

**Reflections on Data Collection Methods in Elementary Agriculture
Education: Do large cash incentives matter?**

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Introduction

The inauguration of the pilot Elementary Agriculture Education (EAE) program in Georgia marks an exciting time for educational research. As the first formalized elementary agricultural education program in the country, there is a cadre of research topics to be explored. This is particularly relevant given that the National Research Council (2012) has promoted agricultural literacy as a means of connecting knowledge, skills, and attitudes/beliefs (KSABs) in science education (Vallera & Bodzin, 2016), highlighting the value of EAE for elementary students. With teachers playing a vital role in shaping how EAE is integrated into classrooms, their perceptions and beliefs toward agricultural education are of utmost importance. However, there are no existing organizations to encourage these pioneer teachers to collaborate and participate in research and training. In this study, we aim to investigate two data collection methods to determine teachers' participation in research and training aimed at improving their competencies in EAE. Through this research, we hope to pave the way for future initiatives and collaborations that will help elevate EAE literacy in the state and beyond.

How it works

This research was a combination of two different studies focused on EAE. For the first study, the Georgia Agricultural Education Teacher directory and EAE teacher contact information compiled by a professor of agricultural education at University of Georgia served as the population frame. Convenience sampling was used to select teachers who met the criteria for accessibility, proximity, availability and teachers' willingness to participate for the purpose of the study (Dörnyei, 2007). At the time of this study, there were 30 EAE teachers in Georgia. A recruitment email was sent that included information about the research and data collection methods to be used, time and place of data collection, responsibilities as a respondent (online questionnaire and in-person participation) and a \$350 gift card honorarium to compensate for their time. In order to reach a reliable consensus among the subset of teacher (called, "panel members" for this study), the Delphi method, which included three rounds of data collection, was used (Sourani & Sohail, 2015). In the first round, participants were asked to answer open-ended and some demographics questions via an online instrument (Qualtrics). The second and third rounds were conducted in-person and lasted 180 minutes each. For the second round, the summarized list of answers from round one was shared via Qualtrics. The panel was asked to rate each statement using a 7-point Likert scale which, according to Taherdoost (2019), tends to reflect respondent's true subjective assessment of a usability questionnaire. Statements that received an average rating of five and above were moved to the third round. Finally, the third round was reached through panel discussions to arrive at group consensus. In a study by Vernon (2009), a 70-percent agreement among panel members was considered the standard and was met in this study.

For the second study, purposive sampling was used to select respondents who would provide adequate and useful information (Kelly, 2010). Thirty teachers were initially contacted by email and asked to complete an online pre-questionnaire to select a day for synchronous online data collection. Dillman et al. (2019) recommends providing two communication modes

sequentially. After the initial invitation, email was used as the first mode and non-responders were later asked via SMS as the second mode. Included in these correspondents were links to the questionnaires, date and time of the meeting, and a \$350 gift card honorarium to increase interest in participation (Millar & Dillman, 2011). A synchronous online focus group conducted via Zoom was used to generate information on collective views, meanings behind those views and interaction between participants and lasted for 180 minutes. A qualitative thematic analysis using MAXQDA 2022 (VERBI Software, 2021) was used to organize and manage the qualitative data.

Results to Date

For the first study, fifteen out of 30 EAE teachers answered the first round of the Delphi. Six teachers participated in the in-person second and third rounds of the Delphi. At the end of the three Delphi rounds, there was a 40% turnover and 20% participation of EAE teachers. In the second study, a total of 13 teachers responded to the survey request representing 43% of the EAE population in Georgia. Five of these confirmed after the first mode of reminder via email and six teachers confirmed after the second mode of reminder via SMS. A total of 11 teachers participated in the focus group representing 37% of all EAE teachers in Georgia. Three themes emerged from the qualitative thematic analysis from both studies where teachers were asked about preferred data collection methods: *synchronous online meetings, building interpersonal relationships through constant communication, and sending RSVP to the preliminary survey* were noted as important elements for data collection in the eyes of EAE teachers.

Future Plans

The results of our research have successfully validated a methodology to improve response outcomes for EAE teachers. Our study challenges the commonly held belief that cash incentives alone are sufficient to increase participation, highlighting the importance of building personal relationships with participants by sending out a pre-survey to choose a data collection date. This method is supported by Dillman et al. (2019) and can enhance the overall quality of the research data. The COVID-19 pandemic has necessitated a shift from in-person data collection to synchronous online experiences, a transition that has proved beneficial in the EAE context. Our study also found that using a sequence of communication modes, such as email and follow-text messages, significantly increased the overall response rate. To further enhance recruitment methods and survey responses for EAE teachers, we recommend exploring the use of social media groups to foster collaboration and engagement in future research and workshops. These groups can be used to maintain ongoing relationships with potential research subjects, allowing for better engagement and feedback. Overall, our research highlights the importance of personal relationships and diverse communication methods in improving survey response rates. Future studies should continue to explore effective recruitment approaches and innovative methods to enhance survey response rates in this context.

Costs

Participants in two studies received \$350 gift cards from grant funds as incentives, which can support new research and benefit teacher professional development.

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