learners. Without understanding these dichotomies in the online learning environment as well as the root causes of these dichotomies, educators, educational theorists, educational administrators, and course designers cause barriers to be raised between the subject material and learners; the result is impediment of knowledge acquisition. Only by understanding and implementing strategies to overcome these barriers and their causes could knowledge acquisition take place. Unfortunately, sometimes overcoming these barriers requires extensive modifications to the course and/or academic calendar that might not be feasible. In these situations, workarounds are necessary.

Introduction

Though the concept of learning at a distance has been in existence for more than a century (Caruth, 2013; Keegan, 1996), with the advent of the Internet in the 1990s, the concept of online or e-learning is relatively new. Though approximately 20 years old, online learning has not yet fully matured. Presuming that Moore's Law (Cumming, Furber, & Paul, 2014) is applicable in the discussion of Internet technology and e-learning, it is reasonable to believe that this modality of learning will continually and rapidly evolve as newer technological tools are created.

Nonetheless, during the last decade, online (or e-) learning has, so to speak, made a name for itself in the field of education. In many post-secondary institutions worldwide, online education has become a stable form of learning for millions of learners who cannot (or choose not) to study in a traditional manner. In the United States, the number of students studying online is increasing; more than 7 million are learning online (Allen & Seaman, 2014). Given that this type of learning is continuing to increase, and that 33.5% "of higher education students [are] taking at least one online course" (Allen & Seaman, 2014, p. 4), it seems clear that this form of learning will continue to be an important vehicle for knowledge creation and transmission.

As online learning progresses, several areas of concern still exist. These areas may be formulated as the following questions: (a) how could educators and students get away from the isolation that seems so prevalent in online learning? (b) How could the expectations of educators and students be aligned with their prior experiences in order to create a positive online experience? This second question is rather important and will also enable this researcher to touch on a tangentially valuable topic: How could students and educators experience subject specific (Cochran, 2015) online best practices (Palloff & Pratt, 2007)? In order to examine these questions, which form the basis for this research, it will be important to understand some existing contradictions as well as some possible solutions in online education.

Discussion

The discussion is divided into two broad sections corresponding to the two aforementioned issues of (a) reducing isolation and (b) aligning what people expect with their experiences (Chametzky, 2014; Kiliç-Çakmak, Karatas, & Ocak, 2009). Within each subsection, I will discuss pertinent literature and offer suggestions regarding how to overcome the corresponding contradictions. The discussion of these two concerns will lead to a tangential topic of subject specific online best practices.

Reducing isolation: contraction #1.

People study online for a variety of personal or professional reasons. One of the reasons might be the ability to learn at any location whenever the need arises (Crawford-Ferre & Wiest, 2012; Desai, Hart, & Richards, 2008). With the ability to study in any location at any time, online learning is a lonely venture. People are often sitting behind computer screens or other technological devices rather than being face-to-face in-person. Such an environment may be desirable to some learners. However, such a learning milieu is not ideal for everyone. In his book entitled *Group*

dynamics, Forsyth (2010) commented that though humans are able to live in isolation, “few humans seek or enjoy the challenges of solitude” (p. 2). Such a statement might explain why in an online learning environment, where distance separates students and facilitators, some learners do not succeed. Yet, such isolation and solitude can easily be reduced in some online learning environments through the use of collaborative activities.

One benefit of online learning is that without the traditionally-accepted, teacher-centered learning (Morrison, 2014) generally found in K-12 and post-secondary classrooms, students are empowered; they are able (and need) to take a more active role in their education (Chametzky, 2014). One way to accomplish this objective and experience a richer learning environment is through collaborative activities.

Many researchers (Chametzky, 2014; Koper, 2015; Puzziferro & Shelton, 2014; Wang, 2014; Woo & Reeves, 2008) have studied collaborative activities. Through active interaction with the course material (Chametzky, 2015a) via collaborative activities (Wang, 2014), and through scaffolding (Chametzky, 2014; Cook, 2012), learners are able to understand the subject material more completely. With collaborative learning, students have the opportunity to delve into a subject area more thoroughly than if they studied in isolation. In addition, with collaborative activities, learners are able to develop higher-order thinking (Bloom, 1984) and “deep learning” (Svirko & Mellanby, 2008, p. 219).

According to Wang (2014), students in online classes “benefit most from actively engaging in learning activities through social interaction with the immediate learning environment” (p. 24). Indisputably, such constructivist learning is ideal. More active learning and student-student interaction also results in higher course satisfaction (Swan, 2001). Wang (2014) concurred stating that “peer interaction” (p. 30) was the most important element for students in an online learning environment.

