Utah Agriculture Teachers' Perceptions of Teaching Urban and Non-Traditional Agriculture Content

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Introduction and Need for Research

While agriculture teachers may focus on guiding students into agricultural and natural resource career pathways, many have expressed the need to prepare existing and upcoming agricultural educators with a more extensive set of skills and knowledge to better prepare students for a broader scope of career opportunities in agriculture (ManPower, 2015). Agricultural education programs are expanding across the country, including more programs in urban areas, but agricultural education teachers often have little exposure or experiences related to less traditional agricultural careers that might be found in urban areas (Brown & Kelsey, 2013). Furthermore, agriculture teachers are often prepared to teach agricultural content through coursework that is very prescriptive and focuses on skill and concept development for set of traditional careers in agriculture (e.g., livestock production). Few teachers are equipped to prepare students for success in agricultural careers in urban and suburban areas or with alternative production and marketing methods that small-scale farmers use (Brown & Kelsey, 2013). As a result, many students are not adequately prepared for these viable agricultural career options within their local or regional settings. Agriculture teachers simply lack the experience, skills, and knowledge to address these critical issues, and they have indicated a need for professional development in areas of new and emerging careers and technology (Perkins, Sorensen, Hall, Dallin, & Francis, 2017). This study fits Priority Three of the National American Association for Agriculture Education (AAAE) Research Agenda, specifically addressing the need for preparing people to work in a global agriculture and natural resources workforce (Roberts, Harder, & Brashears, 2016). The purpose of this study was to evaluate agriculture education teachers' knowledge, confidence, and level of importance of integrating urban and non-traditional agriculture concepts into their curriculum and Supervised Agricultural Experiences (SAEs).

Theoretical Framework

The theory of change began as a program planning and evaluation tool, which explains the interventions (activities, workshops, etc.) that can lead to short-term, intermediate, and long-term outcomes and the connections between activities and these outcomes (Taplin, Clark, Collins, & Colby, 2013). Outcomes can represent changes in knowledge and behavior. The purpose and results (outcomes) that the theory of change delivers helps improve interventions and workshop evaluation designs.

Methodology

The target participants for this study included agriculture education teachers in Utah. Participants attended an Urban Agriculture-Farm and Feed Workshop and tours in a centralized location in the state. A retrospective pretest-posttest evaluation was administered at the end of the workshop (Pratt, McGuigan, & Katzev, 2000). Participants rated on a scale of 1 (*very low*) to 5 (*very high*) the level of knowledge about urban/non-traditional agriculture and SAE options, level of confidence/ability to integrate urban/non-traditional agriculture concepts into their teaching, and level of importance of urban/non-traditional agriculture and urban/non-traditional SAE options for their

students. Forty-two participants completed the evaluation. Researchers ran paired - samples t-tests in IBM SPSS version 23. Effect size was computed using Cohen's d (Thalheimer & Cook, 2002).

Results

Of the 42 respondents, 52.5% were female (n = 21) and 47.5% were male (n = 19). Age ranged from 21 years to 58 years, with a mean of 36.5 years. Roughly 75% of respondents (n = 29) completed a traditional teacher certification program. The distribution of highest level of education obtained was as follows: master's degree (n = 15, 40.5%), bachelor's degree (n = 14, 37.8%), some graduate work (n = 7, 18.9%), and doctorate (n = 1, 2.7%). The type of community where the participants' schools are located ranged from metro urban area (n = 3, 7.7%), urban (n = 13, 33.3%), urban cluster (n = 19, 48.7%), and rural (n = 4, 10.3%). A paired-samples t-test indicated that the posttest score (M = 20.50, SD = 2.48) was significantly higher for the respondents' level of confidence than on the pretest (M = 14.31, SD = 3.95), a statistically significant increase of 6.19, 95% CI [4.87, 7.51], t(41) = 9.49, p = .00, d = 1.46.

Table 1

Change in Knowledge, Confidence, and Importance of Integrating Urban-Non-traditional Concepts into Curriculum and SAEs

	Pretest		Posttest					
Construct	*M*	*SD*	*M*	*SD*	*t*	*df*	*p*	Cohen's *d*
Knowledge	14.31	3.95	20.50	2.48	9.49	41	.000	1.46
Confidence	5.55	1.89	7.86	1.57	9.18	41	.000	1.41
Importance	6.86	1.92	8.90	1.21	8.59	41	.000	1.32

Conclusions

The knowledge-focused evaluation items suggest that participants learned more about urban and non-traditional agriculture in the state, urban SAE options, and non-traditional agriculture SAE options. The participants also gained confidence in integrating urban/non-traditional agriculture concepts in their teaching and in developing SAEs.

Implications/Recommendations/Impact on Profession

The workshop's curriculum and suggested SAE options would help agricultural education teachers implement urban agriculture and non-traditional agriculture concepts into their curriculum, especially since the majority of participants lived in an urban (greater than 50,000-199,999 in population) or urban cluster (more than 2,500-49,999 in population) area. By teaching these urban agriculture and non-traditional agriculture concepts, these agricultural education teachers could prepare their students for a broader scope of careers in agriculture. One recommendation for future research is to conduct a follow-up survey with participants to evaluate their integration of urban and non-traditional agriculture concepts into their curriculum and the development of urban and non-traditional agriculture SAE projects with their students. Further study should survey their agriculture education students' knowledge of and interest in urban and non-traditional agriculture careers to measure the effectiveness of the curriculum.

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