EFFECTS OF IMMERSIVE AND IN-CLASS EXPERIENCES ON KNOWLEDGE AND PERCEPTIONS OF AGRICULTURAL CAREERS

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Introduction/Need for Research

The U.S. is facing a labor shortage exacerbated by the COVID-19 pandemic (Ferguson, 2022). Employers and businesses in all industries are rightfully concerned. According to Kassel and Martin (2021), the agricultural industry provides 10.9% of jobs in the United States accounting for 22.2 million different jobs. Employers and college students alike are asking for post-secondary career education to be made a priority (Buford et al., 2023). Educating non-traditional as well as tradtional students about opportunities in the agricultural industry will be paramount to closing the gap between filled and vacant jobs in the agricultural industry. The purpose of this study was to explore student perceptions of agricultural careers after participating in either an immersive experience or an in-class lecture experience. The following research questions guided this study: 1. Does the recall of information differ in students that receive a classroom based lecture experience to students that receive a concrete experience outside of the classroom? 2. Are concrete, hands-on experiences or classroom experiences more effective at helping students retain information?

Theoretical Framework

Mitchell (1990) posited that unique learning experiences form learned behaviors become the foundation of individuals' career decisions and development. This study aimed to understand how Kolb's Experiential Learning Theory could be applied in the context of a career education program at the post-secondary level. This study, like all of agricultural education, is heavily influenced by the idea of hands-on experience being an important practice in agricultural education settings. Agricultural educators across the United States have long stood by Stimson's (1919) idea that skills cannot be learned through reading alone, but through "active participation, during the learning period, in productive farming operations of real economic or commercial importance" (p. 32). Further, post-secondary colleges of agriculture and their faculty have the ability to incorporate similar experiential learning concepts into their courses.

Methodology

This study followed a mixed methods research design to understand the perceptions of students toward agricultural careers and how different educational experiences may impact those perceptions, as well as the retention of information. Data was collected from two treatment groups of post-secondary agricultural students. The two groups participated in separate deliveries of similar career education content over three separate days. The first treatment was an immersive experience where student toured three seperate agricultural businesses. The second treatment included three in-class experiences which utilized lecture-based delivery of similar. Upon completion of the treatments, students answered an active recall question where they listed as many agricultural careers as they could remember from the experience. After both immersive and in-class experiences concluded, one-on-one interviews were scheduled. Qualitative data analysis included bracketing the researcher's experiences, organizing data into themes, and organizing themes into a codebook. Independent sample *t* tests were run to measure the active recall component.

Results/Findings

The number of student participants within the three days of immersive and in class experiences yielded a range of 12 to 18 students and a range of 16 to 19 students respetively. From the total population, most participants were female (48.8%), had at least one parent or grandparent employed in agriculture (64.9%), and were enrolled in an agricultural degree program (87.7%). Independent sample *t* tests were conducted to evaluate the hypothesis that the immersive experience participants would score higher on the active recall prompts. This analysis showed a significant difference between the means of the immersive experience and in-class experience groups towards one of the three days of career education. Table 1 shows *t* test results.

Table 1

Active Recall TTest Results

Educational Topic	Treatment	*M*	*SD*	*t*	*p*
Career Education Day #1	Immersive Experience	4.00	0.74	2.39	*0.024
	In-Class Experience	2.74	1.73		
Career Education Day #2	Immersive Experience	2.92	1.24	1.4	0.17
	In-Class Experience	2.27	1.26		
Career Education Day #3	Immersive Experience	5.06	1.06	1.07	0.29
	In-Class Experience	4.59	1.50		

Note: Range of possible scores for each day, with the higher number being the highest possible score. Possible scores for Day 1 was 0-5, Day 2 was 0-5, and Day 3 was 0-6.

Coding of the reflective journals resulted in eight separate themes while coding of one-on-one interviews produced four themes. From two of the three days of reflective journals, the theme discovery of new information emerged. This theme was defined by the researchers as a statement or reflection of a concept or fact they learned from the career experience. From the first day of journaling, discovery of new information was identified 33 times total, 14 times in discovery of new careers and 17 in discovery of new technologies. This theme included codes specific to careers, technologies, and technical skills and processing. One-on-one interviews generated the the theme, increasing student knowledge. There were 51 occurrences of this theme across its codes: discovery of careers, discovery of technology, discovery of new skills and intentions for the future. Like the themes before, increasing student knowledge was defined as a participant stating something new they learned through the career experiences in this study. In all different sets of data, positivity was an emergent theme or code.

Conclusions/Recommendations/Implications

The future of agriculture is in the hands of this generation of college students, and they must be exposed to their career options in order for them to find their rightful place in this industry. This study explored how career education could be implemented at the post-secondary level: in an immersive experience or in classrooms. The findings suggest that immersive or in-class career experience are valuable to the students although some differences did arise. Research should be continued to determine best ways to incorporate career education into the current structure of existing classes. Research should also be conducted as to how participant demographics play a role into perceptions of agricultural careers. The researchers involved with this study attempted to recreate the immersive experience into a lesson plan, which was challenging to complete with a “hands-on” component. It was by the researcher’s discretion how the information was laid out, so the results could be reflective of those decisions, and could change under different circumstances.

References

Buford, M. V., Sharp, M. J., & Stebleton, M. J. (2023). Mapping the future of undergraduate career education: Equitable career learning, development, and preparation in the new world of work. DOI: 10.4324/9781003213000-1

Ferguson, S. (2022). Understanding Americas labor shortage. U.S. Chamber of Commerce. Retrieved June 15, 2022, from https://www.uschamber.com/workforce/understanding-americas-labor-shortage

Kassel, K., & Martin, A. (2021). Ag and food sectors and the economy. USDA Economic Research Service. https://www.ers.usda.gov/data-products/ag-and-food-statistics charting-the-essentials/ag-and-food-sectors-and-the-economy.

Mitchell, L. K. (1990). Social learning approach to career decision making: Krumboltz's theory. Career choice and development: Applying contemporary theories to practice, 2(1), 145-196.

Stimson, R. W. (1919). Vocational agricultural education by home projects. New York: MacMillan.