

Cultivating Career Interests: A Qualitative Study of SOCIAL Studies Academy Fellows and Middle School Agricultural Integration

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Introduction, Purpose, and Objectives

Research indicates the global shortage of agricultural labor largely stems from bleak perceptions of agricultural careers (Fabino, 2024; Ganasih et al., 2023; Gunabhagya et al., 2017). Unfortunately, 61% of Americans either are not sure or only somewhat trust agriculture (12% and 49% respectively; Moore, 2020). Wachenheim and Rathge (2000) found that perceptions of agriculture were influenced by several factors including geographic region, exposure to agriculture, and demographics. Hoover et al. (2007), Riedel (2006), and Scott (2023) found that involvement in youth agricultural organizations was one major impact factor on perception of agriculture. Jean-Philippe et al. (2017) found that students who associated manual labor with agriculture were less likely to pursue an agricultural career. Fostering positive perceptions of agriculture amongst students and teachers may improve agricultural workforce participation (Benedetti & Crouse, 2020; Ganasih et al., 2023).

Moreover, the middle school years have been identified as the most pivotal time for implementing initiatives that encourage student exploration of STEM careers (Bleeker & Jacobs, 2004; Knezek et al., 2013; Roberts et al., 2018; Schmidt et al., 2012). The SOCIAL Studies Academy (SOCIAL) was developed to help mitigate the labor shortage and negative perceptions of the agricultural industry through high-impact professional development for middle school social studies teachers in South Carolina. The program provided a multi-year professional development focused on South Carolina social studies standard 8.3.CX, which deals with the economic impacts of the agricultural industry (South Carolina Department of Education, 2019, p. 80). SOCIAL provided tours of agricultural research and teaching facilities across South Carolina, exposed teachers to various agricultural technologies, college credit, a stipend, and provided resources to be utilized in their classrooms for enhanced learning. Participants of the SOCIAL Studies Academy are referred to as SOCIAL Fellows or Fellows.

This qualitative study was part of a larger study, and its purpose was to contribute to addressing the agricultural labor shortage by examining SOCIAL as an intervention to build agricultural literacy and competence in South Carolina middle school students through cross-curricular and standard-integrated instruction. The following objectives guided this study:

1. Identify lessons/activities related to agricultural literacy that SOCIAL Fellows used with their students in the 2022 to 2025 school years.
2. Discuss recommendations SOCIAL Fellows have for possible activities/instruction that can enhance student learning about agricultural literacy.

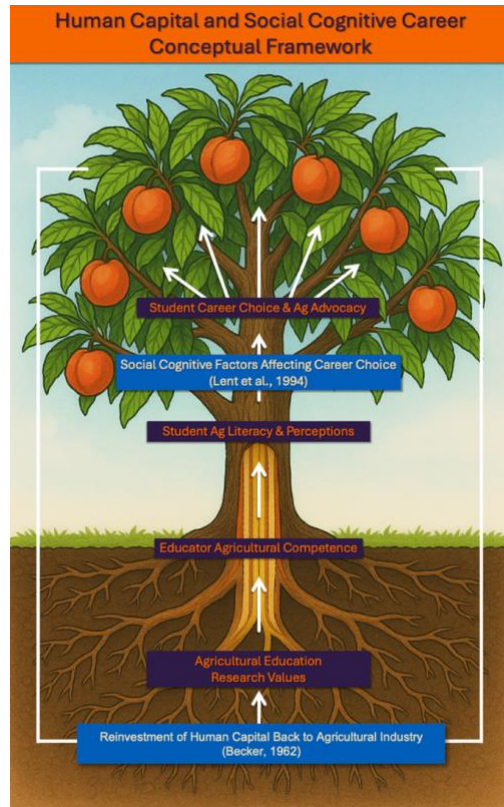
Conceptual Framework

The conceptual framework for this study was developed by combining Human Capital Theory (HCT; Becker, 1962) and Social Cognitive Career Theory (SCCT; Lent et al., 1994, 2002; Figure 1). Using the American Association for Agricultural Education (AAAE) *Research Values* (2023) as the root of program development, human capital investments were made into middle school social studies teachers to expand agricultural competence through the high-impact professional development programming. This was then shared with students through standards-based instruction to encourage positive changes in perceptions toward agriculture and

agricultural careers. These changes in perception, being a social cognitive career factor (Lent et al., 1994, 2002), would then impact career and academic major decisions in youth beginning at the pivotal middle school years. As students choose careers, some may join the agricultural sector while others may go on to be advocates for the industry, bearing fruit that plants the seed of agriculture as a return on investment for the industry.

