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Implications of Learning Styles as a Tool on Universal Course Design

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Implications of Learning Styles as a Tool on Universal Course Design

Creating an inclusive and accessible learning environment for all learners helps ensure the educational benefits can be enjoyed by the largest population possible. The concept of Universal Course Design (UCD) evolved from findings from research of learner differences, and as a result, provides a framework for creating more robust learning opportunities for everyone (Rose & Meyer, 2005). The concept of UCD "... caught on as others also recognized the need to make education more responsive to learner differences, and wanted to ensure that the benefits of education were more equitably and effectively distributed" (Meyer et al., 2013, p. 5). The concepts of UCD emphasize catering to all students in a way where all needs are accommodated, and all learners can benefit from the same educational environment.

The theory of learning styles was developed as a response to the belief that learners respond better to educational stimulus that serves to their unique strengths. There are several different models of learning styles, some examples include Kolb's learning theory, Gardner's theory of multiple intelligences, as well as the Learning Style Questionnaire developed by Honey and Mumford (Romanelli et al., 2009). However, for the sake of this research paper, we will focus on the following self-created definition: the theory of learning styles supports the notion that learners retain and recall information most effectively when they are able to receive their education through specific method that support their learning style. This definition was created by reviewing several different learning style models and determining the objective of all of them.

After defining both UCD and learning styles, we can conclude that learning styles cater to the strengths of each learner, whereas UCD accommodates all learners' needs. When used together, this symbiotic relationship can benefit learners in several ways. With that said, the implications of learning styles on UCD should be investigated to best determine its validity and

usefulness in the classroom. Specifically, are learning styles a viable tool for UCD? This research paper investigates the implications of learning styles as a tool on UCD.

To enforce the main topic of this research paper, I will need to define the population of who UCD benefits. As one could conclude from the name, UCD focuses on designing educational content that benefits the greatest population possible, regardless of age, size, ability, or disability (*About Universal Design - Centre for Excellence in Universal Design*, n.d.). “By ‘universal’ we mean every learner – not just those traditionally seen as belonging in the middle of the bell curve... or just those traditionally seen as belonging ‘in the margins’” (Meyer et al., 2013, p. 89). UCD, even though it includes several aspects of inclusive course design, goes beyond inclusive course design. To put it bluntly, even those who are not traditionally seen as needing accommodation still benefit from UCD.

The Problems with Learning Styles

Investigating the implications of learning styles on universal course design cannot be completed without identifying the negatives associated with learning styles. There is insufficient evidence supporting the theory that educational content accommodating the learning styles of students plays a role in how well they retain knowledge. Pashler et al. (2008) conducted a literature review to analyze the concept of learning styles to identify the evidence required to confirm the theory, and to determine if evidence exists within the literature to support the theory of learning styles. Pashler et al. (2008) concluded:

On the basis of our review, the belief that learning-style assessments are useful in educational contexts appears to be just that—a belief... such validation is lacking, and

therefore, we feel that the widespread use of learning-style measures in educational settings is unwise and a wasteful use of limited resources. (p. 117)

A second complication of the theory of learning styles is the lack of explanatory frameworks that support the theory. “Learning styles theories tend to consist of lists of preferences with no explanation as to the underlying cognitive, motivational and personality mechanisms that underlie the preferences” (An & Carr, 2017, p. 411). In addition, “many people do not fit one particular style, the information used to assign people to styles is often inadequate, and there are so many different styles that it becomes cumbersome to link particular learners to particular styles” (Kirschner & Van Merriënboer, 2013, p. 173).

In addition, there is evidence supporting the notion that learners can learn regardless of how the educational content is presented to them. Liew et al. (2015) investigated the role of the individual learning styles of 470 medical students on their learning outcomes after completing identical course work throughout their undergraduate program. The study showed a variety of learning styles represented in the population sample, the largest being kinesthetic learners (30.1%). Despite the variety of learning styles, results showed no discernable differences in learning outcomes across the differing learning style groups. However, it was noted by the researchers that tailoring the delivery method of educational materials to reflect the learning styles of the learners should be investigated to gauge the potential of this teaching-learning strategy (Liew et al., 2015). In conclusion, learning styles can be accepted as a learning preference for the learner, but should not be accepted as a rule on how the learner can or cannot learn.

Beliefs and Use of Learning Styles

Even though learning styles have been largely debunked as a scientific theory, the belief that people learn better if their unique learning style is supported is still popular. In a brief survey conducted by Willingham et al. (2015), 313 participants responded to the following prompt on a 7-point Likert-type scale: “There are consistent differences among people in how they learn from different experiences: specifically, some people generally learn best by seeing, some generally learn best by listening, and some generally learn best by doing” (Willingham et al., 2015, p. 144), where a value of 1 denoted an answer of *strongly disagree* and a value of 7 denoted an answer of *strongly agree*. Results showed a mean rating of 6.35, confirming a strong belief in the importance of learning styles within the participant group. It was concluded “We observed this strong belief even though literature reviews over the last 30 years have concluded that most evidence does not support any of the learning styles theories” (Willingham et al., 2015, p. 144).

