

Safety! What is it good for?

Introduction/need for research

School-Based Agricultural Education (SBAE) programs often engage in topics of instruction where safety is of the utmost concern (Dyer & Andreasen, 1999; Langley et al., 2018; Saucier et al., 2014). Within these programs, a focus on active learning often places an increased focus on the proper safe engagement of students with learning materials (Clarke, 2010). While there have been numerous studies that focus on the identification and discussion of safety in agricultural education ([Blinded]; Rudolph & Retallick, 2015; Ullrich et al., 2002), the lack of a specific agreed upon SBAE safety culture led to the formation of a pilot study to address such gap. This pilot study sets out to determine the score of differentiation among SBAE programs as it relates to their culture of safety. Echoing themes pulled from related secondary safety practices and post-secondary safety climate studies (Chumbley et al., 2018, 2019; Langley et al., 2018; Ullrich et al., 2002), this study aims to begin the discussion to identify the safety climate of SBAE agricultural mechanics programs and allow for the implementation of best practice development for SBAE instructors and their educators.

Conceptual or theoretical framework

The theory of planned behavior (Ajzen, 1991) was selected to be used as the conceptual frame for this study. Ajzen established this theory by discussing the interactions of an one's attitude toward a behavior, subjective norms, and perceived behavioral control can lead to their intention affecting their subsequent behavior. In the context of this study, SBAE advisors' attitude toward safety climate factors is being examined in an attempt to establish the connection of their intention to establish safety culture in their programs as is should enlighten their subsequent behavior to follow through with the implementation of that culture.

Methodology

A random sampling of SBAE instructors, selected by chapter across four states, were requested to participate in a culture of safety pilot study. Of the 793 chapters selected to participate in the pilot, 125 advisors from 116 chapters responded resulting in a 14.63% response rate. Of these advisors, 90 indicated that they were either currently or had formerly taught agricultural mechanic classes and formed the participant pool for the pilot study. The participants were asked a series of questions regarding safety concerns, practices, and perceptions in SBAE programs. Among the questions participants were asked to rank motivating factors that lead to the promotion of student safety in the SBAE classroom/laboratory (Have students be best prepared for the workforce; Keep aligned with district/state/federal policy; Keep campuses safe; Keep classroom/laboratory safe; Keep equipment safe; Keep students safe; Preserve materials; Promote student awareness of safety). These factors were reviewed and agreed upon by a panel of university experts that focus their research on agricultural mechanics topics.

Results/findings

Participants for this study were in between their first year and 41st year of teaching with an average of 13.13 years ($SD = 10.04$) of experience. The programs that were represented were

primarily one teacher departments; however, the average department size was 2.67 ($SD = 1.89$) and ranged from one to thirteen. The participants were primarily male ($f = 55$, 61.80%), had at least some level of education post-bachelors ($f = 67$, 75.28%), and taught in a rural ($f = 36$, 40.45%) or small urban population ($f = 32$, 35.96%) location. Reviewing the data, the highest-ranking motivating factor for the promotion of safety in SBAE programs was “Keep students safe” ($M = 1.31$, $SD = 1.06$) where 80 participants (88.89%) ranked it as the number one factor. The next two factors, “Keep classroom/laboratory safe” and “Promote student awareness of safety” both averaged a 3.29 ranking ($SD = 1.44$; 1.51) and was nearly a full rank and a half above “Have students be best prepared for the workforce” ($M = 4.61$, $SD = 1.77$). Three factors, which were “Keep campuses safe” ($M = 5.16$, $SD = 1.65$), “Keep equipment safe” ($M = 5.27$, $SD = 1.52$), and “Keep aligned with district/state/federal policy” ($M = 5.72$, $SD = 1.92$), averaged their rank between 5 and 6. “Preserve materials” ($M = 7.36$, $SD = 0.95$) rounded out the factors where 53 participants (58.89%) rank it as the lowest of the factors.

Conclusions

A key theme of student focused instruction arose from this pilot study, as three of the top four factors related directly students. The promotion of safety, within this group, tended to take the overall influence away from the SBAE program or district and placed it more squarely on the individual student. There is an argument that “Keep classroom/laboratory safe” could have been interpreted with an individual student focus mindset which would help to solidify the notion that SBAE instructors in agricultural mechanics courses place the influence on individual student safety over all other factors. While the next grouping of factors, “Keep campuses safe,” “Keep equipment safe,” and “Keep aligned with district/state/federal policy,” all focus on administration or campus safety, they still had a portion of the participants ranking each in the top three. The only factor that seemed to generally have the lowest impact was “Preserving materials,” which would further indicate that there is a clear distinction between individual and object where student wins out in terms of importance.

Implications/recommendations/impact

This pilot shows that there may be a larger theme in the foundation of safety culture within SBAE that focuses on student understanding, perception, and practice. If the influence that has been identified is true, further exploration of the overall current stance of the SBAE safety culture should be pursued. With the factor “Have students be best prepared for the workforce” ranking in the top half and nearly 30% of the respondents indicating it is in their top three factors, discussions surrounding best practices for SBAE instruction should also be approached. With countless SBAE instructors solely focusing on the content that needs to be taught, which should be a key component to any program, there tends to be the fall off of the emphasis of practical application post-graduation. With the clear student-first focus across the factors, safety curriculum should be re-evaluated to determine where potential shortcomings are alongside the implementation of best practices professional development for in-service SBAE instructors. While there may be multiple challenges ahead, beginning the discussion in defining SBAE’s culture of safety and identifying where SBAE programs align with that definition should be a step that can be easily agreed upon.

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