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Self-Efficacy of Online Learners

Bob Daumer

Nova Southeastern University

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Abstract

Education can be a challenge for some learners. It has been explored that learner self-efficacy may be one of the reasons for educational challenges. Struggling learners in a traditional classroom environment have the instructor to turn to for immediate assistance, plus the instructor has the benefit of observing various behaviors that may be symptoms of low self-efficacy. This is not the case for non-traditional environments, such as online. Online education presents challenges to both the learner and the educator. For the learner and the educator, the educational environment and structure changes. In addition to this, much of the educator's benefit to notice symptoms of low self-efficacy has been removed. Implementing a learner-centered (heutagogical) educational environment may offer online learners and educators equivalent means of maintaining or improving learner self-efficacy. This paper explores self-efficacy, online education, and heutagogy; then draws conclusions based on the material reviewed to the relationship between self-efficacy and online learners.

Self-Efficacy of Online Learners

In the twenty-first century electronic technology has become a staple in most developed nations of the world. Electronic products from the most basic lamp to the most sophisticated computers are oft to be accessible to the population, either at home or publicly, such as in a library. In the U.S. alone, 54 percent of the population was approximated to be using the Internet in September 2001 (Hill et al., 2004, p. 433).

Throughout the information age education has adopted various forms of electronic technology to facilitate and expand learning. Within recent years the Internet has become an instructional technology. Online (Internet-based) learning falls within the realm of distance education—any learning environment where or when the learner is separated from the instructor (Simonson et al., 2006, p. 32). Online learning has changed the required materials of education from simple school supplies and textbooks to computers with Internet connections, as well as essentially eliminating the need for a classroom.

While education has been adopting new instructional technologies, learners continue to pursue educational opportunities. Many issues face these learners, some of which consequently cause challenges. The best learners can overcome these challenges by adapting; however, other learners struggle to overcome them. One of the most encountered challenges is self-efficacy, or confidence in one's self to be able to achieve an objective (Dillon & Greene, 2003, p. 240). The impact that education via an instructional technology, such as online learning, has on learner self-efficacy is the subject of this paper.

Introduction

Self-efficacy theory states that when learners doubt they can achieve an objective, the tendency is to shy-away from or lessen the importance of that objective. On the other hand, when learners are confident they can achieve the objective, the tendency is to attempt the objective (Dillon & Green, 2003, p. 240). Learners who doubt their ability to achieve objectives have low self-efficacy and are often not successful in their education.

Educators in traditional classroom environments are able to recognize struggling learners through a variety of symptoms. On the other hand, educators in distance education environments, more specifically online, lack the ability to recognize of many of these traditional symptoms. "The complicated mechanisms of human expression—facial expressions, voice intonation, body language, eye contact—are no longer available" (Ko & Rossen, 2004, p. 182). This lack of expression is not only a hardship for the educator, but also makes the learning experience that much more challenging for learners.

Regardless of the instructional technology, educators need a keen sense of their learner's progress. If online education is to become a successful and demanded instructional technology then learners need to know that their experience is equivalent to a traditional classroom learning environment. Simonson and Schlosser (2006) theorize that distance education (online education), when properly designed, offers an equivalent learning experience to a traditional classroom learning environment (p. 50).

Online education is steadily growing in acceptance and popularity. In 2002 there were more than 3.1 million students enrolled in some sort of distance education course in the U.S. (Watkins, 2005, p. 794). With this growth, it is necessary to further the understanding of learner

self-efficacy in online educational environments. As instructional technologies expand beyond today's online education implementation, and into realms of virtual reality and refined artificial intelligence, what will be the impacts of this technology and media on the learner? Learner self-efficacy and its relationship to various instructional technologies lends itself to be a topic of continual research.

Methodology

Recent readings in educational books and edited collections prompted my interest in learning more about learners. Pondering my educational and professional purpose as an instructional designer/technologist, I realized a sense of responsibility to learners. I presumed that online learners, although typically independent, still seek guidance in their education. Various readings (Dillon & Greene, 2003; Simonson et al., 2006; Ko & Rossen, 2004) reinforced my presumption. These readings go into much more detail regarding characteristics and requirements of online learners.

