Do Demographics Matter Within Student Perceptions of Distance Education?

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Introduction and Conceptual Framework

The need to understand student's ability to cope and learn within the distance learning environment is of upmost importance. The purpose of this study was to measure students' perceptions of the distance education learning environment within the College of Agriculture and Natural Resources, and to determine if there were any differences based upon participant demographics including: biological sex, ethnicity or major. Literature suggests student satisfaction is higher in face-to-face instruction when compared with distance education delivery methods. Furthermore, for some disciplines like agriculture, learning outcomes are often applied, skills-based proficiencies where face-to-face instruction is the preferred mode over distance education among students (Coley et al., 2015; Eells, et al., 2020). The objective of this study sought to determine if there were perceived differences between the students' perception of their distance learning environment based upon their biological sex, ethnicity, or major.

The theoretical lens of Cultural Transactional Theory of Stress Coping was used to conduct this study (Chun et al., 2006). By utilizing this theory, the researchers were able to examine the perceptions of Hispanic college agriculture science students in a distance education learning environment. Physiological responses and social interactions between participants in a distance learning environment often is unexamined by researchers (Moos, 2002). The perception and satisfaction rates of students related to their education are dependent of the social interaction among participants.

Methodology

This study was completed using an online survey instrument developed from the Distance Education Learning Environments Survey (DELES) (Walker & Fraser, 2005). The DELES was created to help educators observe psychosocial learning environments in post-secondary online learning (Walker, 2020). The online survey instrument consisted of seven constructs that included: *Instructor Support, Student Interaction and Collaboration, Personal Relevance, Authentic Learning, Active Learning, Student Autonomy, and Enjoyment of Distance Education*. Data were collected, utilizing the online system Survey Monkey to distribute the survey. We downloaded the data from Survey Monkey into SPSS for analysis. *t*-test results and effect sizes were utilized and reported. Effect sizes categories were established as "small effect," Cohen's $d = .20$; "medium effect," Cohen's $d = .50$; and "large effect," Cohen's $d = .80$ (Cohen, 1988). We conducted independent *t*-tests to measure differences in mean scores based upon the demographic characteristics. The calculated *p*-values were compared at a significance interval of 0.05 *a priori*. Construct items were transformed into new variables after a reliability analysis for each construct was conducted. We obtained a total of 121 usable surveys, yielding a response rate of 80.6%.

Findings

The highest mean scores were found within the construct of *Instructor Support* for both male ($M = 4.40$, $SD = 0.70$) and female students ($M = 4.58$, $SD = 0.52$). The lowest means scores that were found were related to *Enjoyment of Distance Education*, male ($M = 2.27$, $SD = 1.18$) and female ($M = 2.60$, $SD = 1.02$). There was a significant difference between male ($M = 4.24$, $SD = 0.63$) and female ($M = 4.09$, $SD = 0.61$) respondents related to authentic learning in the distance learning environment ($p = < 0.01$) with a medium effect size (Cohen's $d = 0.75$).

In the demographic characteristics related to ethnicity, the highest mean scores were related to *Instructor Support* from students that identified as Hispanic (M = 5.57, SD = 0.61) and White (M = 4.27, SD = 0.61). The lowest mean scores measured were related to *Enjoyment of Distance Education* from Hispanic (M = 2.58, SD = 1.09) and White (M = 2.66, SD = 1.15). We found there was a significant difference between Hispanic (M = 4.57, SD = 0.61) and White (M = 4.27, SD = 0.61) respondents related to *Instructor Support* (p = 0.02*) in their distance education environment with small (Cohen's d = 0.49) effect sizes respectively. The researchers also found there was a significant difference between Hispanic (M = 4.19, SD = 0.61) and White (M = 4.07, SD = 0.68) respondents related to *Authentic Learning* (p = < 0.01) in their distance education environment with medium (Cohen's d = 0.60) effect sizes respectively. No other constructs were significant by ethnicity.

Instructor support was found to have had the highest mean scores with students who majored in Agriculture Science (M = 4.54, SD = 0.55), Agriculture Science with a Teaching Certificate (M = 4.41, SD = 0.68), and Agribusiness (M = 4.65, SD = 0.56). *Student Autonomy* was found to have had the highest mean scores with students who majored in Animal Science (M = 4.34, SD = 0.56) and Agriculture Science with a concentration in Plant Science (M = 4.64, SD = 0.44). *Enjoyment of Distance Education* was found to be the lowest mean scores within students who majored in Agriculture Science (M = 2.59, SD = 1.14), Agriculture Science with a Teaching Certificate (M = 2.20, SD = 0.75), Agriculture Science with a concentration in Plant Science (M =2.83, SD= 1.18), and Agribusiness (M = 2.55, SD = 1.37).

Conclusions & Recommendations

To further understand student's preferences related to the distance education environment, the researchers sought to measure perceived differences between the students' based upon their biological sex, ethnicity, and major. The researchers found that males in the study preferred more authentic learning within their courses than females. We also found significant differences between Hispanic and White students related to *Authentic Learning* and *Instructor Support.* The researchers believe that the higher level of authentic learning from Hispanic students could be due to preference of being able to relate what they learn in the course to the outside world. Researchers believe students rather learn about skills that can be used in their everyday lives.

We recommend incorporating examples and skills that can be used outside of the classroom. Some tools mentioned are incorporating skills in learners such as self-reflection and metacognition (Roman et al., 2020). In a study conducted by Woo et al. (2007), it was stated that the instructor can incorporate authentic learning skills into a course by participating regularly in students' interaction processes and by sharing students' thoughts and resources. Students should be encouraged to share their experiences. Studies show students show a higher level of interest in course material if they find it relatable to their everyday lives. This relates to the environmental and personal relevance systems within coping models. It is recommended to examine the relationship between Hispanic students and authentic learning in a distance education learning environment. The researchers recommend extending this study at other institutions that include other ethnic groups to examine if the results would be similar.

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