Presuming that all online learners were willing to engage in collaborative activities involving higher-order thinking and richer learning (Chametzky, 2014), no contradiction would exist. However, such is not the case. Based on experiential knowledge, I have seen how students in online courses do not like collaborating with each other on group assignments or projects. Such a statement is also supported in the literature (Koper, 2015). People generally do not like collaborative work because of past experiences where team members did not do their fair-share of the work (Wang, 2014).

Traditionally, with group assignments, the teacher would put students in groups, explain the assignment, and expect a group project submitted at the end. Consider the following two plausible and often-seen situations:

- (a) In a group of three students—Denise, Sally, and Charles—Sally and Charles are doing adequate work; Denise is not. As a result of Denise’s minimal efforts, Sally and Charles are forced to do their work plus that of Denise in order to obtain a good grade in the group assignment.
- (b) With the same students, if Charles is a controlling overachiever, he might want to do his work as well as the work assigned to Denise and Sally in order to ensure a very high grade in the group assignment.

In the first situation, Sally and Charles might become resentful of Denise and her indifferent behavior. In the second situation, from the perspective of one overachieving group member, it would seem that everyone would benefit if he were to do the majority of the work: a win-win for everyone since Denise and Sally do not mind letting Charles do their work. However, in both situations, an unfairness and inequitable distribution of the work exist. And, the next time a collaborative activity is required of students who had been in either of these situations, they will recall with displeasure their prior experience.

Reducing isolation: possible solution to contradiction #1.

How could divergent feelings of dislike for collaborative work and the need to do well in a class be reconciled? Each of the two aforementioned situations can easily be allayed if collaborative work is done in a different manner from what might be expected. After a group or team is created—and it could be challenging in an asynchronous environment (Palloff & Pratt, 2007)—the first task of the newly formed groups is that members must come to a consensus in answering the following questions:

- How will [the] group identify itself? [. . .]
- How will the group communicate? [. . .]
- How quickly should group members be expected to respond to emails or discussion board postings? [. . .]
- What role or duties will each person in the group perform? [. . .]
- Who is responsible for posting group responses to the main discussion board?
- How will the group handle a member that [sic] is not participating? (Palloff & Pratt, 2005, pp. 27-28;

Palloff & Pratt, 2007, pp. 165-166)

Palloff and Pratt (2007) commented that an implicit hope exists that group members would work together (Guo & Stevens, 2011) to solve the common objective (the final submitted assignment). It is the "positive interdependence" (Guo & Stevens, 2011, Section 2) that makes the collaborative activity successful. Group member accountability "significantly predicted [the] quality of teamwork learning experience" (Wang, 2014, p. 24). Likewise, the division of work must be spread amongst each student evenly (Guo & Stevens, 2011). Thus, little need exists for an overachiever to do most or all of the work in a collaborative activity or assignment (Palloff & Pratt, 2007).

Additionally, at the end of an activity, group members would have an opportunity to evaluate the work of fellow members. This review ensures that students worked jointly with each other on the task at hand (Palloff & Pratt, 2007). In order to accomplish this evaluation, team members would be given the rubric created by Palloff and Pratt (2005) (or a similarly created rubric) when the group was created. As the last task of group members, each would privately submit grades for all team members (including him or herself) based on "teamwork, presentation style/delivery, information/content, general attitude, working with others, collaboration, preparedness, and focus on task and time management" (Palloff & Pratt, 2005, pp. 45-47). It would, of course, be the responsibility of the instructor ultimately to issue the final grade, but he or she would be able to use the input from the group members to make that decision. With the aforementioned questions answered and with the fair grading scheme in place, educators and learners would not have to worry about students like Denise or Charles; everyone would work and be graded in an equitable manner.

Reducing isolation: contradiction #2.

Another contradiction exists with collaborative activities: a reduced sense of belonging (Palloff & Pratt, 2007). Imagine the same students in the earlier scenarios. In this scenario, Charles stops participating in the group work. He no longer attends class and has not dropped out of it. Charles does not respond to the e-mail messages from Denise and Sally. The group members are confused as to what to do; they will probably need and want to contact the educator for guidance.

Reducing isolation: possible solutions to contradiction #2.

Part of the problem may be that Charles does not feel a sense of belonging (Palloff & Pratt, 2007) in the class. Because of this deficit, he feels no need to explain to his group members (Lim, Morris, & Kupritz, 2007) his absence, his possible plans to drop the course, or any issues outside of school that are affecting his educational work. Clear problems arise from such isolation and minimized connection.

