Perceived Effects of Preservice Agricultural Teachers Receiving Integrated Skills Acquisition (ISA) During Teacher Education Curriculum

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Introduction

Teachers need to master pedagogy, content, and pedagogical content (Darling-Hammond, 2005). One of the challenges in teacher education programs is designing a curriculum which provides preservice teachers with all the knowledge and skills they need (Torres, Kitchel, & Ball, 2010). Further complicating the situation is decreased amount of first-hand agricultural experience of preservice teachers (Albritton & Roberts, 2020). Given these constraints, teacher educators should explore options to provide a variety of learning experiences for preservice teachers to gain technical skills. This study explores the lived experiences of preservice teachers around one approach of curriculum integration. This study aligns with Priority 4 from the American Association of Agricultural Educators (AAAE) National Research Agenda: Meaningful and Engaged Learning in All Environments (Edgar, Retallick, & Jones, 2016).

Theoretical Framework

Implementation of this study and data analysis were guided using a lens of experiential learning (Dewey, 1938; Kolb, 1984, Roberts, 2006) and self-efficacy (Bandura, 1977). According to Dewey (1938), experience and education are interconnected and build off prior experiences. As a contemporary example, preservice agricultural education teachers are increasingly likely to come from the subdivision, rather than from the farm. Doolittle and Camp (1999) stated that "all learning begins with an individual's prior knowledge" (p. 10). Those students coming from the farm have a greater opportunity of gaining first-hand agricultural knowledge and skills than those from a subdivision. Self-efficacy is the belief in one's capability in performing any one or combination of behaviors and is paramount in predicting why, how, and what actions a person might successfully attempt, fail, or disregard (Bandura, 1977). Once employed, new teachers are immediately required to teach agricultural knowledge and skills. What benefits would be gained for new teachers and teacher educators if agricultural technical skills were immersed into pedagogical coursework? This study explores the lived experiences of preservice teachers who participated in an immersive learning experience contextualized in a teaching methods course.

Methods

This study utilized qualitative methods to interview n=9 preservice teachers about their experiences in learning technical agricultural skills as a part of an agricultural teaching methods course. The interviews conducted are part of a larger exploratory quasi-experimental study (N=31) that prescribed a specific agricultural technical skill within the demonstration method microteaching. The treatment group received the Integrated Skills Acquisition (ISA), a one-on-one educative experience specific to each agricultural technical skill. The control group was assigned the same set of skills but did not receive the ISA treatment and were asked to develop the demonstration through their own process. The nine participants to be interviewed were selected based on extremes in change scores measurements of participant self-efficacy to do and teach their skill. This study sought to understand participants' perspectives and seek further detail as to the factors that may have caused growth from the experience (Creswell, 2013). Interviews were conducted over 30 to 45 minutes with a semi structured interview guide. Data

analysis was conducted using a basic thematic analysis using open coding (Saldaña, 2016). Next, structural coding was used to organize initial codes within a framework of experiential learning (Dewey, 1938; Kolb, 1984; Roberts, 2006) and self-efficacy (Bandura, 1977).

Results/findings

Four major themes emerged of interest for facilitators of teacher education programs. The first theme emerged from a consistent discourse across all participants on the focus of preparations. Those participants with prior experiences in performing the skill expressed more focused efforts on how they would teach the skill to effectively facilitate learning. Participants without prior experiences with their assigned skill focused their efforts on performing the skill correctly. The second theme found participants to perceive their classmate's background in a specific subject area (i.e. animal science or horticulture) as making them an expert in that area. This led to stated feelings of anxiety of teaching someone who might already know the technical skill and/or making a mistake in front of an *expert* student/peer while performing the skill. The third theme that emerged was a general appreciation for the assignment. Most participants expressed anxiety upon discovering their assigned skill but in reflection a general appreciation for the time and thought involved in the process of being prepared was valued. Finally, a theme of an increased awareness of personal access and to expert agricultural resources was realized. In preparation for the assignment more participants sought assistance in relationships than from the internet. Participants identified personal contacts in technical skill areas not previously considered within their network of preparatory resources.

Conclusions/Implications

This study highlights the importance of previous experiences for new SBAE teachers. The assigning of technical skills to the demonstration micro teaching in the teaching methods appeared to help students achieve expressed levels of self-efficacy and extend resource systems for developing skill-based lessons. Participants from the treatment and control group generally defined a broader scope of efforts required in preparing for unknown subject areas. Those participants receiving the ISA treatments in this qualitative analysis did have additional instructional time to the control group but control group members with adequate previous experiences or timely skill-based coursework in specific skill areas were equal or more effective than the ISA. Though this study is exploratory there are potential implications for teacher educators. Evidence from these participants suggest that more than an initial experience cycle but a series of full cycles of the experiential learning process are required prior to teaching a technical agricultural skill (Roberts, 2006).

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