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Learning Theories in Education

About a year ago, I was asked to review a journal article on Cognitive Load Theory (CLT) application in clinical dental education. For me, this was an epiphany that opened up a whole new exciting area of education and scholarship. Certainly, student versus teacher-centered learning and active versus passive learning were central to my approach but the concept of applying educational psychology theories to teaching and learning and then studying them just never came up. I was finally spurred into action when a faculty member sent an email to the entire faculty quoting Sweller (founder of CLT) saying that PowerPoint was ineffective as a teaching tool due to cognitive overload. I felt my PowerPoint presentations were conducive to learning and now I had to prove it.

Initially, I reviewed Sweller's CLT, but I felt that when combining CLT with PowerPoint this was more of a multimedia approach which led me to Mayer's Multi-media Learning Theory (MMLT). Luckily I have a minor in Psychology and thus able to get around the journal articles in this domain. MMLT drew heavily on CLT and I found that when I applied the principles from these two theories to PowerPoint, my approach to PowerPoint seemed to make sense. Upon further contemplation, I felt that PowerPoint needed to accommodate the learning preference of our dental students as well. This was easy because dental students are, for the most part, visual learners (our admissions aptitude test selects for this).

From there came the scholarship. The students all know I have an M.Ed. and that I design my research to help them with their learning thus they are very supportive of this research. One such example is a survey, which consisted of 15 questions testing students' preference for PowerPoint

presentations based on the three theories – Cognitive Load Theory, Multi-media Learning Theory, and Visual Learning Theory (VLT) – that was administered to second year students at the end of term.

The results indicated that our students prefer and enjoy PowerPoint presentations that follow the tenets of the three theories. At the request of my statistician, we are seeking participation from the University of the Pacific and the University of California, San Francisco Faculties of Dentistry to involve their students as well. Not only will this aid in collaborative scholarship, but it will increase our sample size allowing for more sophisticated statistics to be performed.

The implications of this scholarship include students feeling a part of the research, students knowing people are working to improve their education, and teaching will have underlying principles that are universal (CLT and MMLT), but there will be discipline specific areas

(VLT) as well. Educators can research to determine what learning theories are applicable to their areas and tailor others to conform to their specific needs.

As I said, this was an epiphany for me. When I asked my 23 year old niece, who has a B.A. in history to read my journal submission on this scholarship, she replied, "as a history student, I have an immediate prejudice against PowerPoint because there's really no need for illustrations in seminars, unless we're seeing slides, in which case all it is really good for is showing pictures. But, I can see how it would really help people who thrive on visual instruction". And I thank her for allowing this quote to be included here.

I hope this is an example of cross discipline research that may help you in your own scholarship as an educator.



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