Maintaining the status quo of a group can be challenging in an asynchronous online environment (Thomas, Herbert, & Teras, 2014) for several reasons. One reason may be due to the collegiate academic calendar. If students are able to drop the course during the first several weeks (or even up to the penultimate week) of the class, feeling any sort of connection cannot easily be achieved. Without developing a sense of belonging (Palloff & Pratt, 2007), students have little reason to inform any group members or the educator about plans that affect their work in the course.

An easy answer might be to modify the academic calendar so students are not able to drop a class three months into the 16-week semester. However, such a desire might be unrealistic, as that would involve all classes and the approval of many committees. Several class-level suggestions may be proffered, however. Perhaps the easiest approach is for the educator to increase communication. Being available—and letting the students know frequently of this availability—is vital in such a situation. Communication can take place in the course area via the Discussion Board or privately via e-mail, telephone, Skype, and/or social media.

A second solution to increase feelings of belonging would be to have an icebreaker activity be part of the course design. During the first week or two of the class, all course members (students and educator) could get to know each other on a more personal level via an icebreaker activity. Another way for students not to feel isolation would be for the educator to encourage peer interaction via a lounge (Thomas, Herbert, & Teras, 2014) in the course area. In this lounge, students would be free to discuss whatever they wish without any fear of retribution. Depending on the functionality of the learning management system (LMS), postings in this area could even be done anonymously.

The benefits of increased communication and interactive tasks, beyond helping students not feel alone in a potentially lonely environment (such as asynchronous online learning), are evident. First, with increased feelings of

belonging and camaraderie, an increase in satisfaction (Thomas, Herbert, & Teras, 2014) will occur. According to Thomas, Herbert, and Teras (2014), with increased satisfaction, "less anxiety, . . . more retention, [and] less attrition" (p. 73) will ensue. For part-time post-secondary contingent educators in the United States, the possibility of reducing dropout rates has an important potential benefit; more student retention could easily translate into increased (and potentially sustained) employment (Chametzky, 2015b). Second, in an environment—especially in a high-stress subject like mathematics (O’Leary, 2014; Richardson & Suinn, 1972; Tan, Yeo, & Lew, 2015) or foreign languages (Chametzky, 2013a)—where students may probably already have negative experiences—having lower anxiety and a lower affective filter (Chametzky, 2013b), is most certainly desirable.

Alignment of expectations and experiences.

In order for a person to succeed at an endeavor, experience and expectation need to be in synchronization one with the other. When reality does not match, and thus is not congruent with, a person’s expectations, a misalignment exists. Such a misalignment causes a disruption or a dissonance. Such a statement is universal—not exclusively in the field of online education. For example, in everyday life, if a person were to receive cold food from a server in a restaurant—presuming it should have been initially hot—it is commonplace to be surprised and then send the food back to be reheated. If the mishap occurred repeatedly, it would be reasonable for the customer to become increasingly upset. Being surprised and subsequently upset, then, is the visible and emotional manifestation of the misalignment between a person’s experience and his or her expectation.

In an asynchronous online learning environment, too, experience and expectation (Chametzky, 2014; Kiliç-Çakmak, Karatas, & Ocak, 2009) must also be aligned one with another in order to have a positive learning experience. To understand more completely the contradiction (as well as the causes and effects of the misalignment) in an online learning environment, it will be valuable to do several things. First, it will be important to examine briefly the theory of offsetting the affective filter (Chametzky, 2013a, 2013b). Second, it will be valuable to examine several dichotomies that stem from a misalignment of experience and expectation (and the ensuing anxiety) as well as possible solutions to these issues. Finally, it will be valuable to examine a tangentially important topic: How could students and educators experience subject specific (Cochran, 2015) online best practices (Palloff & Pratt, 2007)?

Offsetting the affective filter.

In the field of education—and indeed even more generalizable to fields outside the online learning realm—the dichotomy between experience and expectation (Chametzky 2014; Kiliç-Çakmak, Karatas, & Ocak, 2009) stems from a place of unknowing and anxiety. Online learning requires a different way of learning (Kabilan & Rajab, 2010) from a traditional classroom setting. Because of possible technological (Anderson & Williams, 2011; Nsomwe-a-nfunkwa, 2010; Rogerson-Revell, 2007) and psychological challenges (Chametzky 2013a; Pino, 2008) affecting many learners, new challenges in online (or e-) education exist (Palloff & Pratt, 2007).

