

Learning Styles: A Focus upon E-Learning Practices and their Implications for Successful Instructional Design

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Abstract

With the proliferation of online learning into the K-12 learning environment, the focus of investigation needs to shift specific studies that pertain to this environment. One such area of investigation surrounds the development of specific online course content and the individualized learning styles of the students in these online learning environments. This review focuses upon the vast body of literature for the post-secondary online learner and argues the case for additional research in K-12 education. While recent studies have started the process of changing this focus, as online learning becomes more prevalent and accepted as a means of learning at the K-12 level, instructional designers and e-teachers must account for the fact that learning styles of K-12 learners will require different approaches to the delivery of online instruction.

Introduction

A great deal of literature begins with statements related to the proliferation of technology in education. Certainly the deluge of technology and its impact upon the field of education is very real. One of these impacts has been the development of web-based delivery of education, often called online learning, e-learning, and distributed learning (among others). This medium of delivery has grown steadily with improved connectivity, feasibility of access and, of course, the production and availability of educational content. However, until recently there has been a less than adequate concern regarding the quality of content delivered through web-based systems and the implications as it pertains to individual student learning styles. As supported by Muir (2001), online courses “need to develop learning activities which address different learning styles” (p. 5). This is consistent with more recent findings by Garland and Martin (2005), who concluded that “when designing online courses the learning style... of all students must be considered” (p. 1).

The focus of technology efforts in the K-12 classroom to date have been on the introduction of technology into the curriculum instead of the delivery of that curriculum through technology. It has now become apparent that the focus must turn to the development of quality learning systems. Siragusa (2000) states that “we are moving beyond asking if [the Internet] is an acceptable medium to use for learning and we are now asking how *best* to use it” (p. 1). This is consistent with others, such as Cuban (2001), Noble (2001), Postman (2003), and Reeves (2003), who have questioned the rationale for investments in online education in higher education.

This change in thinking and in practice has become more apparent from institutions of higher learning before filtering into the k-12 classroom. For example, Lefoe (1998) first identified with this change at the undergraduate level, noting that many web-based courses have already made the transition from “the provision of lecture notes on the web to [an increase in] providing avenues for communication and interaction, through

synchronous and asynchronous discussion” (p. 462). Another, more recent examples include Cramer, Collins, Snider and Fawcett’s (2006) positive evaluation of student performance with a virtual lecture tool or Gülbahar and Tinmaz’s (2006) examination of the use of e-portfolios as a form of project-based assessment.

It is imperative then that instructional designers, whether they are professors, K-12 educators or other professionals, need to consider the multitude of issues regarding the online learning environment, including students’ individualized learning styles. This is not to suggest that current models and practices of instructional design are not valuable, but there are notable differences between classroom instruction and web-based instruction need to be taken into consideration. Early in the proliferation of e-learning, Ritchie and Hoffman (1996) identify the utilization of the World Wide Web as entering into a ‘new dimension’, specifically regarding the delivery of instruction, and they suggest that it will require “thoughtful analysis and investigation of how to use the Web’s potential in concert with instructional design principles” (p. 4).

Based on this premise, the purpose of this article will focus upon a few of the issues which need to be addressed when developing and delivering instruction to be utilized in the online learning environment. How can instructional design meet the needs of learners in terms of their individualized differences? How can e-teachers best deliver such content in a manner that meets the needs of the learners? An undertaking which will not be inclusive of all the possible issues but will attempt to shed some light on the monumental task that instructional designers and e-teachers face in their quest to develop online environments best suited for optimal student learning.

Literature Review

Until recently, research surrounding instructional design and e-learning has focused primarily upon post-secondary education and applications in the business world. These findings have then been translated to fit the K-12 school environment. Considering the learning characteristics of K-12 learners as compared to their post-secondary counterparts, there is a need to provide results and recommendations which are more suited to K-12 learners. As e-learning proliferates into the K-12 education system research results are beginning “to guide the development and initial implementation of online e-learning in K–12 schools” (Blomeyer, 2002, p.5).

As such, this method of delivering the curriculum to secondary students is viewed as a part of a larger phenomenon where, “virtual schooling...is cresting several years after the maturation of e-learning in higher education” (Clark & Berge, 2003, p.1). The focus, however, in higher education has been primarily on asynchronous methods of course delivery rather than on synchronous systems. Students utilize course content, e-mails, discussion postings and other related materials via an asynchronous system, such as WebCT, Blackboard, or eCollege (to name the prominent systems utilized in the virtual schooling movement – see Freedman, 2005). Recent developments in software design are now permitting e-learners access to virtual classrooms with synchronous communication with their “e-teacher.”

