

Elementary Pre-Service Teachers' Perceptions of Agriculture

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Introduction and Need for Research

With the widespread popularity of instant communication methods, the ability to share misinformation has never been easier (Danner et al., 2022). While online platforms have removed many barriers, they have also introduced challenges, particularly within agriculture, an industry often misunderstood by the public (Chowdhury, 2023). One of the clearest ways to gauge public understanding is through educational experiences (Dewey, 1986). However, agricultural education is often confined to elective school-based agricultural education (SBAE) programs, limiting broader exposure (Roberts & Ball, 2009). Teachers outside of SBAE are rarely expected to stay current on agricultural practices (Vallera et al., 2020) and may reflect public misconceptions when discussing agriculture (Ingram et al., 2018). Teachers play a key role in shaping students' perspectives on complex issues like agriculture (Apple, 2009; Skipper & Douglas, 2015), yet they are also asked to take on roles beyond their training (Van Droogenbroeck et al., 2014). This raises questions about the accuracy of agricultural content in non-agriculture classrooms and highlights a pressing need to understand pre-service teachers' perceptions of agriculture to guide future educational outreach (Burrows et al., 2020)

Theoretical Framework and Literature Review

This study was grounded in Bandura's (1997) theory of triadic reciprocal determinism, which emphasizes the interaction of environmental, personal, and behavioral factors in shaping human behavior. Burrows et al. (2020) applied this framework to agricultural literacy, noting that informed public discourse depends on understanding the food and fiber system. Although programs like Agriculture in the Classroom (AITC) provide accessible, standards-aligned resources (National AITC, 2023), many educators remain unaware of them. Burrows et al. (2020) found that 82% of teachers had never heard of AITC, even though 92% believed agriculture was important for students to learn. Additional research indicates that pre-service teachers' confidence to teach agricultural content is shaped by their hometown background, familiarity with programs like AITC, and progression through teacher preparation (Stair et al., 2012; Bowling et al., 2024). Yet, a critical gap remains in understanding how these factors influence their self-efficacy and preparedness. Understanding how pre-service teachers perceive agriculture and how confident they feel integrating it is essential for addressing misinformation that may unintentionally persist in the classroom.

Methodology

This study assessed agricultural literacy and confidence to integrate agriculture into curricula among pre-service elementary teachers at [University], and was guided by five objectives: (1) assess perceptions of agricultural education, (2) examine confidence to deliver agricultural content, (3) investigate factors influencing willingness to incorporate agriculture, (4) compare demographic characteristics tied to perception differences, and (5) explore familiarity and use of AITC resources. Participants were spring 2025 Teacher Education Program (TEP) students (N = 93) who met entrance criteria, with $n = 26$ usable responses collected via an online Qualtrics survey that followed Dillman et al.'s (2014) tailored design methods. The instrument, adapted from Burrows et al. (2020) and validated by expert reviewers (Mills & Gay, 2019), included Likert-type statements across six constructs—Importance, Ag Integration, Ag Lessons,

Confidence, Curriculum and Standards, and Demographics—rated on a 4-point scale from *Strongly Disagree* to *Strongly Agree*. It also collected demographic data such as gender, year in school, and hometown population. Reliability was satisfactory ($\alpha = 0.86$) (Mills & Gay, 2019), and non-response bias was assessed with no significant differences found (Lindner et al., 2001). Data analysis followed Field's (2018) guidance, using descriptive statistics, Pearson's correlations, multiple regression, t-tests, and ANOVAs to examine patterns and predictors related to grade-level focus, confidence, and AITC familiarity. The typical respondent was female (76.92%), enrolled in student teaching (57.69%), from an urban area (46.15%), had heard of AITC (52.00%), but had not used it (84.0%).

Results/Findings

Objective one assessed pre-service elementary education teachers' perceptions of agricultural education, revealing generally positive views across constructs: importance ($M = 3.34$, $SD = 0.37$), willingness to integrate agriculture ($M = 3.29$, $SD = 0.33$), lesson perceptions ($M = 3.14$, $SD = 0.41$), confidence and use of professional development ($M = 2.59$, $SD = 0.40$), and alignment with curriculum standards ($M = 3.27$, $SD = 0.39$). Objective two found that confidence in teaching agricultural content was moderately correlated with perceived importance ($r(24) = 0.421$, $p = .03$) and strongly correlated with willingness to integrate ($r(24) = 0.664$, $p < .001$); it was also moderately related to hands-on skill-building ($r(24) = 0.386$, $p = 0.05$) and meeting STEAM standards ($r(24) = 0.561$, $p = 0.003$). Objective three showed significantly greater willingness among final-year students ($M = 3.29$, $SD = 0.33$) than early-stage peers ($M = 1.44$, $SD = 0.58$), $t(49) = 14.02$, $p < .001$, $d = 3.93$, though willingness was not meaningfully predicted ($R = 0.02$, $p = 0.92$), despite moderate correlation with confidence ($R = 0.44$, $p < .001$). Objective four found no significant differences in perceived importance by hometown population or gender, but willingness varied by TEP year, $t(36.74) = 13.29$, $p < .001$, $d = .89$. Year did not predict confidence, though it correlated with curriculum and standards scores ($r = 0.69$, $p < 0.001$). Objective five showed no significant differences in lesson interest based on AITC familiarity or hometown population.

Conclusions/Recommendations/Implications

Grounded in Bandura's (1997) theory of triadic reciprocal determinism, this study examined how environmental, personal, and behavioral factors shape pre-service elementary teachers' perceptions of agricultural education. While participants viewed agriculture as relevant to their future classrooms, awareness and use of AITC resources remained limited. Confidence and willingness to integrate agriculture increased with teacher preparation progress and rural background, supporting findings from Stair et al. (2012) and Bowling et al. (2024). Despite recognizing agriculture's value, many lacked confidence and resource familiarity, highlighting the need for support in teacher education. These findings underscore the importance of early, intentional exposure to agricultural concepts in preparation programs. Though limited by sample size and design, results may inform curriculum improvements. Future research should include larger samples, longitudinal tracking, and qualitative methods to better understand how coursework, background, and professional development affect agricultural content integration.

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