In 2013, Chametzky (2013a) conducted a classic grounded theory study and interviewed 15 post-secondary, online, foreign language learners to understand more clearly and comprehensively how they dealt with the online foreign language learning experience. The result of the study was the theory called offsetting the affective filter. When students experience anxiety caused by either being out of their comfort zone or a conflict between experience and expectation, they try to do things to comfort themselves. Not always are they able to relieve their discomfort an anxiety. One important fact from the study, Chametzky (2013a) found, was that knowledge acquisition took a back seat to affective needs. A hierarchy of needs à la Maslow seemed to be involved with the online learners. If anxiety and other affective issues were not addressed, learning could not and did not adequately happen.

In order to alleviate anxiety thereby countering any undesirable effects of misalignment, students exhibited covert behaviors including but not limited to self-isolating, feeling demotivated, feeling unable or not confident to take chances in class, losing or having insufficient self-direction, or, if those items failed to yield positive results, dropping the course (Chametzky, 2013a). In all instances, the students were unable to acquire knowledge because their affective filters—the psychological barriers present in everyone—were too elevated and impeded the learning process. In the following section, I will turn my attention to some issues involving contradiction stemming from the lack of congruity between experience and expectation.

Several possible solutions to the contradictions.

To reduce anxiety, online educators could and need to do several things that fall under the categories of (a) course

development, (b) teacher-student interaction, and (c) student engagement (Chametzky, 2015a). By understanding any learner-centered or learner-related issues, educators would be able to help them develop the necessary skills required to succeed in the class while simultaneously reducing their anxiety levels (Chametzky, 2013a) caused by a misalignment of experience and expectation.

The first suggestion, under the category of course development, is to avoid overly mechanized classes. Educators who are not accustomed to online learning need to understand what the best practices are in this educational milieu. Because of preferences, abilities, and teaching styles, some educators might not be best suited to teach in an online environment. In the early days of e-learning, Fraser (1999) coined the term “shovelware” (p. B8) to indicate work that was merely shoveled onto the web for students to absorb with minimal modifications. In an online environment, it is important to have a variety of materials—text and multimedia—in order to stimulate learners (Chametzky, 2013c).

Tangentially related to course development is the idea that if learners are expecting to have peer and teacher interaction but get a course filled with text and slideshows, they will be disappointed and disillusioned. The possible result of this disappointment and disillusionment could be an increase in anxiety and a decrease in motivation. Similarly, in an online environment, without visual clues, it might be difficult for educators to know why some learners do not succeed in an online learning environment. With minimal interpersonal interaction, in the event that learners had questions—perhaps because of a lack of clarity in some aspect of the course, their anxiety would increase because assistance would not be forthcoming. To the extent possible, it is imperative for educators to address all student issues (whether they are normal course-related concerns, or ones that could easily cause anxiety) as soon as practicable. If educators are able to respond (via e-mail, telephone, Skype, the Discussion Board in the course area, or any other mutually agreed upon tool) to students within 24 hours, students will be appreciative of the attentiveness of the instructor. In addition to this appreciativeness, the levels of unmanageable anxiety will not be a concern. The longer the educator waits to help the student, the greater his or her anxiety will be.

The aforementioned issue regarding the student-education interaction is sometimes apparent when students, too, are new to online learning and do not understand what constitutes best practices. Such a bidirectional dichotomy causes this issue to be extremely complicated. One way to help learners overcome the anxiety caused because they are not accustomed to an online environment would be for educators to organize their courses to include an extended period (roughly 3-4 weeks) during which time learners could explore the online environment and gain the necessary experience before commencing with the course work. During this period, students would be able to gain experience using all the technological tools and learn the etiquette required for online interaction.

According to Pillay, Irving, and Tones (2007), “a lack of familiarity with online learning and the added perceived complexity seems to have affected students who were less conversant with computer technology” (pp. 221-222). Zheng, Lin, and Romig (2015) agreed with Pillay, Irvin, and Tones (2007) that in an online environment, when compared with traditional classroom learning, greater demands are placed on learners because of the need to be technologically proficient. The opportunity to practice using the technology during an initial 3-4 weeks would greatly aid the learners in reducing their anxiety.

One downside in attempting to accomplish such a feat is that the required subject specific material would be crammed into the remaining weeks of the semester. Such an activity would not necessarily aid in knowledge acquisition and higher-order thinking (Bloom, 1984) because increased memorization would take place. A second downside to modifying online courses for such an extended period is that while learning about important best practices in online education, they are not necessary subject-specific (Cochran, 2015) and thus, some of the important subject specific elements would be missing. And herein lies the potentially unsolvable problem.