One issue that has come to the forefront is the nature of the learner and the impact that this knowledge can have on their potential success. With the convenience and flexibility of e-learning, learners often neglect to consider the, “appropriateness of online instruction for their individual learning behaviours and characteristics” (Kaminski, 2002, p. 1). For example, institutions delivering e-learning programs seldom provide surveys for potential e-learners in order to determine if e-learning is an appropriate choice. This is supported by Russell, 1999 and Kearsley, 2000 (as cited in Liu, Lavelle, and Andris, 2002) that initial “research involving the effects of online education has emphasized dimensions such as the learner’s performance and course evaluation but has largely ignored the role of student characteristics as linked to instruction” (p. 1). This also applies to e-teachers who ultimately interact with learners throughout the delivery of the course. As supported by Sherry (1996),

“effective learning, however, requires both knowledge of learner styles and advance preparation on the part of the teacher” (p. 346). This may have an impact on learner success and their overall performance and enjoyment of the e-learning environment. By understanding more about the e-learner, and their individual learning styles, it may be possible to enhance their learning. As noted by Du & Simpson (2002)

If we can find variables that impact student success, we might be able to design courses according to the students’ preferred learning styles to help bridge the gap of not knowing the students as well as in a face-to-face environment. (p. 4)

One of the factors influencing this reform towards e-learning has been research pertaining to learning theories. Valdez, McNabb, Foertsch, Anderson, Hawkes and Raack (2002) believe that, “technology can and does help students develop all kinds of diverse skills from the basics to higher-order thinking” (p. 26). The effective utilization of technology includes:

employing research and best practices to match technology software to the curriculum and the developmental needs of learners; to customize content area learning; to enrich learning experiences with communications and links to others beyond the school walls; to offer new learning opportunities; and to help learners see the value of learning by applying knowledge and skills to real-world tasks. (Valdez *et al.*, 2002, p. 26)

McNabb, Valdez, Nowakowski and Hawkes, (1999) also identify the importance of utilizing technology in learning in that it, “should be used to enhance and extend each practice to better meet the needs of students in striving towards higher levels of achievement” (p. 14).

Understanding students’ learning styles has been identified as an important element for e-learning development, delivery and instruction, which can lead to improved student performance (Shih & Gamon, 2002). Further, Magoulas, Papanikolaou and Grigoriadou (2003) speculated that in order to expect the enhancement of the Web as an instructional medium, one must recognize “students’ learning needs, the diversification of learning styles, [and] preferences with respect to specific learning processes” (p. 512) Du and Simpson (2002) concluded that in e-learning, “it is good practice for online instructors to incorporate students’ learning styles into pedagogical design of their courses to maximize student’s success” (p. 10). A simple awareness of differences in student learning styles is a vital for educators in order to aid the learning process (Diaz & Cartnal, 1999, p.1).

There are many varying views and beliefs concerning learning styles and several theories each with their particular focus. Which style does the e-teacher utilize when developing instructional strategies for online learning is undoubtedly a challenging task. As Hood (1995) notes, “realistically, a teacher cannot be expected to have a different lesson for every child in the classroom, however, lessons can reflect an understanding of individual differences by appropriately incorporating strategies for a variety of learning styles” (p. 3).

However, it also cannot be dismissed by instructional designers and e-teachers. For example, considering Kolb’s theory of experiential learning and its relationship to e-learning, Ally and Fahy (2002) concluded that students that were identified as assimilators required the most support in e-learning. Divergers and accommodators required less but this may be due to their reliance upon other learners rather than their e-teacher. They also found that convergers were the most active in the e-learning environment. Their findings led them to conclude that in the e-learning environment e-teachers must, “ensure that adequate support strategies are provided for students with different learning styles” (p. 5). Buerck, Malmstrom and Peppers (2003), who have endeavoured to determine if there was a link between a learners’ learning environment and their preferred

learning style, also found that “students in the on-line Internet-based section of the course were more likely to have the Converger learning-style type” (p. 149). These conclusions, and others like them, must be taken into consideration when designing and delivering e-learning. Instructional designers and e-teachers must be aware of the nature of the learning styles of their students. Will most students enrolled in courses with a virtual high school have a converger learning style? Realistically this is not the case. Since students are enrolled in these courses based upon need, there will be students with all learning styles. As such, it becomes even more important that instructional designers and e-teachers design and deliver course content that will meet the needs of their all students.

