The Teaching Techniques of Alabama Agricultural Science Educators

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Introduction

For School-Based Agricultural Education (SBAE) instructors, the teaching techniques used are vital in the planning and implementation of classroom instruction. These techniques are how instructors deliver content and facilitate student learning (Newcomb et al., 2003; Phipps et al., 2007; Talbert et al., 2014). Even with the various levels of professional development on teaching techniques, SBAE educators still gravitate towards the use of lecture and lecture-based techniques mainly (Boyle, 2011; Smith et al., 2015). Thus, the purpose of this study is to determine teaching method instruction and the teaching techniques being utilized in the SBAE. The following objectives guide this study:

1) Identify common teaching techniques traditionally taught to pre-service agricultural science educators
2) Determine commonly used teaching techniques in Alabama school-based agricultural education

Theoretical Framework

This study is guided by the Self-Efficacy (SE) theory. Research conducted in the field of agricultural education frequently uses Bandura's (1977) social cognitive theory as a framework, but more specifically, Bandura's SE theory is utilized often to help explain the underlying motivations and perceptions of teachers (Roberts et al., 2006; Stripling et al., 2008; Blackburn et al., 2017). McKim and Velez (2016) conducted a multi-journal review of agricultural education studies that used SE as their theoretical framework from the years 1997 to 2013, and of the 30 studies they located, they found that most of the research investigated teacher retention. However, their study also indicated that at that time there was not as much research exploring outcomes of teacher SE, such as instructional success, which this study aims to identify. However, because of our own review of the literature, we recognize that there is considerable academic conversation on the difference between teacher efficacy and teachers' beliefs about their SE. As a result, we chose to base our framework within teachers' beliefs about their SE since our study looks specifically at the confidence levels and self-perceived competency of teachers.

Dellinger et al. (2008) describe teacher SE beliefs as a "teacher's individual belief in their capabilities to perform specific teaching tasks at a specified level of quality in a specified situation" (p. 752). In other words, SE beliefs speak to a teacher's perception of what counts as an accomplishment in their classroom, which is typically tied to student learning and success. When applied to the agricultural teacher's classroom, it is possible that teachers will become intimidated by instructional situations, especially when they do not feel that they are confident enough to handle it.

Methods

To establish the instrumentation for this study, an in-depth review of commonly used texts and articles used in Methodology of Teaching courses was conducted (Eggen & Kauchak,

2020; Kolb, 1984; Newcomb et al., 2003; Phipps et al., 2007; Plass et al., 2015; Talbert et al., 2013). Utilizing these texts, we identified 20 teaching techniques and a commonly held naming convention for each method was developed through the different established definitions. This naming convention was reviewed by two faculty who regularly teach the pre-service teachers in Alabama for face validity. It was also determined that the terms "Teaching Methods" and "Teaching Techniques" are used interchangeably through these texts. Therefore, this study uses the term "Teaching Techniques" when actively referring to these forms of teaching. To determine the different techniques that Alabama educators employ in their classrooms; an instrument was built asking participants about the different teaching techniques: Which techniques they were taught in teacher preparation; which techniques they utilize in instruction; and their competence to use each technique. Additional characteristic data was also captured within this study. There were 30 participants selected at the 2022 Alabama Agricultural Science Teacher Conference, with 28 fully completing the instrument.

Results/Findings

When looking at which techniques had been taught to the participants, Direct Instruction, Discussion, Experiential Learning, and Lecture Discussion were taught most as each had 16 (57.14%) responses. Of the remaining 16, Role Playing (n = 5, 17.86%), Field Trip (n = 7, 25.00%), and Simulation (n = 7, 25.00%) were the least taught techniques. Participants indicated they are most utilize Demonstration Techniques in their own course instruction with 27 (96.43%) responses. Direct Instruction and Discussions (n = 26, 92.86%) followed closely behind. Case Studies (n = 11, 39.29%), Role Playing (n = 13, 46.43%), and Supervised Studies (n = 14, 50.00%) were the least utilized by the participants. Participants perceived competence for each of the techniques showed Average to Above Average competence in Direct Instruction (M = 3.89, SD = .77), Demonstration (M = 3.79, SD = .92), and Field Trip (M = 3.79, SD = .92) techniques. The participants did however indicate Below Average competence in Case Study (M = 2.82, SD = 1.16), Role Playing (M = 2.82, SD = .98), and Supervised Studies (M = 2.82, SD = 1.10) techniques.

Conclusions

Reviewing the data shows that the previously taught techniques were utilized by participants more often in their course and instruction and had higher perceived competence than those that they had not received training on. Looking back at Bandura's (1977) SE theory, it appears that an educator's use of a technique and their perceived competency is connected to their previous knowledge of said technique. There was a large increase in utilization of techniques compared to the rate they were taught as course instruction requires the use of differing techniques in and outside the classroom. This also likely connected to the higher competency averages while also lending to the distribution as indicated with the SE Theory.

Implications/Recommendations/Impact

This study shows that educators should be aware of the different techniques they could use in their course instruction. Teacher education should provide, at minimum, an overview and explanation of all the common techniques used in the classroom and laboratory. Future studies should focus on different instructional designs of teacher preparation courses to best provide the wide range of teaching techniques to use within agricultural education.

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