Further research has shown that educators still employ the theory of learning styles and will even adjust their teaching style to accommodate student learning styles, even though they understand the theory itself does not have any strong scientific evidence of validity. Newton and Miah (2017) investigated the prevalence of learning theory belief and use across a population of 161 educators within the higher education sector through a self-reporting survey. It was determined that 58% of educators believed learning styles were effective and 33% had used learning styles in their educational material. At the end of the study, the researchers asked the participants if they still planned to use learning styles with their educational strategies; a third reported that they still intended to use learning styles. Eight participants specifically reported that they will continue to use learning styles, even though they specifically understood there is no evidence to support its efficacy.

Furey (2020) investigates the influence of learning styles on popular educational practice, despite a lack of evidential support. Furey argues that in the United States of America, 29 states still issue government-distributed test-preparation exams that include the influence of learning styles. Furey argues that by accommodating the debunked theory of learning styles, teachers may be taking away their attention from empirically supported instructional strategies. “There is no evidence that designing lessons that appeal to different learning styles accelerates student learning. Yet teacher candidates are consistently directed to keep these pseudoscientific style categories in mind” (Furey, 2020).

Research shows there is ample evidence supporting the use of learning styles, despite the lack of scientific evidence supporting its validity. For this reason, there must be a reason for the popularity of learning styles as a tool, even though previous research has cautioned educators to not waste their time using it. Research debunking learning styles as an effective learning tool assesses whether the learner is more capable of learning, not necessarily their experience and enjoyment of learning. For this reason, incorporating learning styles as a tool to motivate and engage learners should be investigated.

Learning Styles Used as a Tool for Engagement and Motivation

Even if learning styles have been debunked as a theory, this does not mean that learning styles accepted as learning preferences do not play a role in how UCD can be created to best support the learner. Even if learning can be achieved in whatever method the educational content is presented in, it does not mean that the method in question is what is most motivating to the learner. “The development of UDL (Universal Design for Learning) learning tools and teaching strategies requires an understanding of the ways learners may differ” (A. E. Meyer & Rose, 2000, p. 40). One of those differences could be what motivates learners to engage in education to

begin with. The studies presented previously only measure knowledge retention of learners regarding learning styles, but it does not measure the willingness of the learner to initiate learning. Chang and Lin (2011) conducted a study to identify the factors related to learning motivations in a group of 584 adults. The study consisted of a survey completed by all participants to measure what exactly motivates these adults to learn. Chang and Lin (2011) concluded that:

...when the teaching activity is presented in the form that conforms to the learning styles of the older adults, it will effectively stimulate their motivation to participate. Older adults who show stronger preference towards social activities or online learning may learn well with social and skill learning styles. (p. 16)

This study showed that when the educational material was presented in a method that supported the learner's preferred learning style, they were more likely to participate in the activity. Even though previous studies in this paper have "debunked" learning styles as a scientific theory for how we learn, it does not account for the fact that it may be a huge factor in how we can get learners initially engaged in education. After all, learners cannot learn if they do not participate in the educational activities to begin with.

There is further evidence to support the notion that learners perform better when given autonomy over their own education. In a study conducted by Lizzio and Wilson (2006), a population of 152 behavioral science students were analyzed as they participated in a self-managed learning group that was a part of a mandated component in their enrollment. Within the self-managed learning group, participants had more autonomy and ownership in their studies over the more structured instructor-led coursework, as they could decide as a group how to complete educational requirements. Individual participants' satisfaction depended on their

personal alignment of their educational wishes and the group decisions on coursework. Results showed that groups that chose to engage in a team-building activity may have been more effective due to a positive attitude to the group exercise. Alternatively, it was observed that individuals with differing goals from their learning group would engage less with learning group activities (Lizzio & Wilson, 2006). Even though the study itself showed that implementation of fully independent self-managed learning groups could be haphazard regarding learning effectiveness, it does highlight the importance of student attitudes on course engagement, particularly when it comes to supporting their own individual goals.

Conclusion

If there is evidence to support that students learn better when given the choice of method their educational materials are presented to them, and those learners select the method that best supports their learning style preference, then the argument could be made that creating educational materials that caters to the learning style preference of any given individual is supporting the needs of all learners. To put it bluntly: creating educational materials based on a learner's preference is universal course design, even if its efficacy is disproven. "Providing students with the choices and flexibility in their materials and assignments is essential to UDL (Universal Design for Learning) implementation" (Coyne et al., 2006, p. 7). With that said, it makes sense that educators ignore what the "experts" say about learning preferences and continue to employ the theory regardless. This also explains why learning styles are still a widespread belief, despite being debunked. If the students respond favorably to having their learning preferences supported, who is to say it should not be used as a tool in Universal Course Design?

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