These applications of individual intelligences as they pertain to technology “can be used to facilitate learning in each intelligence area. There is no “right way” to integrate intelligences or technology into the classroom. The key is to provide the most effective learning environment for students” (Lamb, 2004, p. 1). To accomplish this task Giles, Pitre & Womack (2003) recognize and identify three steps when implementing learning style-based instruction; 1) diagnosing the individual learning styles of each student, 2) profiling group preferences and weakness, and 3) assess the current instructional methods to determine whether they are adequate or require more flexibility.

Role of Instructional Design

Change continues in the field of education as a result of the influence of technology and certainly models of instructional design are not exempt from this influence (Hakkinen, 2002, p. 463). This influence has been observed by Gustafson and Branch (1997) who have stated that “practically all ... early [instructional design] models were based in behaviorism” (p. 1). Today with the technological influence in education we are witnessing a shift in thinking which requires a re-visioning of the classroom. This includes a re-examination of the role that instructional designers and instructional design models play in this process. Lefoe (1998) when referring to web-based courses contended that at that time, the current instructional design models did not provide “effective strategies for designing constructivist learning environments.” She qualifies this belief by further noting that “good instructional designers have always moved beyond the models by adapting and manipulating them for a specific content” (p. 462).

This is not to imply that existing models of instructional design do not have a function to play. On the contrary, they are extremely important in the present development of instruction. For example, Mayer (2003), which focused upon the utilization of instructional design in multimedia learning, concluded that the principles of instructional design should not change with the medium but good instructional design methods can work across media. In addition Mayer (2003) noted that “there are some aspects of good instructional design that are unique to a particular medium” (p. 136). This is consistent with the views expressed in Kozma (1994).

According to Hakkinen (2002), the premise behind instructional design models is to describe and support the essential elements of a learning environment (p. 463). More specific to online learning, Siemens (2002) extends the role of instructional design to note that “[instructional design] is the process whereby learning, not technology, is kept at the center of learning development” (p. 1). Therefore, to exclude previous models of instructional design would be to forgo the knowledge that has been developed as a result of the instructional design process.

The concern is that too many instructional designers designing for online learning environments are overlooking prominent instructional design principles. Siragusa (2000) stresses this issue, “[although] the Internet is a unique environment requiring unique considerations, the work produced by instructional designers of the past cannot be ignored” (p. 1). This is consistent with the views expressed more recently by Burke

(2005), who argued that institutions of higher education should train online faculty in instructional design. It is important to remember that the foundations of the various instructional design models will impact upon the current process of developing instruction for online learning and do have a vital part to play in this process.

Influence of Learning Theories

In order to proceed with a discussion pertaining to instructional design in an e-learning environment, it would be remiss not to mention the important role that learning theories play in the process. Is there a particular learning theory that should be the focus during the process of instructional design for online learning? Should instructional designers consider elements of one of behaviorism, cognitivism or constructivism as they endeavor to design instruction?

The answer to these questions, in terms of online learning, is not straightforward but tends to lead one to focus upon technology and what it enables in terms of learning. That is, the promise of online learning posits that the learner is the focus of learning and not the content. Gustafson and Branch (1997) when referring to today's classroom note that with the emergence of online learning, "instructional developers [will need] to move away from developing teacher-centered...instruction" and focus more upon the development of "environments and conditions that facilitate student-centered, guided learning" (p. 82).

This student-centered approach has been attributed to a constructivist mode of thinking and has been promoted as a result of technological advancements. Mergel (1998) notes that with the development of hypertext and hypermedia a more branched design rather than linear format of instruction can ensue. This non-linear fashion of instruction should permit learners with opportunities to create their own learning thus leading away from a more directed approach of instruction. More recently, Hill, Wiley, Nelson and Han (2004) described this non-linear fashion of instruction as a move "from learning from and with the Internet" to "learning through the Internet" (p. 434).