Figure 1

Peach Tree Model Integrating Human Capital and Social Cognitive Career Theories in Agricultural Education



Methods

A semi-structured interview protocol was employed to maintain interviewer focus while supporting flexibility and open-ended probes (Creswell & Poth, 2018; Merriam, 2009; Rubin & Rubin, 1995). The research team used Lincoln and Guba (1985) as a guide for trustworthiness. Reflexivity was used prior to the start of the study and before, during, and after interviews. An observational protocol was used during interviews. Audit trail and careful documentation, triangulation, peer debriefing/review, and thick, rich descriptions (Merriam, 2009) were used, as were Zoom (n.d.) recordings and transcripts were stored in a secure drive. The research team also followed Lincoln and Guba's recommendations for authenticity.

Participants were recruited based on participation in SOCIAL ($N = 12$), and four Fellows ($n = 4$) participated. Participants were given a lesson packet developed by the lead researcher that highlighted the diversity of agriculture and agricultural careers. This lesson packet was given digitally and included a lesson plan and PowerPoint with notes and links, as well as a USB flash

drive of resources and pod hydroponic kit delivered by mail. The lead researcher scheduled 30-minute Zoom interviews with participants at their convenience to discuss the lesson and SOCIAL. Following interviews, the transcripts were uploaded into Delve Tool (n.d.) for coding.

The interview data were analyzed using coding methods recommended by Saldaña (2018). Codes were constructed inductively. Although there were specific outcomes for the SOCIAL Studies Academy, it was important that, to fully examine the program as an intervention to the problem, the participants tell their own stories, and organic themes emerge from the dataset. Reflective/reflexive journaling was used throughout the process with analytic memos to improve the coding process and analysis (Ezzy, 2002; Saldaña, 2018).

Saldaña (2018) recommended three phases of coding for a thematic analysis. The first set of open codes were constructed with raw data without much depth in analysis. Then, the open codes were analyzed for linkages between one another and put into groupings based on the best fit. This constructed the axial codes. Selective coding was then used to find the overarching themes and relationships between the axial codes. While themes were constructed using selective coding, the researcher also examined the linkages between themes and elements within themes. Upon the findings of the themes, the lead researcher then triangulated the findings using artifacts, reflexivity, and participant interview data.

Due to school restrictions for participation, the limitation of sample size was noted. While this limits transferability to other contexts, this study still provides rich data and insight into participant experiences. The diversity of participants and schools created a more holistic and wide-breadth picture to help compensate for this limitation (Creswell & Poth, 2018).

Findings

The data analysis resulted in 28 open codes. These codes were then refined into a set of 17 axial codes made up of either grouped open codes or individual open codes that were promoted to axial code. The same process was done again, and six selective codes/themes emerged from the combined or promoted axial codes (Table 1).

Table 1

Selective Codes/Themes from Academy Fellow Interviews

Selective Code/Theme	(f)
1. The Challenges and Opportunities for Curriculum Integration	66
2. Direct Evaluation of the SOCIAL Studies Academy	12
3. Discussions on the Vast Career Opportunities in Agriculture	28
4. The Responsibility of Teachers in Impactful Teaching	67
5. The Ripple Effects of SOCIAL from Teacher to Student	96
6. Transforming Student Understanding of the Complexity of Agriculture	63

Note. (f) indicates the frequency of the codes in the data.

The Challenges and Opportunities for Curriculum Integration

South Carolina social studies standard 8.3.CX was a frequent discussion amongst participants, with Teacher₁ being the most knowledgeable of the standard. Teacher₃ discussed

agricultural integration challenges with time being the primary constraint, a sentiment shared by other participants. “I wish I could have spent more time before[hand] getting ready for it, to really get the best things out of the extra resources y’all sent” (Teacher₃). This challenge was not strongly focused on the SOCIAL itself, but on the overall challenge of time for teachers in the education system. “We basically don’t have time... to get all the history in also” (Teacher₃).