Of most interest was an article written by Connie Dillon and Barbara Greene (see Dillon & Greene, 2003) that focused on identifying the differences between learners. One of the topics of discussion was learner self-efficacy. Referring back to the self-efficacy theory, I thought more about why learners have doubt about their ability to succeed. This is when I began to do more research on the topic of self-efficacy of online learners.

Using the Alvin Sherman Library, Research, and IT Center at Nova Southeastern University (North Miami Beach, Florida), I performed multiple database inquiries. I began by doing keyword searches using terms such as *self-efficacy*, *online learning*, *motivation*, and *heutagogy*. These keyword searches yielded a variety of articles.

These articles were the means to my next set of search criteria. Reading through each article I noted specific citations the authors used. Returning to the online databases, I performed author searches for those I noted in my original set of database inquiries. This search yielded more results, although not as many that I felt were relevant to the primary topic of self-efficacy of online learners. Many of the results focused on individual search criteria. When combined,

such as *self-efficacy* and *online learning*, the results were very few in number. Hannafin et al. (2003) note this same observation, yet feel a relationship between self-efficacy and online education is worth researching (p. 248).

The databases available through the Alvin Sherman Library are quite diverse. I chose to use sources from Wilson Web® and E-Access Encyclopedia from Idea Group. Wilson Web was highly recommended as a credible source of educational articles from the library. Through my search I came across E-Access Encyclopedia from Idea Group. E-Access is a special subscription available only to libraries and makes select published Idea Group encyclopedias available in a database-like form. The articles I pulled from E-Access were from the *Encyclopedia of Distance Learning,* which was published during the spring of 2005. I considered this source of information quite valuable and credible based on the authors of the articles.

A secondary source of information came from my academic peers. This information was mostly personal ideas, concepts, or experiences that had been shared via online discussion postings. I found practical value in this source of information. Many published articles are based on theory or concept, whereas discussions amongst peers may include actual experiences. These practical experiences, in some ways, test the theories or concepts often presented in published articles. At the very least, the discussions are thought provoking and often lead to further inquiry.

Analysis & Discussion

A Review of Self-Efficacy

The more motivated a learner is and the more confidence a learner has, the more likely the learner will be able to succeed in his or her education. Highly-motivated and confident learners "participate more readily, work harder, persist longer when they encounter difficulties, and achieve at a higher level" (Margolis & McCabe, 2004, p. 241). Learners like this are considered to have high self-efficacy, or confidence in their ability to achieve the objective at hand. Conversely, learners who do not have confidence in their ability to achieve the objective at hand are considered to have low self-efficacy, and therefore, struggle with their education.

Many of these struggling learners are potentially exceptionally good learners; however, have lost interest in education (Protheroe, 2004, p. 46). The reasons why these learners have lost their interest are varied and extensive. Protheroe (2004) identifies the following as reasons for lost interest: lack of relevance; fear of failure; peer concern; learning problems; lack of challenge; desire for attention; emotional distress; and expression of anger (47). Learners who experience any of these reasons are at risk for developing a low self-efficacy.

Educators, however, have access to methods of instruction that can reverse the impacts of past negative experiences on struggling learners. Through achievement goals, strategy use, scaffolding new information based on recent success, peer mentoring, and reinforced effort and persistence, educators can help increase the self-efficacy of struggling learners (Margolis & McCabe, 2004, p. 241; Protheroe, 2004, pp. 47-48). These methods, along with careful attention to daily educational activities, are the variables in the equation for increasing self-efficacy.

Margolis and McCabe use reading levels as an example of a daily educational activity that may directly impact a learner's self-efficacy. They discuss the three levels—instructional, independent, and frustration. Each level is based on the learner's self-efficacy in a given educational environment. Typically the environments represent whether the learner is in a group, such as a classroom with a teacher (instructional level); or alone, such as at home doing homework (independent level). The frustration level can occur in any educational environment when the learner does not feel he or she can achieve the objective (Margolis & McCabe, 2004, pp. 241-43).

Identifying these levels for learners is usually done by measuring performance based on an objective, such as being able to read a set percentage of words from a passage aloud and understand another percentage of those words (Margolis & McCabe, 2004, p. 242). The higher the set percent is represents an instructional level, followed by the independent level at a lower percent, and even lower is the frustration level. Margolis and McCabe (2004) state that tasks such as homework need to be at a learner's independent level because instructional level homework is basically the same thing as assigning frustration level homework since there is no teacher or classmate present (242). The daily educational activities of the learners need to be carefully planned so individual levels are not exceeded. The educational environment, traditional classroom or online, plays a role in the way daily educational activities should be planned.