A more viable alternative would be to require all students to take a non-graded introductory online class where the online standards and expectations are made known to the learners. The benefit to such a course is that learners would be able to gain valuable knowledge and experience in online learning without the fear of earning a poor grade. Then, armed with the knowledge of what an online course is like, learners who have taken this kind of introductory course could make an intelligent decision as to whether to take a for-credit online course in the future. The downside to having such a course is that it is not subject specific (Cochran, 2015). Additionally, this type of course costs money to design and teach. Given that post-secondary institutions are businesses (Chametzky, 2015b),

offering a free, non-credit course—unless it were (a) designed in such a way so as to accommodate all subject areas and (b) supported by the administration—would generally not fare well.

The final suggestion to address misalignment and anxiety through course design is to have learners interact more with the course material (Chametzky, 2015a). One way to increase engagement, along with the aforementioned suggestions, is to make learning meaningful for the learners. When they see the need to acquire the knowledge, learners are more willing to do it than not (Knowles, 1984; Chametzky, 2014). Bain (2004) in his book, *What the best college teachers do*, mentioned an educator who told the students to ask him, “Who gives a damn?” when they do not see the relevance of the material to their lives. He would explain the importance regardless of how seemingly trivial the material might be. Online educators must be mindful of this idea when they develop their courses.

For active, meaningful learning to occur, learners must not be passive recipients of the knowledge. Two things must simultaneous happen for active learning to occur. First, with learner-centered cooperative and collaborative activities, learners take responsibility to determine how the learning will occur and how each participant could help one another acquire that knowledge. Such responsibility requires that learners communicate with each other frequently during the course. Second, unlike in a traditional classroom where an educator generally stands in front of the class, an online educator must move away from center stage and give up the chalk, so to speak. He or she no longer holds a monopoly on the knowledge that the learners must acquire.

The conundrum, however, is that often, students are not used to being active learners and do not know how to work actively and collaboratively in an online learning environment. While learners might wonder how they could simultaneously be active and passive learners, educators might wonder whether they could simultaneously guide and pour knowledge. Though scaffolding learners until they are ready to become active learners (Chametzky, 2014; Knowles, 1984) is one option, because of the imposed academic calendar, it might not always be possible to achieve the desired effects. In fact, within the timeframe of a one-semester course, a satisfactory solution to this situation might not be possible.

Subject-specific misalignments and possible solutions

In this section of the paper, I will turn my attention to subject-specific contradictions and possible explanations of these dichotomies. In presenting these misalignments and possible solutions, I will examine two subjects. Though foreign languages and mathematics may initially seem to be widely different, they share some commonalities one with the other.

Online foreign language learners experience anxiety for several reasons. Many students—based on their poor past foreign language learning experiences—believe that learning is done via the grammar-translation method where instruction is typically done in the lingua franca or L1 (short for first or native language) of the learners. Grammatical rules are presented as facts and students apply those rules in examples. Such a method was popular from the “late 19th-early 20th century” (Shrum & Glisan, 2010, p. 481) and is out of fashion. Yet, many (public school) teachers employ this method as speaking about the target language (L2 short for second or foreign language) is easier than using the target language.

The guidelines created by members of the American Council on the Teaching of Foreign Languages (henceforth referred to as ACTFL) (2012) as well as the ACTFL standards (1999) are rather clear that oral communication is vital to foreign language acquisition. Because learners have never taken an online foreign language class with an instructor who is proficient in speaking the language and do not realize that they will need to interact orally with one another—because of misguided expectations about the requirements of such a course—they (a) will feel frequently intimidated, (b) will not want to interact orally with peers, and (c) will become easily disappointed, dissatisfied, and displeased. Thus, the first dichotomy is that students are not used to speaking and making mistakes in a language that is not their L1.

The feeling of embarrassment because of a faux pas or linguistic error is even more crucial when unfamiliar, potentially anxiety-laden elements (like a foreign language [Chametzky, 2013a] or mathematics [O’Leary, 2014; Richardson & Suinn, 1972]) come into play. It is possible to bridge the anxiety between having to put oneself “out there” trying to use the new language (and thus making mistakes) and the aforementioned ACTFL guidelines (2012) and standards (1999).

In general, a technique that educators could use to resolve this anxiety is humor. Personal humorous anecdotes help lower the anxiety levels of learners. In turn, when the affective filters of learners are reduced, they are better able to learn more easily. A direct result from the ease at which knowledge acquisition takes place is an increase in confidence. With an increase in confidence, learners become excited about the course material. Such confidence leads greater and deeper learning. Clearly, a cyclic effect takes place, as shown in the following figure.

