

**Identifying Agricultural Educators' Confidence and Efficacy when
Working with Students on the Autism Spectrum**

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Introduction

Students on the autism spectrum face many challenges to successful employment including, poor social skills, challenging behavior, comorbidity, and educational level (Chen, Leader, Sung, & Leahy, 2015). However, to obtain career skills, agricultural educators must have the self-efficacy and confidence to work with students with autism spectrum disorder (ASD) and implement the essential skills in their curriculum. During student teaching training, agriculture teachers should spend time with students with disabilities to increase their confidence in teaching students with disabilities (Kessell, Wingenbach, & Lawver, 2009). High school agricultural education teachers reported to be confident in teaching students with disabilities, and their level of confidence was predicted by participating in special needs in-service opportunities, their age, and their relationship with a friend or family member who has disabilities (Stair, 2009). In addition to educators' confidence, self-efficacy can be a predictor for motivation and behavior (Bandura, 1997). Although student teachers reported high efficacy levels, their efficacy significantly declines in the first year of teaching, and the decline is related to the level of support teachers received (Hoy & Spero, 2005). Therefore, adequate training and support could be beneficial for recent graduates when working with ASD students. In Bandura's Social Cognitive Theory, he described self-efficacy as "the conviction that one can successfully execute the behavior required to produce the outcomes" (Bandura, 1977, p. 193). Agricultural educators must have high self-efficacy when working with ASD students. Their self-efficacy and confidence in their instructional abilities is important to provide ASD students with essential career skills.

This mixed-method study used a convergent design to explore the educational resources and needs of Texas agriculture educators to properly prepare ASD students for careers. Quantitative data was collected to quantify the resources agriculture educators in Texas need to properly prepare students on the autism spectrum for careers. This study aligns with the AAEE National Research Agenda Research Priority 5, focusing on building efficient and effective agricultural education programs (Roberts, Harder & Brashears, 2016). The purpose of this study was to identify perceived self-efficacy and confidence of Texas agriculture educators, specific to preparing ASD students for careers.

Method

Using an explanatory sequential mixed methods design, this study is part of a larger study (Creswell & Clark, 2018; Bryman, 2016). Using a quantitative survey, we obtained a population of the N=2250 Texas agricultural educators from Judgingcard.com's directory. We identified a sampling frame of 400 (95% confidence level and a 4.4 confidence interval). The 400 sample participants were chosen using a simple random sampling method (Bryman, 2016). The survey was adapted and modified from previous research (Stair, 2009), and delivered based on Dillman's Tailored Design Method (Dillman, Smyth, & Christian, 2014). The survey had 27 questions (i.e., dichotomous, Likert-type scale questions, and open-ended short-answer questions), with measurement scales (i.e., involvement in SAEs (i.e., experience scales, ≤ 1.50 = no experience; 1.51 – 2.49 = low level experience; 2.50 – 3.49 = moderate level experience; 3.50 \leq = high level experience; agreement scales, ≤ 1.50 = strongly disagree; 1.51 – 2.49 = disagree; 2.50 – 3.49 = agree; 3.50 \leq = strongly agree; and confidence scales, ≤ 1.50 = not very confident; 1.51 – 2.49 = somewhat confident; 2.50 – 3.49 = confident; 3.50 \leq = very confident)). Reliability was addressed by using a pilot test (n = 30) and calculating post hoc Cronbach's alpha ($\alpha = .97$). Content validity (Bryman, 2016) was addressed using face validity, by a Texas special needs teacher and former agriculture education teacher. We distributed each point of contact and

the survey through Qualtrics®, beginning on March 21st, 2018 and ending May 31st, 2018. We had 392 emails delivered and had 97 usable surveys, resulting in a 25% response rate. We analyzed data using RStudio® and calculated descriptive statistics (e.g., frequency, percentage, means, standard deviations, and a *t*-test). No differences in responses were found using a non-response comparison of early to late respondents (Lindner, Murphy, Briers, 2011).

Results

After analyzing the data, we found that 37.9% ($f = 36$) of educators reported to have a *moderate level of experience* working with ASD students, and 31.6% ($f = 30$) had *low level of experience*. Regarding training and experience, 37.9% ($f = 19$) of educators reported they had *not received training to teach ASD students, but feel prepared to do so*. Additionally, 22.1% ($f = 21$) of educators *do not believe they need this type of training*. Educators reported to *agree* they had a *positive classroom atmosphere for ASD students* ($M = 3.39$; $SD = .68$; $n = 90$), *believed it is their responsibility to prepare them with basic skills for future careers* ($M = 3.37$; $SD = .81$; $n = 90$), and can modify assignments or activities according to a student's needs ($M = 3.36$; $SD = .64$; $n = 90$). Regarding their confidence, 55.1% ($f = 49$) of educators reported a *moderate level of confidence*, followed by 21.4% ($f = 19$) of educators who had a *high level of confidence*, and 19.0% ($f = 17$) of educators who had a *low level of confidence* with working with ASD students. We ran a paired *t*-test and found no significant differences between teachers' confidence level when teaching general education students and ASD students, among identified career skills (i.e., self-determination, independence, teamwork, self-care, resume building, identify personal strengths and weaknesses, searching for careers, interview preparation, and public speaking). However, overall, there was a higher mean of confidence when teaching all skills to general education students compared to ASD students.

Conclusions

Teacher success is greatly influenced by their confidence in their abilities to effectively teach all students (Gibson & Dembo, 1984). This study found that 55.1% of agricultural educators felt a moderate level of confidence in teaching ASD students, yet 37.9% of educators had not received training but feel prepared to teach ASD students. This suggests that educators' self-efficacy and confidence in themselves might outweigh their training experiences of working with ASD students. Although there were no significant differences in agricultural educators teaching general education students and ASD students, they expressed a higher mean in reaching general education students. Despite educators feeling moderately confident in teaching ASD students, they have higher confidence in teaching career specific skills to general education students. Creating opportunities for preservice agricultural educators to experience positive situations with ASD students is critical to developing efficacy in the classroom. Agricultural educators are in a position to help prepare students on the autism spectrum for future careers, and can provide hands-on learning opportunities in a controlled, school environment. Limitations of this study include, limited response rate and timeline of data collection for agriculture teachers. Future research should explore the application of Bandura's idea of self-efficacy (1997), specifically mastery and vicarious experiences when training student teachers to build career skills through agricultural education.

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