Furthermore, by providing a learning environment which permits self-directed learning, at a pace that meets the needs of the learner, it is hoped that learners will become more active in their learning. Jonassen, Carr, & Yueh (1998) provide a more concise description as it pertains to learners being active. They view the concept of learners being *active* as follows:

In constructivist environments...learners are actively engaged in interpreting the external world and reflecting on their interpretations. This is not "active" in the sense that learners actively listen and then mirror the *one* correct view of reality, but rather "active" in the sense that learners must participate and interact with the surrounding environment in order to create their own view of the subject. (p. 13)

Certainly designing for a learning setting that promotes learner action and interaction is but one challenge for the instructional designer. This also conjures up concerns related to the structural and dynamic characteristics of online learning. How can the instructional designer formulate content whereby a non-linear type of activity takes place? Is it possible to deal with all of the variations in learning?

These variations and the student-centered approach as described by the preceding observations may support a constructivist approach to learning in an online environment, however, many researchers accentuate the importance of giving due consideration to all learning theories throughout the instructional design process. These theories should be a "source of inspiration, insight, and new perspectives" as they relate to instruction and its design (Wilson, 1995, p. 10). If the learner is to be the center of instructional design then certainly

instructional designers “will require a thorough understanding of learning theories to enable them to provide the appropriate learning environment” (Mergel, 1998, p. 28). Rather than developing instruction with a narrow focus the instructional designer should be open to various ideologies and consider the impact that they may have on the process. Certain aspects of each theory may have a role to play and the instructional designer may purport that these theories are the underlying philosophy instead of a directed strategy for design (Wilson, 1997, p. 3).

Issues and Concerns

The main tenets for developing learning environments delivered via the Internet explicitly focus upon the needs of the learner and their interactions within the learning setting, which is representative of a constructivist approach to learning. Siemens (2002) supports this notion when he states that “[the] greatest objective of ID is to serve the learning needs and success of students through effective presentation of content and fostering of interaction” (p. 3). Gustafson and Branch (1997) reiterate the importance of a student-centered approach noting that it represents an “epistemological shift from regarding students as the occupants of learning spaces, to regarding the actions of students during guided learning as the prime motivation for the development of instruction” (p. 83). This belief of placing the students at the center of the development process has implications for instructional development especially in terms of online learning.

Where should an instructional designer begin? With the many models that exist there seem to be common elements which describe the process of instructional design. Gottschalk (1995) describe a model with four stages of development including; design, development, evaluation, and revision, where the additional stage of analysis, as described by Gustafson and Branch (1997) is included in the design stage. These stages in the instructional design process provide the framework for developing a learning environment, one where learning is “fostered and supported” (Wilson, 1995, p. 4). In a summative fashion, Gustafson and Branch (2002) discussed numerous instructional design models in relation to the ADDIE model of analysis, design, development, implementation, and evaluation.

If the stages of the design process remain intact, regardless of the learning setting, what considerations need to be acknowledged when designing for an online learning environment? Are there issues that need to be recognized that would alter instructional designers’ actions? Siragusa (2000) does recognize the distinctiveness of online learning stating that “[online] learning environments do possess unique characteristics as compared to other mediums, which need to be considered in order to promote and enhance learning process (p. 9). Furthermore, Siragusa (2000) categorizes the common issues that he identified from various authors into the following headings:

- Structure
- Content
- Motivation and feedback
- Interaction (communication)
- Involvement (activities)

Although there are may be many variations of these categories, if due consideration is given to the issues, an instructional designer should become more aware and prepared to deal with these issues in light of designing instruction for the online setting.

Similar to any learning situation, the makeup of the e-learning setting presents many challenges to the instructional designer, especially since this is where learners will navigate their way through the material as

presented online. This area can be a great source of frustration for learners if they cannot find their way to their intended destination. Grady (2000) states, instructional designers need to be aware of the “learner’s tendency to browse when they are bored or lose interest in the instructional materials” (p. 5). In order to overcome this issue designers are encouraged to make materials relevant and aesthetically pleasing to the viewers. However, it is imperative that the message does not get lost in the design. Multimedia is a useful tool but it should be utilized to foster “meaningful learning” (Mayer, 2003. p. 128).

