Instructional Practice Needs of Oklahoma SBAE Teachers Based on Certification Type

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Introduction & Purpose

For decades, a persistent national teacher shortage has impacted every aspect of the education system (Bowling & Ball, 2018; Coleman et al, 2020; Harris, 2023; Wilkin & Nwoke, 2011). As a result, many individuals are entering the profession through alternative certification pathways. Researchers who have compared outcomes of teachers with and without formal preparation have resulted in higher ratings and greater student learning gains for teachers with formal preparation (Darling-Hammond, 2000). The teacher shortage and utilization of other teacher preparation programs has been a major cause of the diverse needs of alternatively certified teachers and traditionally certified teachers (Bowling & Ball, 2018; Coleman et al., 2020; Darling-Hammond, 2000; Wilkin & Nwoke, 2011). The purpose behind this study was to identify the instructional practice needs of Oklahoma school-based agricultural education (SBAE) teachers based on their certification type.

Theoretical Framework

This study was framed with the theory of human capital (Becker, 1964; Machlup, 1982) and the teacher human capital theory (Myung et al., 2013). Human capital is often applied to education as it is considered one of the major forms of investment regarding human resources (Machlup, 1982). Education elevates individual intellect which overall can improve the individual's quality of life along with the production of useful skills (Machlup, 1982). Myung et al. (2013) provided a framework based on the original human capital theory, in which the aim of the framework is to have a stronger teacher workforce. This is accomplished through building educators' capacity and expertise to provide and facilitate enhanced and meaningful educational experiences to their learners. There are three direct subsystems which aim to reach the wholistic goal of a stronger teacher workforce and effective teacher human capital: acquire, develop, and sustain with a fourth subsystem being: evaluate (Myung et al., 2013).

Methodology

This study was part of a larger research project (Rankin et al., 2023). This non-experimental survey research study included a population of all Oklahoma SBAE teachers ($N = 462$). Hand-written questionnaires were collected at in-person FFA events. The questionnaire was returned by 338 participants, resulting in a 73.2% response rate. Incomplete survey questionnaires were excluded, resulting in 327 completed instruments for data analysis. The questionnaire was developed by Roberts and Dyer (2004) and modified for this study. A panel of experts, including faculty, state FFA representatives, and former SBAE teachers, reviewed the instrument for face and content validity. Each of the questionnaire items used two 5-point Likert-type scales (1 = low agreement, 5 = high agreement). On the first scale, participants were asked to rate their current knowledge level of the item (perceived ability). On the second scale, participants were asked to rate the degree of relevance the item had to their job (perceived importance). Data were analyzed using SPSS version 28 and Microsoft Excel©. This study implemented the ranked discrepancy model (RDM) procedure (Narine & Harder, 2021). This analysis considers positive ranks (PR), negative ranks (NR), and tied ranks (TR) to understand the needs of the participants in the form of a ranked discrepancy score (RDS) for each item (Narine & Harder, 2021).

Findings

The individual instructional needs for the teachers involved in the study were assessed in two separate groups: traditionally certified ($n = 266$) and alternatively certified ($n = 61$). Rank

discrepancy scores (RDS) were calculated for each of the 24 items. Table 1 shows the top six and bottom three ranked items for each of the two groups.

Table 1
Top and Bottom Ranked Instructional Practice Needs of Traditionally and Alternatively Certified Oklahoma SBAE Teachers

	Traditionally Certified (n = 266)		Alternatively Certified (n = 61)	
Rank	Item	RDS	Item	RDS
1	Motivating students for classroom teaching	-22.93	Teaching for different learning styles	-32.79
2	Modifying instruction for students with special needs	-22.56	Identifying resources for curricula	-31.15
3	Determining content to be taught in specific courses	-20.68	Modifying instruction for students with special needs	-29.51
4	Teaching for different learning styles	-20.30	Motivating students for classroom teaching	-27.87
5	Highlighting engineering in agricultural education courses	-19.55	Teaching decision-making skills	-26.23
6	Managing student behavior	-17.67	Highlighting engineering in agricultural education courses	-24.59
22	Highlighting science in agricultural education courses	0.75	Teaching problem-solving skills	-9.84
23	Sequencing units of instruction	3.76	Using experiments in teaching	-9.84
24	Developing lesson plans	19.17	Highlighting science in agricultural education courses	-4.92

