

Teacher Perceptions and Planned Behavior Related to Agriscience Externship Experience

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Introduction

Externship experiences have proven to be valuable in many ways (Hurley et al., 2024). They have been shown to not only increase teachers' knowledge and skills, but also result in significant changes to their teaching (Bowen et al. 2018) found that due to their experience, teachers reported seeing the need for incorporating more workplace readiness skills into their courses. Research to explore school-based agriculture education (SBAE) teachers experience with agriscience related externships is especially timely considering in many SBAE programs across the United States, teachers have been working to implement the Next Generation Science Standards and their Career Technical Education standards in tandem. These standards represent a shift in pedagogical approaches to teaching and learning (National Research Council, 2012), and many SBAE teachers don't feel prepared to teach the science content (Chumbley et al., 2019). To address this need, the USDA NIFA grant funded project Next Generation Agriculture Science NGAS) (Vaughn 2021-2024) developed a teacher externship program that placed a SBAE teacher with a local agriscience industry professional for a 40-hour experience. Teachers who completed the hours and provided a specified deliverable of a lesson plan, were awarded a stipend of \$1,000.

Research objectives included: 1) describe SBAE teacher extern attitudes, subject norms, perceived behavioral control, and intentions of employing industry practices experienced during their externship into their classroom, as well as their perception 2) explore the correlation in said constructs.

Theoretical Framework

The Theory of Planned Behavior (TPB) (Ajzen, 2002) was utilized as the model framework to describe human behavior. Its three constructs of 1) attitudes towards the behavior, 2) subjective norms, and 3) perceived behavioral controls, are positive predictors of behavioral intentions (Ajzen, 2002). While attitude is defined as one's feelings towards a behavior and its associated risks and positive outcomes, social pressure to perform a behavior are the subjective norms (Ajzen, 2002). Perceived behavioral control is the perceived ability to perform or regulate a behavior (Ajzen, 2002). TPB has been widely used in the context of evaluating professional learning (PL) experiences (Patterson, 2001), implementation of standards (Haney et al., 1996), and intentions to engage with classroom science investigations (Johnson & Crawley, 1991). In this study, TPB is applied to explain how participants implement industry practices from their externship in their classroom instruction.

Methodology

This study utilized a correlational research design. Consideration for Dillman et al. (2014) tailored design in the recruitment of participants and design of the survey instrument. The instrument explored four constructs in relation to TPB: attitudes towards the behavior, subjective norms, perceived behavioral controls, and intentions of agriscience teachers to implement industry practices from their externship into their classroom. Teacher perceptions of the externship experience was the final construct. SBAE teachers who had participated in the NGAS agriscience teacher externship program ($N=20$) were invited to complete the Qualtrics survey, 10 participants responded ($n=10$), representing a 50% response rate.

Externship participants implementing industry practices from their externship into their classroom instruction is the study's target behavior. The instrument included several demographic factors in addition to several items for each construct. Items regarding subjective norms (i.e., five-items), perceived behavioral control (i.e., six-items), intentions (i.e., six-items), and perceptions (i.e., five-items), were measured on five-point Likert scales ranging from 1 (*strongly*

disagree) to 5 (*strongly agree*). Measuring attitude consisted of a bipolar semantic differential eight-item, five-point scale between 1 (e.g., *negative adjective*) and 5 (e.g., *positive adjective*). Reliability of all scales surpassed the acceptable value of Cronbach's alpha of .70 or higher (Nunnally, 1967). Responses from the Qualtrics survey were imported into SPSS Version 29 to compute descriptive and non-parametric correlational statistics due to the small sample size ($n=10$) (Spearman, 1961).

Results

Objective one sought to describe the constructs. Respondents had, on average, a favorable attitude towards the target behavior ($M = 4.67, SD = 0.43$), confidence to control the behavior ($M = 4.33, SD = 0.72$), deliberate intentions ($M = 4.35, SD = 0.43$), and positive perceptions of the externship ($M = 4.54, SD = 0.50$). Respondents identified subjective norms to be "somewhat agree" ($M = 3.96, SD = 0.55$). Non-parametric correlations among the five constructs were used in accordance with objective two. Four significant and moderately positive relationships arose between attitudes and intentions ($\rho = .66, p < .05, n = 10$), subjective norms and perceived behavioral controls ($\rho = .65, p < .05, n = 10$), subjective norms and perceptions of externship ($\rho = .65, p < .5, n = 10$), and perceived behavior controls and intentions ($\rho = .68, p < .05, n = 10$).

Conclusions

Respondents reported positive outlooks and control over the target behavior, with intentions to bring back industry practices to the classroom, supportive of Hurley et al. (2023). While the limited sample of SBAE teacher were not as externally pressured to perform the behavior as compared to similar literature (DiBiase & McDonald, 2015; Harmon et al., 2023), subjective norms remained associated with behavior control and externship perceptions. Intrapersonal feelings had the greatest relationship with behavioral intentions, in which envisioning oneself having the attitude and confidence to implement externship can lead to forthright intentions.

Recommendations

Considering the generally positive responses of the externship program and participants' intentions to implement industry practices into their classroom instruction, it is necessary that such professional learning opportunities continue and be regularly coordinated by the California Agriculture Teachers' Association (Bowen et al. (2018; Chumbley et al. 2019). As NGAS coordinates more externships, and gathers enough data from a larger sample size, a regression analysis is recommended to identify constructs that predict the greatest variances in intentions (Ajzen 2002). Further investigation should highlight why these teachers disregarded the subjective norms established by their social and professional circles (Ajzen, 2002).

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