Students' Research Skills and Self Efficacy Gained in an Online Laboratory

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ABSTRACT

Stadtlander and Giles (2010) showed the feasibility of an online psychology research laboratory. The proposed study extends their work by examining whether students' research skills and self-efficacy improves in an online lab, as has been reported in land based research labs (Love et al., 2007).

PROBLEM

There has been very little research examining online mentored research labs. The current study compares gains in research knowledge and self efficacy in 9 students participating in an online research lab, to a control group of similar students not taking that lab.

PURPOSE

To examine research knowledge and self efficacy changes in students in an (noncredit) online mentored lab.

RELEVANT LITERATURE

A key element of graduate training is the in-depth intellectual mentoring, particularly in research training. The ability of instructors to mentor students in an online environment has been a concern (Belar, 2006).

There were no descriptions of methodological based virtual research labs in the psychology literature until Stadtlander and Giles (2010). The authors showed the feasibility of an online research laboratory. They reported that students enjoyed the experience; however, they were not confident that the students gained research skills or improved their self-efficacy in the research process as has been reported in land based research labs (Love et al., 2007). Stadtlander and Giles showed virtual labs benefit the faculty, but do the students also benefit? Can successful research mentoring be done in an online environment?

RESEARCH QUESTIONS

1. Does an online lab significantly improve students' applicable research skills over a control group?

2. Does an online lab significantly improve students' research self efficacy over a control group?

DATA COLLECTION PROCEDURES

Nine Walden University students from across the US will participate in conducting a PI designed research project.

A possible confound is that students may increase their research ability through their education without the lab so a control group will be used. Nine students will be chosen from the qualified applicants as controls for the study. All 18 students will take the tests at the same times.

Measures: Research Outcome Expectations Scale (Bieschke & Bishop, 1994). A 20 item instrument that measures self efficacy in research related tasks.

Research Skills test will be developed consisting of 17 research skills necessary in the study. Participants will rate their capability to do each skill

DATA ANALYSIS

The results from the lab students' 2 tests examining changes in research skills /self efficacy will be examined through a repeated measure MANOVA with independent variables: condition (lab student vs. control) and test point pretest and at project end). Dependent variables are research skills and research self efficacy.

CONCLUSIONS

This project will determine the efficacy of virtual labs in teaching research skills beyond those gained in a graduate psychology program in which students do not participate in lab based research.

SOCIAL CHANGE IMPLICATIONS

We will demonstrate whether the faculty mentoring in an online lab environment are effectively teaching research skills and increasing student research efficacy. This will enhance social change as students can become better, as well as, more confident researchers. In turn, this can lead to a positive impact on the quality of research conducted thus strengthening the overall fabric of academic literature.