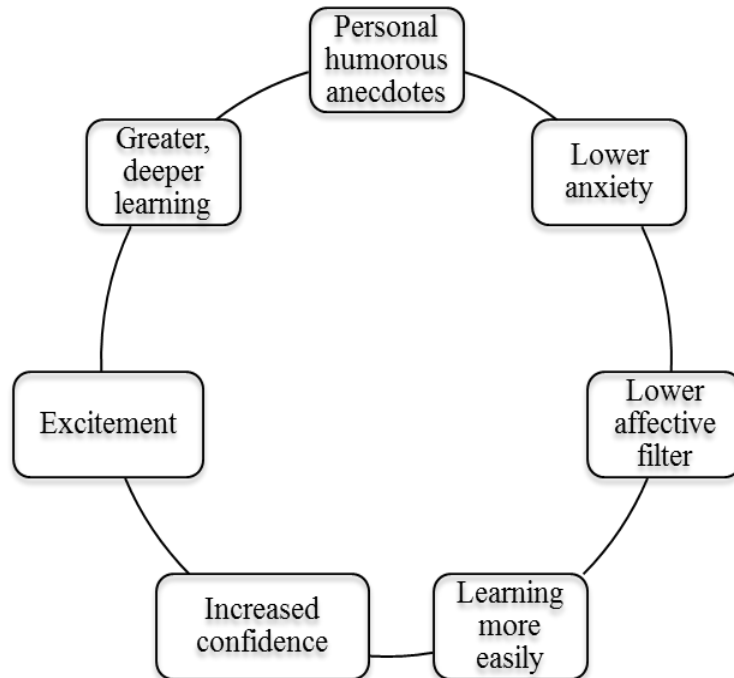


Figure 1. Cyclic effect of humor

A second contradiction or dichotomy that exists in online learning occurs between generalized best practices and what students are simply not able to accomplish in a subject specific class. For example, in a beginning foreign language class, students are not able to communicate in the target language. Further, if the text-based lessons that are needed in an online environment are in the target language—and students are not yet able to read in that language—their affective filters will be so high that they will immediately drop the course (Chametzky, 2013a). Given this very real and understandable shortcoming, as Cochran (2015) commented, it would be valuable to offer online training that is geared to specific non-English subjects. Though valuable for the educators and learners, its possible impracticalness (due to budget constraints, resources, and time availability) is unquestioned. Yet, it would be useful to find a potential intersection of online best practices for native-language and for foreign language and mathematics courses.

The concept of Bloom’s Taxonomy (1984) has been well researched (Bush, Daddysman, & Charnigo, 2014; Chametzky, 2014, Krathwohl, 2002). It is in higher-order thinking (i.e., synthesizing, evaluating, analyzing, and the like) where educators ultimately want their students to be. The problem is that in an online beginning foreign language class where learners are more accustomed to a “transmittal model” (King, 1993, p. 30) resulting in memorizing and regurgitating, to attempt linguistic activities involving higher-order thinking is not realistic.

It is possible, though, to attain higher-order thinking in other ways. A good language class must combine linguistic acquisition with cultural acquisition. To that end, in the discussion forum—whatever that technological component is called—the educator should attempt to have a mixture of target language and primary language topics.

For the target language writing (and speaking) activities, the educator should be satisfied with simple, concrete sentences. For example, in a beginning foreign language class, it is very reasonable for students to interact with one another by greeting each other, asking how each is doing, and perhaps ask informational questions—all class-level appropriate skills. In these ways, learners are using the language in meaningful ways. In the case of an ASL

(American Sign Language) course where oral communication is obviously not needed, students would submit videos of their conversations.

On the other hand, in dealing with the cultural elements, educators could easily have learners develop higher-order thinking skills via collaborative activities. For example, depending on the language and specific level taught, it could be reasonable to have students analyze, compare, and contrast subject-specific topics in relation to the home culture thereby demonstrating higher-order thinking skills. And, if the students spoke the L1 with each other, the objective for the assignment is not L2 acquisition but cultural development and sensitivity. Thus, a change of focus might help educators realize that their language courses are a combination of linguistic and cultural acquisition. With the aforementioned suggestions, at least for elementary online foreign languages, educators could circumvent the need for subject-specific training proposed by Cochran (2015).