On the other hand, all interviewees expressed the ease by which the resources and content from SOCIAL were integrated into their curriculum. Regarding the specific lesson provided for this study, Teacher₁ noted it “did really good aligning... I’m not even going to have to teach that standard.” There were several ways teachers found the resources to be “woven into our curriculum standards” (Teacher₂). Teacher₂ discussed the inclusion of “surplus” and “farming and agriculture and society” in their curriculum, which SOCIAL helped do. “I’ve really enjoyed participating in SOCIAL because I can align it with the content area” (Teacher₂).

Teacher₃ reported having an agricultural unit and mentioned “it aligns with [the standard], for sure.” Teacher₄ said the content aligned “really well” with the standard and “we still teach all the same [standards], even though we’re charter.” Teacher₄, also included “trade agreements and... grain prices... when Russia invaded Ukraine.” Further, agriculture was found to integrate well with the “progressive era,” as “the number one industry in the state,” and “modern day” social studies (Teacher₄). They expanded on this expressing that integration was “an easy step to take” and “I think that’s kind of the genius of the fellowship” and “[agriculture] is kind of a constant thread in the curriculum” (Teacher₄).

Direct Evaluation of the SOCIAL Studies Academy

This theme emerged almost deductively from the research team’s desire to evaluate SOCIAL. Two participants discussed how applicable their experience in SOCIAL was to other educational contexts including different classes and grade levels. Teacher₄ suggested “you could roll this out to other grade levels. I don’t think it has to be eighth grade South Carolina History.... Seventh grade Human Geography and Physical Geography... it’s all in there.”

While all four interviewees provided positive feedback, there were areas mentioned for improvement. Teacher₂ suggested “short video segments of [Research Stations] could be both engaging and informative... [and] more details—brochures—with South Carolina social studies teachers in regard to specific programs and activities that could be implemented in our classrooms to encourage agricultural literacy.” Teacher₄ reemphasized SOCIAL’s transferability to other contexts and recommended curriculum development to increase program impact.

Discussions on the Vast Career Opportunities in Agriculture

This theme was centered around the teaching of career opportunities. The impact of SOCIAL on teacher learning and sharing of these opportunities was seen throughout the interviews from all four participants. Participants discussed both their general approach to agricultural careers in the classroom and the inclusion of specific careers for students during their interviews. Teacher₃ mentioned having taught an entire lesson on agricultural careers.

Careers that were mentioned by three of four interviewees were UAV pilots and agricultural scientists/researchers. Three of four participants also referred to a specific assignment or activity they used to have students research agricultural careers. Teacher₄ also noted that they had “multiple [students] come up and say, ‘Thanks for doing that lesson for a few

days.” Teacher₄ also said, “I bet some of them will look at agriculture” in their career unit of a leadership class they take.

The Responsibility of Teachers in Impactful Teaching

This broad theme encompassed teaching methods and inclusion of SOCIAL resources, as well as the implied responsibilities that educators have to their students. Teacher₃ emphasized “it’s probably more on the teacher to go back and look at all that information from SOCIAL every now and then to kind of refresh our memory.” Regarding the lesson taught between the pre- and post-tests, Teacher₄ noted the responsibility of the teacher to cater the materials. “I mean, that’s just your job as a teacher.” On the other hand, Teacher₁ noted that they did not want to deviate too much (though it was evident that they did cater to their students with the material; reflexivity, 2025) “because I think you took your time and actually prepared it. I wouldn’t just ditch it and throw it out the window... I actually took my time and went through it” (Teacher₁).

Another aspect of this theme involved the independent growth of teachers professionally to continue to improve upon the inclusion of agriculture and agricultural careers into their curriculum. Teacher₄ indicated that they continue to build their repertoire of resources annually. Teacher₁ mentioned attending a state agricultural economics conference the week prior to the interview. Teacher₂ discussed their communication with a farmer in another state regarding international agriculture and the lessons learned from those conversations.

The Ripple Effects of SOCIAL from Teacher to Student

This theme was a result of witnessing the power of SOCIAL to impact the Fellows and, in turn, their abilities to impact student learning and perceptions of agriculture and agricultural careers through their experiences in SOCIAL. Teacher₁’s stated, “I come from a background of farming, you know, I grew up farming myself and I didn’t realize how in depth... there are so many moving pieces that make it all come together.” Overall, participants reflected they “had a better understanding of what types of careers were actually available” (Teacher₂). The Fellows’ immersion in the agricultural sector and the references to these experiences made it evident that this was a high-impact experience for these teachers (reflexivity, 2025).