The focus upon content is often defined as the first step in the process beginning with the learning outcomes. Grady (2000) states the importance of identifying learning outcomes in the initial stages of design because they “they give students a clear understanding of the learning task”, and “they keep the designer/instructor focused upon the learning process” (p. 1). It is also important to ensure that the content is relevant to the learner. Enabling students to make connections with past knowledge and build upon this will foster motivation for improved learning. Motivation to learn is also fostered through prompt and frequent feedback. This may occur through assessment as a means to draw students into the learning experience. Drummond (2003) identifies that there is “mounting evidence that instruction and assessment must be integrated, particularly in an online environment, to engage learners and maximize learning” (p. 3). Designing authentic assessment for the online learning setting is not without its challenges. Simply transferring assessment tools utilized in face-to-face settings to the online setting does not constitute authentic assessment (Drummond, 2003, p. 2). The challenge then, is to ensure that authentic assessment tools are developed for the online learning setting in order to optimize learning.

Fostering motivation and active involvement can be encouraged through many design features, especially through effective communication. A great deal of research has focused upon the social issues surrounding online learning and the importance that building online communities can have on promoting learning. This “[focus] on [the] social dimension of learning confronts instructional designers with the challenge of building interactions between learners and their environment” (Hakkinen, 2002, p. 465). The caution for instructional designers is when designing for online communication not to presume “that students can communicate, that is, that they can meaningfully participate” (Jonassen, Carr, & Yueh, 1998, p. 10). This is without a doubt a daunting task, but one that can have serious implications towards the success or failure of learning online.

In order to support the design process instructional designers may wish to consider the eight questions posed by Backer (2001) when designing specifically for a web-based setting. They are:

1. Who are the learners?
2. What will be the learning outcomes of the multimedia subject, or course?
3. What will be the content of the multimedia, subject, or course?
4. How will the content be ordered?
5. What teaching methods/learner activities will be used?
6. What media will be used?
7. How will the learning be assessed?
8. How will the subject/course be evaluated for improvement?

Students enrolled in course through virtual schools are comprised, at the present time, primarily of students in secondary schools. In the past distance education provided, for the most part, academically minded students with a means of accessing only a select few courses. The present system has opened the doors for a greater number of students from varied levels of academics. It is not only the student wishing to pursue a degree in engineering that can enroll now but students that simply wish to fulfill their graduation requirements can also

take part in e-learning. Thus, the typical definition of a distance education student has now been expanded to include the whole spectrum of learners. The implications are vast in terms of developing a system which now must foster learning to such a variety of unique learning styles and characteristics. Certainly creative initiatives will be necessary in order to reach such an array of learning styles and characteristics.

The learning outcomes, curriculum content, and order in which it is delivered is presently the responsibility of the department of education. The responsibilities of the virtual high schools lie in the preparation and presentation of the curriculum content via an e-learning system. This requires, among other things, the expertise of content developers which must be ever mindful that their individual bias does not negatively affect the design of the learning content. As noted by Lockett (1997), "if the person producing [the course content] has a preference for visual images rather than audio, this bias [may] affect the type of [learner] that could benefit from it" (p. 22). This means that they too must be ever mindful and attune to the unique characteristics of the learners that will be utilizing the subject content. The designer must also realize that the e-learning model for these virtual high schools incorporates a combination of synchronous and asynchronous facilitation which compounds the challenges for such a diverse learning environment. This includes not only the posted asynchronous content, but the synchronous interaction that the learners have with their e-teachers.

In preparation for synchronous instruction, the e-teacher is only limited by time and money. The possibilities for the development of a varied learning environment online are as numerous as the creativeness of the e-teacher. It is however, important to consider the sound application of certain methodologies. Not all applications of technology are supportive of each subject area or curriculum outcome. The e-teacher must discern what is most appropriate for the nature of the course content to be presented. Having stated this, it is also important the e-teacher expand their repertoire of instructional strategies in order to reach the varied learning styles of their students. This requires e-teachers to be continually developing and learning, even as their students must.

In terms of assessment, any e-learning system must have continual, effective, inter-agency evaluation in order to grow and meet the needs of its users, the student. This includes the development of effective assessment pieces for each subject area, the assessment of the delivery model, the e-teachers, and the assessment of e-learning tools to name a few areas. The individuals assessing the system must have a working knowledge of e-learning and be impartial so as not to allow individual biases affect the assessment process.

These questions deal with the more specific aspects of online learning and can provide a foundation for instructional development. For many inexperienced practitioners these questions may also provide additional support as they endeavor to develop instructional content for use online.

