

Engaging Online Kinesthetic Learners In Active Learning

Nancy WOOD

Department of Human Services, Saint Leo University
Saint Leo, Florida

and

Christine SERENI-MASSINGER

Department of Public Safety Administration, Saint Leo University
Saint Leo, Florida

ABSTRACT

This article will examine instructional strategies to engage the kinesthetic learner to implement active learning in the online learning environment. Online learning tends to provide lectures to listen to and reading assignments, providing little opportunity to actively apply course content. With today's computer-mediated learning environment, further discussion on what educational practices are required in order to develop active learning skills in an online class setting is needed. A high percentage of learners have a kinesthetic preference. Preliminary research has revealed that of the learning style preference categories, kinesthetic learners may be the least engaged in the online learning environment. The replication of real-life experience engages the kinesthetic learner and promotes active learning in the online environment. Taking into account the various learning style preferences of students and providing opportunities for self-directed and collaborative learning, educators can facilitate rigorous online knowledge exchange geared to achieving identifiable learning outcomes and active learning engagement. The following active learning strategies will be discussed: reality-based scenarios, case studies, inquiry based dialogue, gaming and role-play. Providing such 'hands on' activities, combined with personal experience provides an environment that allows students to experience high interaction and experimentation with the course materials.

Keywords: kinesthetic learners, learning style preferences, active learning, online

1. INTRODUCTION

Learning style theorists posit that individuals have a preference for the way in which they acquire information. Several learning style theorists propose that instructors who are able to identify the individual learning style preferences of their students can encourage more engagement and active learning when customizing their content in a manner that appeals to the individual learner [15], [26]. Preliminary research has revealed that of the learning style preference categories, kinesthetic learners may be the least engaged in the online learning environment. Kinesthetic learners prefer experiential learning versus learning by what is stated or read. Some theorists contend that by the nature of the online environment, visual and read-write learners are more engaged than kinesthetic and aural learners [8], [13].

Learners are predominantly multimodal. A high percentage of learners have a kinesthetic preference [2], [21]. This learning style preference may be the primary or secondary learning preference of a student. Approximately 50-70% of individuals have a multimodal preference for learning [10]. Providing learning opportunities geared to this learning style preference is statistically relevant. If an online course is designed with practical application in mind, the kinesthetic learner can benefit [14]. Customizing active learning content in the online environment that includes reality-based scenarios, role-play and other interactive learning strategies can improve the kinesthetic learner's engagement.

2. LITERATURE REVIEW

Numerous researchers have opined different learning style preference theories. The VARK learning style preference inventory categorizes these four preferences according to: Visual, Aural, Read/Write and Kinesthetic [10], [19]. According to Fleming and Baume [10] visual learners are comfortable with graphs, charts and visual aids. It is the sense of sight that allows these learners to process information. Aural learners take information in by discussion, debate and lecture. These learners acquire knowledge best learn when the information is spoken to them. Read/Write learners prefer lecture notes and printed textual material in their learning process. It is the written word that is important to these learners. The kinesthetic learner thrives in activities and learning by doing [10], [30]. These learners perform best in active learning environments where they are involved in the process [6].

Fleming discusses the multimodal preferences and found 50-70% of individuals fall into this category [10]. The multimodal preference varies in that individuals may have two strong preferences or three strong preferences [10]. Some individuals have no strong preference and thus, their scores in a learning style preference inventory are close to even in all four modes [10].

Sensory modality affects learning according to both Kolb and Gardner. Kolb describes learning style preferences in terms of three learning modalities; visual (seeing); auditory (listening); and kinesthetic (hands on performing of task) [15]. Howard Gardner [12] discusses learning style preferences in his theory of Multiple Intelligences and theorizes that people learn in nine different ways. Kinesthetic learners are among the nine that Gardner discusses. This learner is strong in bodily-kinesthetic

intelligence and finds it important to incorporate movement and simulations into their learning [11], [12].

It is important to note that some researchers distinguish between learning style preferences and study preference [17], [27]. These researchers contend that learning styles are fluid and therefore, instructors should not label students according to a style but rather a preference for studying or acquiring information [27]. Yet, even these researchers agree that learning style preference may be linked to discipline preference and that the best instructional method will probably vary across disciplines [27]. Recent studies support the position that certain disciplines have learning style preferences. In these studies, pharmaceutical students and exercise science students were surveyed. The results of these studies proved positive outcomes that each discipline possessed a common learning style preference [20].

Bonk and Zhang [4] developed a model to assist instructors in identifying different learning style preferences in their course and to frame their course activities to engage all learning style preferences. The R2D2 model appeals to all learning style preferences. The first "R" which stands for "Reading" engage verbal and auditory learners. The second "R" which stands for "Reflect" engages those who are proficient in critical thinking. The first "D" which stands for "Display" engages visual learners and the second "D" which stands for "Doing" engages kinesthetic learners [4]. According to Bonk and Zhang, kinesthetic learners, prefer to experience, emulate, and apply concepts and ideas for further comprehension [4].

3. KINESTHETIC LEARNING IN THE ONLINE ENVIRONMENT

Some theorists contend that visual and read-write learning style preferences are more engaged in the online environment than kinesthetic learners [8], [13]. However, with respect to competency in learning outcomes, researchers disagree. Some researchers posit that there are no significant differences in the learning outcome competencies based on learning style preferences [8]. Others contend that there are significant differences in achieving learning outcomes and that these variances are learning style preference dependent [9].