In addition to sharing the experiences themselves, the participants also infused their knowledge gained from SOCIAL to improve instruction. The gained knowledge “inflows discussions in a lot of ways” (Teacher₄). [Students] liked [agricultural careers]” (Teacher₃). This was a direct result of the exposure of Fellows to agriculture and agricultural careers (reflexivity, 2025). “They were excited. They were amazed” (Teacher₂). “They were pumped” (Teacher₁). Teacher₄ noted that they “could see the light bulb coming on for some of them as well, especially those that are more math and engineering oriented.”

Transforming Student Understanding of Agriculture

South Carolina has both rural and urban areas, which were also represented by the participants. Teacher₁ taught at a rural school; however, they expressed that, collectively, students were still not aware of the agricultural industry. Teacher₂ taught in a district with a strong agricultural community near an agricultural university. Further, they noted that many students had an agricultural background. Teacher₃ noted that they had a few students who were tied to agriculture, but it did not seem to be as common as Teacher₂ (reflexivity, 2025). Teacher₄

taught in an urban and suburban area and noted it influenced agricultural literacy. Teacher₄ reported having “a couple that have an agricultural background, but not many.”

Another factor of influence was the background of each study participant. Teacher₁ came from a farming background and loved to share those experiences and connections with their students. While Teacher₃ did not have a traditional background in agriculture, they did share that their father was a fertilizer salesman and heavily influenced their exposure and disposition toward agriculture. “He was always, you know, pro-farming, pro-agriculture...” (Teacher₃). Teacher₄ explained that their exposure to agriculture was limited to their grandparents who farmed on a small scale growing up.

Moreover, the Fellows expressed newfound knowledge and awareness of agriculture and agricultural careers, regardless of previous exposure to the industry. The depth of the agricultural sciences was a key takeaway from all participants. Teacher₁ emphasized research in entomology and microplastics. They also likened the complexity of agriculture to a puzzle – being able to show students the part they had not seen. This was reflected in their statements about the diversity of careers and depth of knowledge many of these careers required. Genetic modification and research, as well as crop resilience (i.e., salinity), was discussed by Teacher₂. “They were amazed with how much knowledge was needed like with, you know, reading lab reports, or, you know, doing a soil analysis” (Teacher₂). Teacher₄ focused on the inclusion of women in the industry, the use of GIS and GPS, environmental stewardship, and the STEM involved in the agricultural industry.

Discussion, Conclusions, Implications, and Recommendations

Teachers used the prescribed lesson plan as provided and integrated many aspects of their experiences in SOCIAL. The emergent themes of the study revealed the strong linkages between teacher learning, teacher responsibility, and student learning and perceptions. This study revealed that when teachers increase knowledge and improve perceptions of agriculture integration into the curriculum comes naturally, and their enthusiasm is contagious. This strengthens the combined HCT-SCCT framework (Becker, 1962; Lent et al., 1994, 2002) in guiding the conceptual framework of this study based on the findings of this study, the research team concluded SOCIAL was an effective high-impact professional development program that provided adequate resources for enhanced coverage of 8.3.CX. SOCIAL increased and improved teacher interest and perceptions of agriculture. Moreover, the lesson provided was found to be effective in increasing student interest and perceptions of agriculture and agricultural careers. This reinforced the positive impacts of human capital investments into teachers (Becker, 1962).

Increasing the scope of SOCIAL and similar programs to encompass more non-agriculture subjects at the middle school level may increase agricultural workforce and degree program participation long-term. It may also provide an increase in diversity within the agricultural sector by attracting students from more diverse and non-traditional backgrounds.

It is recommended that middle school teachers and administrators (and other grade levels) seek and encourage opportunities for cross-curricular collaboration and high-impact professional development. It is recommended that professional development coordinators and teacher education faculty seek opportunities to reach non-agriculture teachers through cross-curricular professional development by exploring state standards in other content areas. Furthermore, longitudinal research is also recommended to track teacher perceptions and classroom impact.

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