Changes in Induction-Year Teachers' Self-Efficacy over the Fall Semester

Dr. Jessica M. Toombs
Dr. Robert Terry, Jr.
Dr. Jon W. Ramsey
Dr. J. Shane Robinson
Dr. Toni A. Ivey

Oklahoma State University
458 Agricultural Hall
Stillwater, OK 74078
(816) 294-6572
jessica.toombs@okstate.edu

Introduction and Theoretical Framework

Approximately 50% of novice teachers leave the profession in the first five years, contributing to a pervasive teacher shortage (Gracía & Weiss, 2019). School-based agricultural education (SBAE) is not immune to these struggles (Eck & Edwards, 2019). Teacher self-efficacy, defined as the self-reverent belief in one's ability to be successful, may provide an insight into the exodus of novice teachers from the profession (Pajares, 1992). Teachers with high self-efficacy are more likely to report higher job satisfaction, less professional stress, and are more likely to be retained in the profession (Kasalak & Dagyar, 2020), thereby decreasing the teacher shortage (McKim & Velez, 2016). Conversely, teachers with lower self-efficacy are more likely to experience greater professional stress and prematurely leave the profession (Kasalak & Dagyar, 2020). By assessing novice teacher self-efficacy, administrators, teacher educators, and state SBAE staff may be able to track self-referent beliefs of novice teachers and provide necessary support needed to retain novice SBAE teachers.

This study was framed in Bandura's (1997) theory of self-efficacy. Bandura (1997) identified four sources of self-efficacy: mastery experiences, physiological and affective state, vicarious experiences, and verbal persuasion. These sources work together to determine an individual's belief in their ability to be successful and remains pliable throughout the novice years of a teacher's career (Bandura, 1997; Pajares, 1992). The induction-year has shown great fluctuations in teacher self-efficacy (Katz, 1972). The purpose and research objective of this study was to assess changes in teacher self-efficacy of induction-year SBAE teachers in Oklahoma throughout the Fall 2020 semester.

Methodology

Two preexisting instruments were combined to collect data. Rubenstein et al. (2014) provided the SAE construct which was added to Wolf's (2011) items related to instruction and FFA. Each construct consisted of 20 items on a 9-point Likert-type scale. Post-hoc reliability resulted in a Cronbach's alpha of at least 0.86 for each construct, indicating a reliable instrument (Warmbrood, 2014). This instrument was distributed via email twice during the Fall 2020 semester, once in August and again in December. Emails for Oklahoma SBAE induction-year teachers ($N = 29$) were obtained from the state SBAE staff. A total of 19 induction-year SBAE teachers completed both instruments for a response rate of 65.52%. Non-response bias testing revealed no significant differences between early and late responses (Lindner et al., 2001). Once data were collected, a total program teacher self-efficacy score was calculated by averaging an individual's responses to each item.

Findings

The total program self-efficacy of these 2020-2021 induction-year SBAE teachers began with a mean of 7.04 ($SD = 0.90$) and stayed stable with a final total program teacher self-efficacy mean of 6.98 ($SD = 0.97$). A breakdown of individual teacher self-efficacy scores are displayed in Table 1. The average change in teacher self-efficacy was -0.06 points ($SD = 0.80$) from initial to final data collection. Nine induction-year SBAE teachers reported a small gain in self-efficacy over the first semester. Ten participants fell in their perceived ability to be successful. Two of these induction-year teachers reported a drop in teacher self-efficacy of at least one point.

Table 1

Changes in Teacher Self-Efficacy (TSE) over the Fall Semester

Participant	Initial TSE	Final TSE	Difference
1	7.65	8.49	0.84
2	6.90	7.65	0.75
3	7.07	7.78	0.71
4	6.57	7.23	0.66
5	5.15	5.75	0.60
6	6.73	7.18	0.45
7	6.97	7.26	0.29
8	7.85	8.07	0.22
9	5.70	5.89	0.19
10	8.10	8.08	-0.02
11	6.75	6.70	-0.05
12	6.85	6.77	-0.08
13	8.50	8.33	-0.17
14	6.85	6.60	-0.25
15	5.87	5.62	-0.25
16	6.62	6.20	-0.42
17	8.42	7.60	-0.82
18	7.15	5.50	-1.65
19	8.10	5.87	-2.23
Mean (SD)	7.04 (0.90)	6.98 (0.97)	-0.06 (0.80)

Conclusions, Implications, and Recommendations

These induction-year teachers began their teaching careers with high teacher self-efficacy. Bandura (1997) found a sense of self-efficacy to be a prerequisite to beginning a new career. This sense of ability may translate into a perseverance through professional challenges associated with the induction-year (Pajares, 1992). Of special note are the two participants, 18 and 19, who self-reported a sharp drop in their teacher self-efficacy. This may be a concerning trend for these individuals, especially given the connection between teacher self-efficacy and student outcomes (Klassen and Tze, 2014). Interventions such as mentoring, collaboration, administrative support, and professional development may serve to bolster the self-efficacy (Smith & Ingersoll, 2004) of Participants 5, 9, and 15 who reported a teacher self-efficacy lower than six during initial and final data collections.

