Live Versus Online Environment and Learning Style Effect on Genetic Knowledge Acquisition and Retention

Travis J. Morgan

Supervisory Professor: Hope Northrup, M.D.

In the United States, 2-3% of babies are born with congenital birth defects. The underlying genetic conditions may not be recognized as genetic services for infants appear to be underutilized or unavailable. In Texas in 1998, 83% of individuals at risk for genetic diseases did not receive genetic evaluation/care. Those not diagnosed early rely on being referred to genetics by their future medical caretakers. The ability to recognize genetic conditions and refer appropriately is very important. A survey administered in 2008 to Houston allied health professionals found that the majority of respondents did not demonstrate adequate understanding of genetic information. Previously (1993-2002) in an effort to educate allied health professionals in Texas regarding genetic disease, geneticists at UTHSC-H conducted a number of didactic day-long seminar on genetic disease aimed at nurses and other health professionals. To address the continuing need for additional genetic education, an online learning program was created and the live seminar was offered in Fall 2008. Our study sought to test three hypotheses: traditional live classroom testing is less effective; educational effectiveness correlates with learning style; and different learner types will score differently on retention tests based on class setting. We split those who attended the session into two groups (live or online learning) utilizing a randomized blind crossover model. Learning style was assessed by having participants respond to a VARK (V=visual; A=aural; R=read/write; K=kinesthetic) assessment. Participants completed a pretest, posttest, and 3 month retention test as part of the combined seminar/online learning program. We concluded that a similar amount is learned by the live or online teaching method and that both demonstrate an increase in knowledge. Additionally, learning style does not affect an individual’s ability to learn by the online or live teaching method. Finally, we concluded that a thorough genetics background early in a lesson series is very beneficial to understanding more complex information later in the series.