

**Identifying Texas Agriculture Educator's Instructional Methods
When Working with Autism Spectrum Disorder Students**

2019 National AAAE Research Poster Session

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Introduction

General education teachers and agricultural educators both face the challenge of working with students with diverse needs, and therefore, seek instructional methods or strategies that can be effectively be delivered to students (Banks et al., 2005). When working with students with disabilities, educators should understand diverse instructional methods to adequately teach students with disabilities (i.e., Autism Spectrum Disorder (ASD)). Effective educational instruction can help ASD students develop skills for careers. For example, FFA and Supervised Agriculture Experiences (SAEs) provide opportunity to gain valuable career experience and use their skills to excel at tasks or projects (Grandin & Duffy, 2008). To help identify disability characteristics and provide a positive educational experience for students, educators can adapt and contribute to the creation of Individualized Education Plans (IEPs; Banks et al., 2005). In addition to creating IEPs, educators should communicate with parents to increase their understanding of classroom practices, student progress, and ability to make decisions on the behalf of the students (Epstein et al., 2009).

To understand the relationship that the educator and supporting individuals have on career development, the social cognitive career theory (SCCT; Lent, Brown, & Hackett, 1994) is the guiding theory of this study. SCCT aims to identify the relationship between a supporting individuals' influence on a students' career interests and skill development. The purpose of this study was to identify Texas agriculture educator's instructional methods when working with students with autism spectrum disorder. Four research objectives guided this study: RO1) describe SAE activities ASD students are involved in and excel at; RO2) identify communication methods educators' use with parents of ASD students; RO3) determine how involved educators are in creating IEPs for ASD students; and RO4) identify barriers educators face when working with ASD students. Furthermore, this study aligns with the AAAE National Research Agenda Research Priority 5, focusing on building efficient and effective agricultural education programs (Roberts, Harder & Brashears, 2016). Results of this study will directly impact the methods of communication with diverse audiences and career exploration in agriculture (Roberts, Harder & Brashears, 2016).

Methods

This study is part of a larger study using an explanatory sequential mixed methods design (Creswell & Clark, 2018; Bryman, 2016). This abstract is phase one of the study, using a quantitative survey. We obtained a population of Texas agricultural educators from Judgingcard.com's directory ($N = 2,250$). Using an online sample calculator of a 95% confidence level and a 4.4 confidence interval, then using a simple random sampling method (Bryman, 2016), we identified the sampling frame ($n = 400$). The survey was adapted and modified from previous research (Stair, 2009), and design and distribution methods were designed using Dillman's Tailored Design Method (Dillman, Smyth, & Christian, 2014). The questionnaire contained 27 items, including, Likert-type scale questions, and open-ended short-answer questions. Some measurement scales included: *involvement in SAEs* (i.e., ≤ 1.50 = no involvement; $1.51 - 2.49$ = some involvement; $\geq 2.50 - 3.49$ = complete involvement); *activities they excel at* (i.e., ≤ 1.50 = do not excel; $1.51 - 2.49$ = somewhat excel; $\geq 2.50 - 3.49$ = greatly excel); *agreement of communication methods* (i.e., ≤ 1.50 = strongly disagree; $1.51 - 2.49$ = disagree; $2.50 - 3.49$ = agree; ≥ 3.50 = strongly agree). We did not ask participants demographic information because it was not relevant to our analysis and reporting of this study. Reliability of

the instrument 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 reviewing the survey and providing feedback. No differences in responses were found using a non-response comparison of early to late respondents (Lindner, Murphy, & Briers, 2011). We distributed each point of contact and the survey through Qualtrics™, beginning on March 21st, 2018 and ending May 31st, 2018. We identified 392 successfully delivered emails and received 97 usable surveys, resulting in a 25% response rate. After exporting the data to a Microsoft Excel® file, we analyzed data using RStudio®. We conducted descriptive statistics (e.g., frequency, percentage, means, and standard deviations).

Results

Educators reported providing *some involvement* of ASD students on *raising/managing animals* ($M = 2.27$; $SD = .77$; $n = 56$), *floral design* ($M = 2.17$; $SD = .87$; $n = 40$), and *horticulture* ($M = 2.13$; $SD = .74$; $n = 43$). Additionally, those same lab activities were reported as the activities in which ASD students *somewhat excelled* at including, *raising/managing animals* ($M = 2.43$; $SD = .64$; $n = 40$), *horticulture* ($M = 2.37$; $SD = .56$; $n = 30$), and *floral design* ($M = 2.23$; $SD = .59$; $n = 26$). Educators reported how often they communicate with other teachers to create individualized education plans (IEPs). When communicating with parents of ASD students, educators *agreed* to communicating with parents of ASD students using *in-person meetings* ($M = 3.67$; $SD = .65$; $n = 73$). More specifically, educators *strongly agreed* to using *other forms of communication* ($M = 4.36$; $SD = .93$; $n = 14$) including texting, communicating through the teaching aide that visits their classroom, and project visitation meetings. The highest frequency was reported among 36.62% educators who communicate *once a year* ($f = 26$). Followed by 31.0% of educators who reported to communicate *more than twice a year* ($f = 22$). Additionally, educators reported to *strongly agree* they *consider the personal strengths of ASD students* ($M = 3.55$; $SD = .55$; $n = 73$) when creating IEPs. The top three barriers educators reported included, *not enough time to mentor* ($f = 21$, 29.6%), *ability for general education students to work with ASD students* ($f = 17$, 23.9%), and *the ability of the ASD student* ($f = 13$, 18.3%).

Conclusions, Recommendations, and Implications

This study found that Texas educators reported ASD students have some involvement with raising or managing animals, floral design, and horticulture and excelled at the activities as well. Educators can help ASD students expand on their strengths and develop interests, and experiences in potential careers in those fields (Pirtle, 2012; Grandin & Duffy, 2008). Educators and parents serve as the proximal environmental influences to help ASD identify a career and develop the essential skills for the career (Lent et al., 1994), therefore communication is important. Texas educators reported to predominately use texting and communication with parents, which can be a quick and direct form of communication. Educators also serve as positive proximal environmental influences (Lent et al., 1994) when they are involved in and consider ASD students' personal strengths when developing IEPs. Additionally, the time commitment educators must spend to alter their instructional design for each student may not allow for enough time to directly mentor the ASD student (Pirtle, 2012). We collected data during a busy season for agricultural educators, therefore, could have impacted our response rate. We suggest further research be conducted on the career aspirations of ASD students and the impact parents have on ASD students' career path.

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