

**Increasing Agricultural Literacy in Social Studies Teachers through Transformative
Travel Experiences**

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Introduction/Need for Innovation

A report from the Association for Career and Technical Education summarizes research on middle school students and pinpoints middle school as the stage at which young people can “benefit the most from career exploration” including developing self-awareness, gaining knowledge of careers, and forming plans to reach their career goals (2018, p.1). Unfortunately, in South Carolina, only 5% (13 of 248) public middle schools provide agricultural education (Teacher Directory, n.d.; 2019-20 Public School List, 2020), despite the fact that middle school agricultural education programs continue their substantial growth across the country (Odubanjo, 2018). One avenue to introduce careers in food and agricultural sciences (FAS) to middle school students is the state’s middle school social studies curriculum which addresses agriculture in respect to the state’s history. Furthermore, social studies is mandatory for the state’s 8th graders; thus, engaging middle school social studies teachers has the potential to influence all students at a developmentally appropriate time for career planning.

To address the need to expose middle school students to FAS careers, Clemson University and NC State University researchers created a professional development program for middle school social studies teachers known as Studies in Occupations, Culture, and Innovations toward Agricultural Literacy (SOCIAL). Middle school teachers selected for the program, known as SOCIAL Studies Fellows, are engaged in a graduate course focused on the inquiry design method and coaching for integrating the food and agricultural sciences into their social studies curriculum. The focal point of the program is the SOCIAL Studies Academy, a summer tour of six Clemson University Research and Education Centers to observe contemporary agricultural production, research, and develop knowledge of FAS careers. The ultimate goal is to strengthen the agricultural workforce by exposing middle school students to diverse FAS careers.

Methodology

An invitation to apply to the SOCIAL Studies Fellows’ program was sent to all middle school teachers and principals in South Carolina. The application asked teachers about their motivations, experiences, and plans relative to the inquiry design method, mentoring other teachers, and integrating FAS into their social studies curriculum. Of the 42 applicants, 13 SOCIAL Studies Fellows were selected in 2022, consistent with the program budget. The SOCIAL Studies Academy was designed to highlight FAS careers and issues inclusive of small farms; economics, markets, and trade; technologies; environmental and natural resource economics; and rural economic development. The SOCIAL Studies Academy involved a 6-day, 5-night tour. Each day included a tour of a different Clemson University Research and Education Center and presentations by agricultural faculty about their work, career experiences, and career requirements.

The SOCIAL Studies Academy evaluation focused on two questions: (1) To what extent, if at all, did the SOCIAL Studies Academy influence Fellows' perceptions of agricultural careers? (2) To what extent, if at all, did the SOCIAL Studies Academy influence Fellows' intentions for integrating agriculture into the middle school social studies curriculum? To address these research questions, Fellows completed two questionnaires. The first questionnaire was the

Perceptions of Agricultural Careers with 27 items measuring perceptions of agricultural careers and occupational requirements. This scale was originally designed for high school agriculture students (Talbert & Larke, 1995). The scale used was 1 (*Strongly Disagree*), 2 (*Disagree*), 3 (*Neither Agree nor Disagree*), 4 (*Agree*), 5 (*Strongly Agree*). A sample question is, "Most jobs in agriculture are minimum wage jobs." A second questionnaire, SOCIAL Studies Academy Evaluation, was designed by the researchers to measure intention to implement instructional practices for including agriculture into their social studies curriculum. This was a post-then-pre questionnaire, based on work by Willems (2010) wherein participants evaluated their practices after the program (post) and before the program (pre). The items used a 5-point scale: 1 (*Very Little*), 2 (*Little*), 3 (*Some*), 4 (*Much*), 5 (*Very Much*). The data was collected online using the Qualtrics Research Suite, and the questionnaires were administered using the Tailored Design Method (Dillman, et al., 2009). The population consisted of the 13 Fellows. The perceptions questionnaire was administered as a pretest before the SOCIAL Studies Academy and a post-test one week after the SOCIAL Studies Academy. Of the 13 Fellows, 13 completed the pre-test and 12 completed the post test for a 100% and 92% response rate respectively. The SOCIAL Studies Academy Evaluation was completed by the 13 Fellows (100% response rate). Data analysis used frequencies and percentages to compare pretest and posttest responses.

Results to Date/Implications

In regards to the fellows' perceptions of agricultural careers, the percentage who agreed or strongly agreed that: (a) "I am capable of getting a good job in agriculture" increased by 61.5% from pretest to posttest; (b) "Many agricultural leaders have college degrees" increased by 37.9% from pretest to posttest; and (c) "It takes special training to work in agriculture" increased by 30.8% from pretest to posttest. Fellows had an average 12.1% increase in agreement from pretest to posttest for the 27 items. From "before this program" to "now" the percentage of Fellows reporting "much" or "very much" in regards to FAS-related instructional practices increased an average of 74%. Specifically, the percentage of Fellows who intend to: (a) Encourage students to pursue FAS careers increased by 90.9%; and (b) Provide students with FAS career resources increased by 100%.

Future Plans

The evaluation demonstrates a clear increase in Fellows' understanding of agricultural topics and intent to implement specific FAS career development in their curricula. While this was a small study, results support transformative travel (see Soulard et al., 2020) as a viable option for teachers' professional development toward agricultural literacy. The results contribute to the literature on weeklong summer tours which have shown increased agricultural literacy among K-12 teachers (Balschweid et al., 1997). Additional research, namely interviews and observations, will be used to determine effectiveness of the SOCIAL Studies Academy and the extent to which Fellows work to amplify agricultural careers among their middle school students. We recommend offering the Fellows CEUs or graduate credit as a participation incentive.

Costs/Resources Needed

Funding is provided by the USDA National Institute of Food and Agriculture's Education and Workforce Development program, part of the Agriculture and Food Research Initiative (Award Number 2021-67037-34301). The SOCIAL Studies Academy utilizes \$1,821 in funding per teacher for lodging, travel, food, and instructional materials.

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