

Analyzing Pre and Post Test Scores of ACRS21 Certificate Pathway Completers

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Introduction

In today's day and age, employers are looking for prospective employees to have a certain set of skills. Schulz (2008) explains that "soft skills are playing an important role in shaping a person's personality, they enable social competence, and they complement the hard skills, which are the technical requirements of a job" (p. 152). Stewart, Wall, and Marciniec (Stewart, et al, 2016) define soft skills as "those non-technical competencies associated with one's personality, attitude, and ability to interact effectively with others" (p. 276). Soft skills can also be defined as the "relationship factor involved in human interaction required to achieve positive outcomes" (Brungardt, 2011, p. 1). According to Schulz (2008), employers are looking for job candidates that will be efficient in their tasks from a younger age. Currently in the workforce, employees need to have a balance between soft skills and hard, technical skills (Ali & Mahmood, 2018). The Agricultural Career Readiness Skills Certificate Pathway for the 21st Century (ACRS21) was created in 2021 to bridge the soft skills gap between employers and employees by faculty members and students at the California State University, Fresno. High schoolers complete 250 hours of various experiential learning activities that are aligned to Career Technical Education Standards in order to meet the requirements of the ACRS21 Certificate Pathway. The purpose of this study was to determine if a significant difference occurred between the pre- and post-test soft skills assessment scores of students participating in the ACRS21 Certificate Pathway. Students participating in this study were selected based on a convenience sample of 36 students who had completed pre-and post soft skills assessments. The instrument used was the Life Effectiveness Questionnaire (LEQ-H) Soft Skills Assessment (Neill,2003), which measured the following eight soft skills: time management, social competence, achievement motivation, intellectual flexibility, task leadership, emotional control, active initiative, and self-confidence.

Theoretical Framework

Kolb's Experiential Learning Theory served as the theoretical framework for this study, which includes four stages, 1) concrete experiences, 2) reflection and observations, 3) abstract conceptualizations, and 4) active experimentation (Kolb, 1984). Roberts (2006) summarizes what is known about experiential learning theory as experiential learning beginning with an initial focus of the learner, followed by an experience, then the learner reflects on their observation, formulates a generalization, and then tests the generalization with experimentation. Once completed, the circle starts over in a spiral-like pattern (Roberts, 2006, p.22).

Methodology

The purpose of this study was to analyze the pre and post test scores of 36 ACRS21 Certificate Pathway completers and determine if a significant difference in soft skills development occurred between the beginning and end of their participation in the pathway. Students completed the LEQ-H pre-assessment prior to beginning the certificate program. The LEQ-H assessments asks students to rank themselves on from one to eight, one being 'not like me' and eight being 'like me'. There are 24 total questions, three questions per soft skill being assessed. After each student completed the necessary requirements for the certificate, the LEQ-H was completed again. The 36

certificate pathway completers were all high school students from all over California. The LEQ-H was administered through the Agricultural Experience Tracker (AET). Data was collected on each individual participant and provided to the research team.

Results/Findings

The results indicated that the mean post test scores were higher in all eight soft skills. The soft skills represented by letters A, D, E, F, and H indicated that there was a significant statistical difference between pre and post-test means ($p < .05$). The soft skills represented by letters B, C, and G showed that there was no significant statistical difference in pre and post-test means ($p > .05$).

Table 1.

LEQ-H Pre Test and Post Test Mean Scores

	A	B	C	D	E	F	G	H
Pre Test	6.0000	6.4722	7.1944	6.3889	6.3333	5.8611	6.7222	6.7222
Post Test	6.4444	6.6389	7.3889	6.8611	6.9444	6.5833	7.0000	7.1944
P Value*	0.007	0.324	0.109	<0.001	0.001	0.010	0.152	0.008

Note. A = Time Management, B = Social Competence, C = Achievement Motivation, D = Intellectual Flexibility, E = Task Leadership, F = Emotional Control, G = Active Initiative, H = Self Confidence.

**p value*

The results determined that the 36 completers showed improvement in all eight of the soft skills, indicating that the completion of the ACRS21 Certificate Pathway provides for the development of soft skills. Emotional control showed the most growth in mean scores (.72), followed by self-confidence (.47), intellectual flexibility (.47), and time management (.44). Intellectual flexibility had the most statistical difference ($p < 0.001$). One limitation of the study was the size of the population of certificate completers due to the newness of the program. The number of completers compared to the thousands of applications open may not be an accurate representation.

Conclusion

The primary purpose of this study was to determine if there was a significant change in soft skill development for students completing the ACRS21 Certificate Pathway. The results showed that each of the eight soft skills had experienced improved post-test mean scores and that significant difference occurred in five of the soft skills. These findings align with previous studies that have shown that experiential learning activities can strengthen soft skills in individuals. The results of this study are encouraging and show promise that future ACRS21 Certificate Pathway participants could experience growth in their soft skills development. Recommendations include a broader evaluation of soft skill development once the ACRS21 Certificate Pathway acquires a larger set of pathway completers.

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