Bates and Leary (2001) further postulated that instead of focusing upon one learning style and teaching to that particular learning style, a varied teaching approach should be considered in order to reach learners where they are. They suggested four different approaches organized in a manner to support sequential learning. They included: a) drill experiment, b) tutorial experiment, c) simulation experiment, and d) modeling experiment (p. 47). Is this the approach that instructional designers and e-teachers should foster? Can a system be developed which provides for a variety of instructional content and delivery methods which reach all learning styles? This would then require e-learning systems to be even more flexible in their attempt to reach the diversity of learners utilizing the system.

Recommendations for Further Investigation

E-learning will continue to filter into the k-12 learning setting. This trend will certainly pose many challenges for all stakeholders in education. Understanding student individualized learning needs must play a role in the development of online content and the administration of e-learning via a specified delivery system. Designers, administrators, and e-teachers must begin to adhere to system development whereby learners' needs are first identified and then all possible attempts are made to ensure that these needs are satisfied.

This seems like an insurmountable task but one that must have a beginning. It is recommended that further study specific to K-12 students serviced by these virtual high school be administered to determine the effectiveness of present course content as it relates to individual students learning styles. It is not sufficient to simply provide the tools but as Raab (2004) has quoted Bates (2001, p. 1), we must, "also provide the appropriate support for the diversity of individual student learning styles" (p. 3).

It is also recommended that course design be flexible enough to reach a variety of learning styles. One such example is described by Bates and Leary (2001) which provides a four tier delivery approach whereby the student progresses sequentially through each level based upon their learning needs (p. 47). Irrespective of the approach and content, the one critical component which must be in tune with changes in learning and should create the momentum for change, is pedagogy. Without sound pedagogy e-learning will not enable learners to reach their fullest potential, that is, "[t]he potential of e-learning is released by the pedagogy that reforms its application (Ghaoui, 2004, p. 154).

Conclusion

What are the implications for e-learning and the integration of learning styles as a means to support learning? In this time of technological focus, where online learning is becoming common-place, e-teachers have a daunting task to ensure that students of varying learning styles are supported through sound instructional pedagogy. "Specific attention must be given to online student learning styles. The opportunities extended by distance education cannot be taken advantage of if, during implementation, they replicate the problems found in traditional classrooms" (Kaminski, 2002, p. 7).

E-teachers are now faced with new challenges with old nuances. The outcome is still the same, to support learning in the best possible manner with the tools that are available. The knowledge of learning styles certainly can impact an e-teachers methodologies and practices as they endeavor to reach into the virtual classroom and support each learner and their specific needs. Blomeyer (2002) provides a succinct thought on this subject summing up where the true focus should lie. With all of the discussion surrounding technology and learning,

in final analysis, online learning or e-learning isn't about digital technologies any more than classroom teaching is about blackboards. E-learning should be about creating and deploying technology systems that enable constructive human interaction and support the improvement of *all* teaching and learning. (p. 19)

By utilizing the knowledge gained through learning style inventories and descriptors, the e-teacher should have a greater repertoire of skills to support learning in the virtual classroom and ultimately reach out through and beyond the tools in order to provide quality instruction for all learners.

Online learning presents a different setting for learning where “the technologies are taken away from the specialists and given to the learner.” In this respect, “learners function as designers using the technology as tools for analyzing the world, accessing information, interpreting and organizing their personal knowledge, and representing what they know to others” (Jonassen, n.d.). This setting also presents a multitude of new challenges for the instructional designer. Certainly this overview does not cover all the possible issues nor does it delve into the intricate details regarding each issue specific for all virtual schools. It will take a thorough and continual re-examination of practices in order for each issue to be addressed appropriately. Only then will e-learning systems improve such that they provide the best possible learning setting for students.

Instructional design as a functional process will not fade but will evolve as new and emerging ideas are examined and investigated. The importance of instructional design is vital regardless of the learning setting. Moellem (2001) reaffirms this notion when he states that “[employing] instructional design principles and models in creating [online learning environments] can help ensure that what is produced is of high quality and is able to present significant challenges to students” (p. 1). As noted earlier, we have moved beyond accepting the Internet as a medium for learning, now the focus must shift to developing quality learning for the online setting. Ultimately the goal ought to consist of designing instruction which will foster and enhance learning for each student regardless of their individual differences and irrespective of the setting for learning.

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