

Words that Grow: Fostering Agricultural Literacy Through Effective Writing Instruction

Introduction

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Introduction

Agricultural education instruction should prioritize literacy skills to bridge the gap between knowing agriculturally based content and possessing literacy skills to read and write adequately in the field. Hasselquist et al. (2019) noted, "Disciplinary literacy includes the way the content is organized, how it communicates key information, technical vocabulary, and how texts are used" (p. 141). Shanahan and Shanahan (2012) defined disciplinary literacy as using specialized words and terms in speaking, listening, and writing. Reading, writing, and communication development using skills acquired through knowledge and understanding are seldom reinforced during instruction. SBAE teachers are pivotal in promoting literacy, particularly in agricultural contexts (Park & Osborne, 2007). Understanding instructor-led pedagogical practices for fostering disciplinary literacy in agriculture is crucial for student success. School-based agricultural education (SBAE) teachers must equip students with the specialized language and knowledge needed for future agricultural careers. As a component of a more extensive investigation, this study sought to identify teachers' use and understanding of integrating writing into instruction to enhance student literacy.

Theoretical Framework

Bandura's (1997) triadic reciprocal causation model provided the theoretical framework for this study. This model posits an interconnectedness between the person (P), environment (E), and behavior (B) that influences desired change. Bandura (1997) defined personal factors (P) as 'beliefs in one's capabilities to organize and execute courses of action' (p. 3). This concept underpinned the examination of teacher-initiated literacy instruction in secondary agriscience education. The environment (E) was described by Bandura (1997) as a pathway for influencing self-efficacy through modeling (Bandura, 1997; Roberts et al., 2008).

Methods

A one-day professional development session on agricultural literacy was conducted to clarify the distinction between agricultural literacy and being agriculturally literate. Ten participants from the Alabama Association of Agricultural Educators conference attended the session. Three research questions guided this study: 1) What instructional strategies did secondary SBAE teachers employ to foster agricultural literacy in their students? 2) How did secondary SBAE teachers assess their students' progress in developing agricultural literacy skills? 3) What role did agricultural literacy play in the overall development of secondary SBAE students? Following the workshop, the same participants agreed to participate in a qualitative study using a semi-structured interview process. Three semi-structured interview questions were developed from existing literacy research and were used to gather data (Merriam, 2009). Participants, consisting of four women and six men, were interviewed by phone within three weeks of the professional development. Interviews lasted approximately 40 minutes, were recorded, and transcribed. Pseudonyms were used to ensure anonymity (Kaiser, 2009). Data analysis involved open coding, and participant comments were analyzed independently according to the research questions. Trustworthiness was ensured through the diverse

backgrounds and experiences of the participants. Transcendental analysis was employed to uncover the essence of literacy instruction in secondary SBAE. Peer discussions enhanced credibility (Guba & Lincoln, 1989) and identified sub-themes. Three primary thematic categories emerged from the analysis: 1) classroom environment (teacher-controlled), 2) learning environment (student-controlled), and 3) foundational competencies (skills/materials).

Findings

Four primary themes and subthemes were identified from the data analysis: classroom environment (teacher controlled) resulted in three subthemes: 1) Instructional choice, where teachers primarily used traditional instructional methods, such as direct instruction and vocabulary identification, to teach agricultural terms, 2) Pedagogy and the methods and practices of teaching instructional strategies, including guided notes, contextual learning, and scaffolding, to deliver agricultural literacy instruction, and 3) Innovative assessment approaches like project-based assessments and technology applications. Some teachers favored formative assessment using observations and questioning, while others relied on traditional tests and quizzes. The use of technology-based platforms for assessment was less common. Primary theme two, instructional choice (student-controlled), identified the importance of creating a student-centered learning environment and addressing individual needs. Geography and family background increase teaching students with learning difficulties. Gender differences and adaptive teaching styles were prevalent. Participants emphasized providing opportunities for self-directed learning and research while challenging misconceptions to promote critical thinking. Primary theme three, foundational competencies (skills/materials), explored participants' perceptions of foundational knowledge that can help establish student literacy. Three subthemes emerged from the analysis: Subtheme one, *reading or writing to learn by assessing foundational knowledge*, identified how teachers establish a context before new vocabulary using discussion and writing to evaluate learning and adjust instruction. Subtheme two, *developing knowledge and understanding*, emphasized agricultural terms and the difficulties of new concepts without foundational knowledge. Subtheme three, *educational materials* included digital and text-based instruction. The participants sparingly relied on textbooks because of availability and outdated content. Teachers often accessed online resources for current information. Participants relied on content delivery through students' tablets and smartphones for digital access to materials.

Conclusions, Implications, and Recommendations

The study found that SBAE teachers are engaged in various literacy activities, and participants often overlooked student writing. Teachers used explicit explanations, group work, and project-based activities to introduce and apply new agricultural concepts. Differentiated materials for literacy instruction were evident, but they often lacked a focus on individual writing activities—this limited students' opportunities to apply new concepts and develop literacy skills. Teachers may have high self-efficacy in student group work but struggle with implementing individual writing prompts. Teachers primarily relied on contextual vocabulary teaching methods and did not fully utilize formal assessments to measure student understanding of specialized terms, indicating a gap in their literacy instruction skills. The findings highlight the need for SBAE teachers to prioritize student writing and incorporate more individual writing activities into their instruction.

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