In the traditional classroom environment an educator may have learners who fall into every segment of the self-efficacy spectrum; some with very high self-efficacy to those with very low self-efficacy. If the educator instructs at a level that challenges the learners with high self-efficacy then the self-efficacy of struggling learners could be lowered even farther. On the other hand, if the instructor instructs at a level that is appropriate for learners with low self-efficacy

then those with high self-efficacy could be hindered, due to minimal challenge. The educator in this environment needs a structured methodology for helping the struggling learner while at the same time not hindering the successful learner.

For the online learner, many of the tasks that must be done as part of their education are done in isolation—usually at home and at times that are convenient in their schedule. This isolation makes the online learner an independent learner. Therefore, it is important that instructors of online education do not assign tasks that are above the learner's independent level of learning. An online learner may easily feel alone, without the guidance of a teacher or presence of classmates. Although this feeling of being alone is not the intention of online educators, it is often a realistic development.

Online Education

The Internet and World Wide Web are tools often used in distance education. Effectively implementing and doing online education can require some major shifts in thinking and practices on the part of both the educator and learner. At the core of online education is a separation between the educator and the learner as well as between learners. Also related to online education is requisite technology, and the knowledge of hardware such as computers, fax machines, software, and technology support staff. These are significant differences between traditional classroom education and online education. A full discussion of the characteristics of online education is beyond the scope of this paper; however, a few of the more major characteristics are related to the topic of self-efficacy for learners in online education.

Online education may seem far less structured than traditional classroom education. Many online courses do not have a regularly scheduled class meeting, which is far different from

the traditional three credit hour course that meets three days a week for one hour in the same classroom for 15 weeks. Rather, an online course may meet in the online (virtual) classroom on Monday of weeks 1, 2, and 3, but not on weeks 4, 5, and 6. Beyond the non-conventional schedule for online education is basically a completely new educational environment. Hannafin et al. (2003) refer to the Internet as a "potentially confusing and uncontrollable new environment" (p. 248). For those learners who feel their abilities are stagnant and set, the dynamic online environment may have a negative impact on their self-efficacy. Effective online education lessens the effect the new environment has on the learners.

Much of the responsibility for effective online education is put onto the educator (Simonson et al., 2006, p. 186-87), even though online learning is considered to be learner-centered, rather than instructor-centered. The online educator needs to have a clear understanding of the dynamics of an online class. The various separation factors (time, geography, and knowledge), usual lack of face-to-face non-verbal communications, and dependence upon technology—much of which is beyond the educator's control—are issues that need to be considered long before the first online class meeting. If any of these issues should become problematic during a class meeting, the learners could become frustrated, which could be a direct impact on their self-efficacy.

A central means of avoiding or overcoming online issues is to encourage open and frequent communication within the class. Learners should feel they may contact the educator whenever they need something clarified or critiqued. This also goes for inter-learner communication. Academic peers may be able to offer valuable insights or clarifications amongst themselves.

Another means of communicating with the learners is through the course syllabus. Ko & Rossen (2004) stress the importance of a detailed syllabus that goes beyond the traditional classroom syllabus (65). Learners need to have a clear understanding of their instructor's expectations, all of the details for each assignment, and clear explanation of all course policies, such as due dates and times (including what time zone).

For the online learner, much of the traditional educational environment has been altered in some way, if not removed. Therefore, the online learner is faced with an environment that may be new to them. It is possible that an unfamiliar environment could lower the self-efficacy of a learner because they feel lost, or alone. Online educators need to help learners avoid a drop in self-efficacy by carefully supporting that an online education can offer an equivalent experience to a traditional classroom education. This can be accomplished by reinforcing the abilities, peer group, and learner-centered focus of online education (Hannafin et al., 2003, pp. 248).

From Pedagogy, through Andragogy, to Heutagogy

The roots of modern traditional education are heavily influenced by a teacher-centered learning environment based on the principles of pedagogy (Hase & Kenyon, 2000, Heutagogy section, para. 1). Pedagogy is often viewed as a practice where the teacher teaches and the learners learn from only what the teacher teaches (Hase & Kenyon, 2000, Heutagogy section, para. 1; Eberle & Childress, 2005, p. 1946). A learning environment structured in this way limits the independence of the learners. Very little latitude is permitted for the learners to identify the best way for each of them to learn the material.

