

Click, Learn, Complete? Examining Who Persists in Online Agricultural Literacy Training

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Introduction

Agricultural literacy efforts build educators' capacity to help students understand what agriculture is, how it functions, and why it matters in daily life. The Agricultural Literacy Certification course is an online, asynchronous professional development course designed to increase educators' basic agricultural content knowledge. Beginning in 2025, the course became widely available for \$25, offering low-cost, flexible professional development. Yet, research on online learning shows that access alone does not ensure completion; rather, completion depends on engagement, motivation, and participation patterns that shape learner outcomes (Kizilcec et al., 2013; Xie et al., 2006).

This study examined educator completion in the Agricultural Literacy Certification course and explored how completion time impacted learning outcomes. Online course persistence remains a concern, especially when learners must independently manage time, motivation, and progress (Bawa, 2016; Broadbent & Poon, 2015). This study contributes to research on educator professional development, content knowledge acquisition, and scalable approaches to strengthening agriculture education.

Conceptual Framework

The Agricultural Literacy Certification course was designed using best practices for online pedagogy. The study conclusions and implications were examined through the lenses of Self-Regulated Learning Theory (Zimmerman, 2002) and Community of Inquiry (Garrison et al., 2000), which provided a framework for understanding how participants manage pacing, effort, motivation, and persistence towards completion in a flexible learning environment.

Methods

We conducted a program evaluation using de-identified data from the online course to explore completion time, content knowledge improvement, and differences in completion times across demographic groups. Two time frames were analyzed in the study. The 2024 participants ($N = 983$ enrolled, 386 completed) were those who enrolled in and completed the course from October through December; they did not pay to access the course, and those fees were paid by a grant. The 2025 participants ($N = 358$ enrolled, 143 completed) were those who enrolled and completed the course from January through December of that year. These participants did pay to access the course. Participants from both years included educators, students, Extension personnel, and agricultural professionals.

We completed the analyses using descriptive statistics, ANOVA, multiple t -tests, Welch t -tests, and Spearman correlations. In this study, completion is defined by finishing the coursework and passing the post-test. Time in this study is defined as the number of days between start and completion.

Results

First, participants in 2024 took less time than in 2025 (2024: $M = 17$ days; 2025: $M = 36.6$ days), but they had a financial incentive to join and complete quickly. Overall, college students (in-service educators) completed the course fastest ($M = 13$ days), while Extension and 4-H professionals were the slowest ($M = 74$ days), a statistically significant longer time to complete the course ($p = .025$). More importantly, no significant correlation was found between

time spent in the course and collective learning gains ($p = .41$), showing that completion time does not appear to influence outcomes. However, when we examined only learning gain between 2024 and 2025, the difference was statistically significant ($p = .004$). The 2025 cohort had a statistically significantly higher group mean ($M = 2.06$) than the 2024 cohort ($M = 1.42$) on the post-test at completion.

Second, the completion rate was stable across both years (2024: 39.27%; 2025: 39.94%). However, completion rates varied significantly across professional employment groups. Table 1 shows that Extension and agricultural professionals were most likely to complete the course, while secondary teachers and volunteers were far less likely to complete. Notably, participants who enrolled in the course but failed to complete the demographic portion (i.e., did not report professional information) had a 0% completion rate. This reporting component is in the first module of the course and indicates that they accessed the course but never moved beyond the initial attempt.

Table 1

Employment Group Counts and Completion Rates for 2025

	<i>n</i>	% of Course Completers
Extension & 4-H Professionals	45	64.4
Agricultural Professionals	18	61.1
Post-Secondary Educators	7	57.1
PreK-12 Educators	9	55.6
College Students	40	55
AITC Professionals	15	53.3
CTE Educators	36	50
Environment/NR Professionals	2	50
High School Students	4	50
Elementary Teachers	59	47.5
Education Program Staff	22	40.9
Volunteers	14	21.4
Secondary Teachers	20	15
Homeschool Educators	4	0
Public Policy Professionals	1	0
Unidentified Educator	1	0
N/A: Not reported	61	0

Note: These employment groups were compiled by the research team from descriptions and statements provided by participants.

Conclusions/Implications

There are three actionable conclusions that can be applied to this course and considered for practice by other online educators: 1) Prioritize learning quality over rapid completion, 2) Design targeted completion supports for lower-completing groups, and 3) Reduce early-course barriers to participation. Findings suggest that agricultural literacy professional development for low completers, such as secondary teachers and volunteers, may require targeted reminders and role-specific examples to support these groups. Course administrators should streamline onboarding and provide early engagement prompts to move participants beyond initial access and into active course participation.

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