Perhaps the explanation for these differences in opinion relates to the design of the course. As educators, having an awareness of the various learning style preferences in our online classroom environment can improve student engagement and classroom performance [22]. Eom & Wen [9] state that students with kinesthetic learning preferences experience less satisfaction in an online course setting. Offering a variety of activities results in an effective approach to teaching for all learning style preferences.

Today's educational institutions offer online educational programs as an alternative to on ground classroom settings. Some format of online education is being offered by educational institutions. Yet, high attrition in an online educational setting is problematic [1], [23]. Other concern is whether distance learning courses achieve learning outcomes. If educational institutions are to offer distance learning courses that meet the rigor of traditional on ground courses, it is relevant to address the learning needs and styles of all learners [5], [18].

Much of the power of online learning relies in the ability to support various modes of communication [1]. As new

technologies continuously emerge, on-line learning experiences have moved beyond the delivery system toward creating dynamic and engaging communities of learners [18]. Taking into account the various learning style preferences of students and providing opportunities for self-directed and collaborative learning, educators can facilitate rigorous online knowledge exchange geared to achieving identifiable learning outcomes and critical thinking engagement.

Nunez, Vendrell and Ryan [24] performed a study examining the effectiveness of the use of a reality-based focusing event in a graduate level online curriculum and evaluated whether there was a correlation between student receptiveness to this focusing event and individual learning style preferences. The results from this study suggested that learning style preferences may lend to student receptiveness to reality based-learning [24]. The study evaluation revealed the kinesthetic learner would be the learner most inclined to appreciate reality-based learning [15].

Inquiry into such items may lead to improvement with developing and teaching course content that takes into consideration multiple learning style preferences. Achieving learning outcomes and successful instruction of course material is important to stakeholders in academia [29]. Research has found that the lack of understanding of learning style preferences can lead to misinformation on a student's motivation to learning [5], [22]. By providing an array of learning opportunities for online learners, the variety of instruction may lead to reinforcing concepts, theories, and terms through application as well as provide students with experiential learning opportunities [22].

4. ACTIVE LEARNING STRATEGIES TO ENGAGE THE ONLINE KINESTHETIC LEARNER

Much has been debated on the efforts to teaching students how to think rather than what to think [5]. Traditional face-to-face classes is distinct from an online e-learning environment in that synchronous learning relies on time and place and asynchronous learning is independent from space and allows students to work independently at their own pace [7].

Incorporating critical thinking activities is one such strategy to promote active learning in the online environment. Critical thinking has been captured by Paul and Elder [28] as the art of evaluating one's thinking with the goal of continuously improving. A possible analogy can be critical thinking for the mind is like physical exercise. Critical thinking is daily exercising one's mind by challenging daily assumptions. Initially these daily challenges may be uncomfortable, yet, in the pursuit of growth, just as in daily exercise, there are certainly long term benefits. With today's computer-mediated learning environment, further discussion on what educational practices are required in order to develop critical thinking skills in an online class setting is needed [1].

Another strategy to promote active learning for the kinesthetic learner in the online environment involves replicating real-life experiences. This engages the kinesthetic learner and promotes active learning in the online environment especially when paired with community related issues [3], [4]. Real-life learning allows the kinesthetic learner to thrive in the environment where they immerse themselves in the experience. Role-play is also important to a kinesthetic learner's engagement. An instructor can offer exercises geared to problem solving through assuming

various community roles. In this manner the instructor can combine engagement through experiential learning through real life problem solving [16].

Kinesthetic learners can also benefit from the implementation of case studies into the course material. Practical application is imperative to a kinesthetic learner. The more practical application the kinesthetic learner can apply, the greater learning will occur for them. Accordingly, if an online course is designed with practical application in mind, the kinesthetic learner can benefit. Additionally, since the majority of online classroom environments are text-based interactive technology; such as, interactive flash animation, virtual reality environments, simulations, drag and drop technology and gaming interfaces can be beneficial to this learner [25].

Inquiry into various student learning style preferences may lead to improvement with developing and teaching course content. Markovic and Jovanovic stated that since students have great diversity in their experiences, skills and knowledge base; it is relevant to provide numerous learning opportunities that appeal to their various learning style preferences [22]. The kinesthetic learner will benefit if these opportunities for learning are geared to critical thinking, experiential learning; real-life scenario, case study and role-play [16]. As an educator it is relevant to have awareness of the various learning style preferences in order to develop course content that would increase the number of higher learning opportunities and optimal class performance [22].

5. CONCLUSION

The practice of incorporating theories, concepts, and terms for a particular lesson in an interactive simulation and combining this with information with active learning opportunities may assist in improved learning and retaining of course related material. Reaching for these outcomes may match or exceed course objectives. As the research shows, offering a variety of activities results in an effectual approach when instructing various learning style preferences. For the kinesthetic learning preference, kinesthetic activities provide students the opportunity to practice concepts and apply theories in their experiential learning. Introducing such 'hands on' activities, combined with real world application, creates an online learning environment that allows students to encounter high interaction and experimentation with the course materials. Specifically, kinesthetic learners will be encouraged to formulate, connect, and apply new ideas to existing knowledge, while being engaged in higher order thinking.

6. REFERENCES

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