

A Content Analysis of the Research Published in the *Journal of Agricultural Education*

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Introduction

The research published in agricultural education has often times been criticized for the lack of rigorous qualities when compared to other disciplines. (Buriak & Shinn, 1989; Dyer, Hasse-Wittler, & Washburn, 2003; and Furhman & Ladewig, 2008). Buriak and Shinn (1989) suggested that authors should use more rigorous research techniques. Swafford & Anderson (2007) suggested that researchers should continue to improve on the quality of scholarly research being published. Dyer, et al (2003) indicated that researchers failed to compare research findings to the framework that guided their studies, therefore, the need for improved research methods still existed. Furthermore, Anderson and Swafford (2007) suggested researchers should model the sound research methods and procedures used in agricultural education as a baseline for future research to ensure rigorous and scholarly research is being disseminated. In support of this, Johnson & Shoulders (2015) suggested that the reviewers could maximize the likelihood of getting accepted for the National Agricultural Education Research Conference by focusing their efforts on ensuring they conduct methodologically sound studies.

Conceptual Framework

Conceptually, Furhman & Ladewig (2008) suggested that that the image of agricultural education research needs to improve. To improve the image, from a methodological standpoint, researchers should follow a specific path during the measurement, analysis, and reporting phases (Miller, 2006). Authors should consider the significance of the research methods and statistics being utilized in our research. The purpose of the study was to determine the type of articles and methodology used to collect data in the articles published in the *Journal of Agricultural Education*. To guide the study, following objectives were developed, 1) classify the articles published in the *Journal of Agricultural Education* by type – qualitative, quantitative, or mixed methods; 2) identify the data collection methods outlined in the articles published in the *Journal of Agricultural Education*. This study aligns to Priority area #3, by aligning with the key outcome to supply well-prepared agricultural scientists and professionals in academic settings. (Doerfert, 2011).

Methods

All articles (N=528), excluding distinguished lectures (N=10), published in the *Journal of Agricultural Education* during the years 2006-2015 were analyzed using content analysis techniques. To address the research objectives, a researcher developed rubric, guided by Furhman and Ladewig (2008), articles were analyzed and categorized based upon type of research conducted (Objective 1), qualitative, quantitative, or mixed-methods (as noted by the author), and the methodology used to collect data (Objective 2). Each article was read and analyzed by three researchers and data were entered into the data collection instrument. Results generated by the researchers were compared to determine discrepancies between the researchers. Upon comparison, no discrepancies existed.

Findings

Of the 528 research articles published in the *Journal* since 2006, 62.1% ($n=328$) could be categorized as exclusively quantitative in nature. These included studies using either descriptive or inferential statistics. Studies that could be classified as strictly qualitative comprised 27.5% ($n=145$) of the published articles, while mixed-method studies made up remaining 10.4% ($n=55$) articles.

Research objective 2 was to describe the method used to collect data within the primary research category. The most common methods to collect quantitative study data were surveys (mail, online, face-to-face, mixed-mode) (78%) and experiments/quasi-experiments (15%). The primary methods qualitative studies were categorized as content analysis, face-to-face survey, and focus group, historical, philosophical, synthesis of literature, instrument development, interview, observation, survey (online/mail/phone), and mixed mode. Interviews (37.9%), case studies (15.8%), and syntheses of literature (14.5%) made up a majority (68.2%) of the methods used to collect data using this format. Delphi/modified delphi (41.8%) were the most common method to collect data in studies categorized as mixed-methods.

Conclusions, Implications, and Recommendations

Most of the research reported in the *Journal of Agricultural Education* over the past decade can best be categorized as quantitative. Of the 528 articles reviewed, over 62% were classified as quantitative. Dyer, Haase-Wittler, & Washburn (2003) noted quantitative studies comprised over 83% of the studies published in the *Journal* between 1990-1999. However, this does not mean the frequency of quantitative studies is decreasing. In fact, the frequency of quantitative studies actually increased by nearly 50 studies, when compared to the 1990s. One must note, the total number of studies published between 2006-2015 increased by over 50%, when compared to the findings of Dyer, Haase-Wittler, and Washburn. Additionally, the presence of qualitative and mixed-method studies have increased and have become more common than not. Comparatively, the percentage of qualitative and mixed-method research studies published more than doubled between 2006-2015 and 1990-1999. It appears agricultural education researchers have begun to explore the benefits of the rich data that comes from qualitative or mixed-method research. Are these studies being used to establish theory or baseline data from which quantitative research methods stem? This is a question that should be asked and drive further inquiry into research methodology.

When classified by method, not including Delphi, nearly 53% of the studies ($n=279$) incorporated a survey. This finding is similar to the percentage of studies from 1990-1999 (Dyer, Haase-Wittler, & Washburn, 2003). Throughout these two studies, it has been established that research involving the use of surveys is still a mainstay in agricultural education research. Through the use of web-based survey platforms, survey-based research can be conducted in a shorter research window than ever before. However, care must be taken, despite the platform employed, that survey research adheres to the methods and procedures established to ensure the validity of the collected data. Thus, suggesting the recommendations of Albers, Floyd, Fuhrmann, & Martinez (2011) to follow the appropriate research design and correct analysis still exists.

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