Concerning overall participation in online foreign language classes, it is common knowledge that cramming rarely, if ever, aids learners. With foreign languages, too, cramming is not beneficial. It is recommended, therefore, that students participate in the online course rather frequently. Though admittedly, online classes may be geared to the anywhere anytime mentality, acquisition of a foreign language requires frequent practice. To that end, I recommend that learners participate between three and five times per week. Having students participate “several times per week (Strandberg & Campbell, 2014, p. 6) will not only help reduce anxiety but also aid in linguistic acquisition.

To that end, being fully aware of ACTFL proficiency guidelines and standards (1999, 2012), I propose the following minimum guidelines for what constitutes adequate participation in the areas of writing, reading, speaking, and listening. For writing, the student should accomplish this task three to five times per week by making postings to the discussion board. For reading, the student should accomplish this task at least 15 minutes three to five times per week by reading or studying the lesson, (e-) textbook, or discussion board postings. For speaking (or signing and watching in the case of ASL), the student should accomplish this task three to five times per week by creating a 30-second audio or video file (a total of three to five per week) related to the topic at hand. For foreign languages in which communication is done via speaking, as far as the ACTFL standards for communication go, it may be that—as with the andragogy/pedagogy discussion (Chametzky 2014; Knowles, 1980)—if learners are not ready for communicative activities in the target language, the native language should be used. Or, perhaps conversations should initially be highly restricted to only greetings, then talking about likes and dislikes, and so on. In this manner, learners are gaining experience in the L1 rather than in the L2. For listening, the student should accomplish this task by watching the videos that accompany the lesson. Each lesson should have several videos that relate to the concepts presented. Whenever possible, the dialog should be meaningful rather than abstract.

In order to accomplish these tasks, though, educators will need to be mindful of two things that they will need to do. First, lessons must contain a great deal of multimedia content—at least one video or audio component for each concept taught in each lesson. Ideally, more than one audio and more than one video file would be needed so as to reduce potentially another important issue: “neither body language nor eye contact [is] possible in online environments” (Zheng, Lin, & Romig, 2015, p. 1528). With many audio and video files, learners will be able to hear, read, and see the language in use. Second, educators will need to create numerous activities for each lesson. Because students are required to produce the language frequently, having an activity associated with each grammatical concept would be beneficial.

As good as the idea of having students participate three to five times per week, the dichotomy is that, in general, some students have a 19th century mentality whereby online learning is exclusively an isolated activity; minimal interaction with other course members (learners and the educator) exists. Some students do not want or—because of prior obligations—cannot participate that frequently. Though the choice of priorities falls squarely with the learners, some learners do not make wise decisions because the misalignment of experience and expectation is difficult to address.

The aforementioned “set of challenges for . . . the instructor and students” (Isaacson & MacDonald, 2012, p. 197) are not exclusive to foreign languages; they are equally experienced in other subject areas such as in the STE(A)M (Science, Technology, Engineering, (Arts), and Mathematics) fields. In these fields, too, students must learn how to use the technology (Habre & Grundmeier, 2007), trouble-shoot technical issues, and scaffold learners (Shukla, Hassani, & Casleton, 2014). Yet, based on the STE(A)M subject area, because of the increased need for tactile work (as in the science and technology fields) or for the use of non-English symbols (as in mathematics, statistics, or

some sciences), it is worthwhile to examine several other concerns and contradictions. In these fields, an increased need exists for (a) subject-specific technology, (b) students to have an initial basic vocabulary in order to be able to talk about the concepts even if they do not fully understand the concepts, and (c) authenticity and subjectivity. Each of these issues will be discussed in turn in this section of the paper.

The first need is subject-specific technology. Let us assume that a student is asked to compute the standard deviation or the cumulative or continuous distribution (n.a., 2014). Either task is complicated and requires the use of various Greek and mathematical (more accurately, statistical) symbols. Further, as part of the online class assignment, the student is required to discuss and show how he or she arrived at the final answer. In a traditional class, using a pencil and paper might be an easy solution to the problem, however, that option may not be transferrable in an online environment. While technology exists to help learners use such complicated formulae, it might not be native to or adequately integrated into the LMS.

When third-party technological tools are not integrated or inadequately integrated into the LMS, students and educators will need to adapt and find various potentially sub-par workarounds. Such workarounds may cause undue anxiety for educators and learners when technological issues arise. If technological tools are insufficient for educators and learners, the solution may be that they need to wait for the technology to “catch up” to their needs. Admittedly, this solution is not ideal. However, given Moore’s Law, such a wait might hopefully not be too long.