It should be noted this study communicates the self-perceived ability of success from induction-year teachers, not necessarily their performance as SBAE teachers. McDonald (2008) questioned the ability of neophyte professionals to report their ability or lack thereof in new tasks. Scales et al. (2009) noted an overconfidence in SBAE teachers in their ability to teach scientific curriculum. These induction-year teachers may be following a similar pattern. Additional data in the form of teacher observations would serve to provide context and an evaluation of ability. Qualitative data would better explore the changes in teacher self-efficacy over the novice years.

References

Bandura, A. (1997). *Self-efficacy: The exercise of control.* W. H. Freeman and Company.

Eck, C. J., & Edwards, M. E. (2019). Teacher shortage in school-based, agricultural education (SBAE): A historical review. *Journal of Agricultural Education, 60*(4), 223-239. https://doi.org/10.5032/jae.2019.04223

García, E., & Weiss, E. (2019). The teacher shortage is real, large and growing, and worse than we thought. *Economic Policy Institute. https://www.epi.org/publication/the-teacher-shortage-is-real-large-and-growing-and-worse-than-we-thought-the-first-report-in-the-perfect-storm-in-the-teacher-labor-market-series/*

Kasalak, G., & Dagyar, M. (2020). The relationship between teacher self-efficacy and teacher job satisfaction: A meta-analysis of the teaching and learning international survey (TALIS). *Educational sciences: Theory & practice*, *20*(3), 16-33. https://doi.org/10.12738/jestp.2020.3.002

Katz, L. G. (1972). Developmental stages of preschool teachers. (OEC-0-70-2623). Washington, DC: National Center for Educational Communication. (ERIC Document Reproduction Service No. ED057922).

Klassen, R. M., & Tze, V. M. C. (2014). Teachers' self-efficacy, personality, and teaching effectiveness: A meta-analysis. *Educational Research Review, 12*, 59-76. https://doi.org/10.1016/j.edurev.2014.06001

Linder, J. R., Murphy, T. H., & Briers, G. E. (2001). Handling nonresponse in social science research. *Journal of Agricultural Education, 42*(4), 43-53. https://doi.org/10.5032/jae.2001.04043

McDonald, J. D. (2008). Measuring personality constructs: The advantages and disadvantages of self-reports, informant reports and behavioral assessments. *Enquire, 1*(1), 75-94. https://pdfs.semanticscholar.org/82c2/aed17ce5d671e323b2f7f6bdce70f22b0490.pdf

McKim, A. J., & Velez, J. J. (2016). An evaluation of the self-efficacy theory in agricultural education. *Journal of Agricultural Education, 57*(1), 73-90. https://doi.org/10.5032/jae.2016.01073

Pajares, M. F. (1992). Teachers' beliefs and educational research: Cleaning up a messy construct. *Review of Educational Research, 62*(3), 307-332. https://doi.org/10.3102/00346543062003307

Rubenstein, E. D., Thoron, A. C., & Estepp, C. M. (2014). Perceived self-efficacy of preservice agriculture teachers toward specific SAE competencies. *Journal of Agricultural Education, 55*(4), 72-84. https://doi.org/10.5032/jae.2014.04072

Scales, J., Terry, R. Jr., & Torres, R. M. (2009). Are teachers ready to integrate science concepts into secondary agriculture programs? *Journal of Agricultural Education, 50*(2), 100-111. https://doi.org/10.5032/jae.2009.02100

Smith, T. M., & Ingersoll, R. (2004). What are the effects of induction and mentoring on beginning teacher turnover? *American Educational Research Journal, 41*(3), 681-714. https://doi.org/10.3102/00028312041003681

Warmbrod, J. R. (2014). Reporting and interpreting scores derived from Likert-type scales. *Journal of Agricultural Education, 55*(5), 30-47. http://doi.org/10.5032/jae.2014.05030

Wolf, K. J. (2011). Agricultural education perceived teacher self-efficacy: A descriptive study of beginning agricultural education teachers. *Journal of Agricultural Education, 52*(2), 163-176. https://doi.org/10.5032/jae.2011.02163