During 1970, Malcolm Knowles presented the field of education with a concept that adults and children learn differently, thus they need to be taught differently (Hase & Kenyon,

2000, Abstract)—the focus shifted from pedagogy to andragogy. Educators who implemented principles of andragogy into their educational environment took the first steps to creating a more open learner experience. Although still teacher-centered, learners were given latitude to identify ways for each of them to learn (Eberle & Childress, 2005, p. 1946). Knowles continued his research on adult learners and in 1984 came up with

> … five main characteristics of adult learners: 1) adults need to be self-directed; 2) they have a wide variety of experiences from which to draw; 3) they have a readiness to learn relevant information; 4) their orientation to learning is more life centered than subject centered; and 5) they typically have barriers that they must overcome in order to be effective learners (Eberle & Childress, 2005, p. 1946).

At the same time as Knowles was researching andragogy and adult learners, the technology of information sharing was growing rapidly (Hase & Kenyon, 2000, Heutagogy section, para. 3). Computers were entering homes and the Internet was expanding. Information was now much more easily accessible. The combination of Knowles' characteristics of adult learners and the methods available for information retrieval prompted the change from andragogy to heutagogy.

Whereas pedagogy and andragogy are both teacher-centered, heutagogy is truly learner-centered. The belief is that learners require an open learning environment where they can identify the best way to learn and have the instructor to turn to for facilitation when they encounter difficulties (Hase & Kenyon, 2000, Beyond pedagogy and andragogy section; Eberle & Childress, 2005, p. 1947). The goal for most practitioners of heutagogy is to produce a more capable learner. "Those who: know how to learn; are creative; have a high degree of self-efficacy; can apply competencies in novel as well as familiar situations; and can work well with others" (Hase & Kenyon, 2000, Beyond pedagogy and andragogy section, para. 7).

For the online learner, an educational environment that is based on heutagogical principles may seem more achievable than one that is pedagogical or andragogical. The latitude offered for self-discovery and highly relevant practice (assignments) may decrease the chance the learner will doubt his or her success.

Conclusions

A Case Study

A review of a case study originally published in 2003 that focused on instructional design techniques for educating students deemed to have low self-efficacy resulted in some assumptions that support heutagogical principles being a positive influence on self-efficacy. The study compared two groups of students—37 enrolled in a structured curriculum specifically designed to test the study's theory and 15 enrolled in a traditional remedial curriculum. The researcher suggests "that learner centered academic structured programs are a viable form of school intervention for students at academic risk whose self-efficacy beliefs seem low and debilitating" (Alfassi, 2003, p. 38). The researcher further concludes that the instructional methods used by schools directly impact the self-efficacy of the learners and that schools that identify at risk learners should take measures to alter the instructional practices (Alfassi, 2003, p. 39).

Synthesis of Self-Efficacy, Online Education, and Heutagogy

This review of some of the literature on self-efficacy, online education, and heutagogy seems to suggest that there are instructional theories or practices that are in the best interest of the learner. Educators have a responsibility for providing learning environments that foster success, regardless of the instructional technology used. When the instructional technology is online education, much of what the learner is familiar with has taken a new shape or no longer exists. A new environment like this may further decrease an at-risk learner's self-efficacy because of the unfamiliarity—feelings of loneliness or abandonment may set in. However, educators have the tools available to them to prevent or address issues of loneliness or

abandonment. Further, implementing heutagogical principles into the educational environment may present learners with a situation that supports their personal goals.

The idea of grooming capable learners was presented in some of the literature. Perhaps this is another avenue for which educators to follow to identify the precursory events to learner disinterest. Eberle and Childress (2005) suggest that giving attention to the needs of individual learners and supporting a learner-centered environment may result in an empowered learner who is then able to address his or her own self-efficacy (p. 1950).

It is possible to assume with the current mix of pedagogical, andragogical, and heutagogical principles being used in today's education that there will still be learners with low self-efficacy. Based on this assumption, it appears a paradigmatic shift to heutagogy is needed. Much more research on learner success in heutagogical learning environments is needed to dismiss or validate this assumption.

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