The second need is a very real benefit for students to have some basic vocabulary in order to be able to talk about the concepts even if they do not understand the concepts. If students are struggling in a specific subject area and do not have the vocabulary to express themselves because they cannot describe the root cause of their struggles, great stress will ensue. For example, let us imagine a student is trying to communicate with his or her faculty member and does not understand what the Greek letter sigma is, what it looks like, or what its function is in statistics even in the most basic terms. For that student, stress, anxiety, and confusion will be high. Now imagine that this student, in his or her confusion, talks about e with the professor. Given that no e exists in statistics but does exist in math, additional confusion might ensue. One way to reduce this problem and reduce the unnecessary stress is by creating downloadable resources for students in the LMS. With these resources, whenever students have vocabulary questions or concerns, or need a quick review, they have valuable information at their hands. These resources would also serve another benefit to learners. When learners realize that these resources exist to help facilitate learning, students will have taken the first step to self-efficacy—a vital skill in online learning.

The third need involves authenticity and subjectivity. For online learners—especially for older adults who, intentionally or otherwise, follow the tenets of andragogy, it is important to have useful solutions to problems; this concept is fundamental to the “model of assumptions” (Knowles, 1980, p. 43) often referred to as andragogy (Abu Bakar, 2013; Chametzky, 2014). These real-world answers provide the authenticity that all learners need to acquire the subject material more completely. The common problem—especially in mathematics and to a lesser degree in foreign languages—is that textbooks and software applications from book publishers do not always offer authentic types of questions or assessments. Similarly, educators prefer easier types of testing approaches rather than a more complicated approach involving designing authentic questions. Thus, learners who know and are able to regurgitate facts in order to pass an exam are not as well off as those learners who are able to apply the information to real-world situations. The solution to this potentially serious contradiction would be to have textbook publishers be aware of this inadequacy and address it. Additionally, educators need to refrain from giving easy-to-grade exams and use real-world problems to assess learners’ knowledge acquisition.

Tangentially related to the requirement of authenticity is the necessity for subjectivity. In the outside (i.e., real) world, problems can often be solved in a myriad ways; in the online learning environment, though, software applications are not generally designed for subjectivity. Learners will not be able to appreciate fully the authenticity of a particular project or problem if an element of subjectivity is not part of it. To illustrate this point, I offer the following real-world example:

You go to the local grocery store with 45 units of currency in your hand. Each of the 11 items mentioned below cost 5 units of currency. Which items and how many of those items will you purchase? Bathroom paper, Bread, Cereal, Eggs, Fish, Fruits, Milk, Red Meat, Snacks, Soap, Vegetables

Clearly, numerous solutions exist to this problem. If technological tools do not have the “smarts” to allow subjectivity in students’ answers, then students are being cheated on highly valuable, real-world information.

Conclusion

In some educational situations (Boylan, 2002), online learning might not be as effective as traditional, classroom scenarios (Shukla et al., 2014). The aforementioned dichotomies may provide reasons for this reduced effectiveness. Or perhaps, as Capra (2014) stated, "Online courses can be isolating, impersonal, and disengaging" (p. 114). If that were the problem, then the solution would be to have the students be engaged more with the course material (Chametzky, 2015a). However, as Capra (2014) stated, "Many instructors attempt to produce social interactions by creating mandatory discussion boards that require a minimum number of peer responses. However, these boards frequently end up being a detached chore" (Capra, 2014, p. 114). This imposition may be mitigated if educators use the aforementioned techniques to engage learners more actively in their learning. No learning environment will be enjoyable 100% of the time.

From the aforementioned discussion, it should be clear that a successful e-learning environment is extremely complex and requires different elements to work in concert with each other. Having an understanding of how learners might behave in an online environment is a crucial component for the success of an online course. Without understanding learner behaviors, educators tacitly permit some learners to flounder with great anxiety and an increasing sense of overwhelm.

In addition, the relationship between perception of experiences and actual experiences are sometimes not in congruence with each other. Such divergence may affect how much the person is attracted to or interacts with the object or environment (Dineen, Ash, & Noe, 2002). The perception and actual fit that various educational theorists (Dineen, Ash, & Noe, 2002; Wessel, Ryan, & Oswald, 2008) discussed, is, in some sense related to the person's experiences and expectations. It would seem, then, that the root of the numerous contradictions mentioned in this paper is the divergence of experience with expectation.

With understanding this divergence, combined with interaction, engagement, and guidance, educators can help reduce the anxiety thereby allowing learners greater opportunity for deep learning and higher-order cognition on Bloom's (1984) Taxonomy pyramid. Similarly, by understanding the numerous contradictions in the online environment, educators and educational theorists will be able to assist learners as they practice thinking critically and grow as individuals. Ultimately, this growth is the objective of education.

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