Conclusions & Recommendations

All 24 items resulted in a negative RDS for alternatively teachers, which indicates a need for further development. There were only three items in the study with a positive RDS, all of which were ranked by the traditionally certified teachers. Further, the items ranked by alternatively certified teachers had lower discrepancy scores than those ranked by traditional certified teachers. This indicates that alternatively certified educators have greater perceived developmental needs in the area of instructional practice than traditionally certified teachers. When comparing the items between groups, four of the six items within the top ranked needs are shared between the two groups: *motivating students for classroom teaching, modifying instruction for students with special needs, teaching for different learning styles,* and *highlighting engineering in agricultural education courses.* In the lower three ranked items, there is one shared item: *highlighting science in agricultural education courses. Modifying instruction for students with special needs* is ranked as the high area of need between the groups, which aligns with Coleman et al. (2020). Professional development opportunities should be aligned with the highest ranked items. Future research could examine the two groups' needs within the program management and planning (i.e., FFA, SAE) of an SBAE program. Replication of this study could be conducted across states to compare professional development needs.

References

Rankin III, K. R. L., Eck, C. J., Coleman, B. M., Marsh, K. N., & Smith, N. A. (2023, September 18-20). *The needs of Oklahoma school-based agricultural education teachers related to teaching agriculture, food and natural resources topics* [Paper Presentation]. American Association for Agricultural Education (AAAE) Western Research Conference, Logan, UT.

Becker, G. S. (1964). *Human capital: A theoretical and empirical analysis, with special reference to education*. National Bureau of Economic Research.

Bowling, A. M., & Ball, A. L. (2018). Alternative certification: A solution or an alternative problem? *Journal of Agricultural Education, 59*(2), 109–122. https://doi.org/10.5032/jae.2018.02109

Coleman, B. M., Bunch, J. C., & Thoron, A. C. (2020). Identifying agriscience teachers' instructional practice professional development needs by certification type. *Journal of Agricultural Education, 61*(3), 86–100. https://doi.org/10.5032/jae.2020.03086

Darling-Hammond, L. (2000). Teacher quality and student achievement. *Education Policy Analysis Archives*, *8*(1), 1–44. https://doi.org/10.14507/epaa.v8n1.2000

Gillies, D. (2015). Human capital theory in education. In: Peters, M. (ed.) *Encyclopedia of educational philosophy and theory*. Springer.

https://doi.org/10.1007/978-981-287-532-7_254-1

Harris, W. by S. (n.d.). 10 states with massive teacher shortages (February 2023). https://www.universities.com/education/states-with-the-highest-teacher-shortages

Machlup, F. (1982). Issues in the theory of human capital: Education as investment. *The Pakistan Development Review, 21*(1), 1–17. http://www.jstor.org/stable/41239020

Myung, J., Martinez, K., & Nordstrum, L. (2013). *A human capital framework for a stronger teacher workforce* (pp. 1–44, Rep.). Carnegie Foundation for the Advancement of Teaching.

Narine, L. K., & Harder, A. (2021). Comparing the Borich model with the ranked discrepancy model for competency assessment: A novel approach. *Advancements in Agricultural Development, 2*(3), 96–111. https://doi.org/10.37433/aad.v2i3.169

Roberts, T. G., & Dyer, J. E. (2004). Inservice needs of traditionally and alternatively certified agriculture teachers. *Journal of Agricultural Education, 45*(4), 57–70. https://doi.org/10.5032/jae.2004.04057

Wilkin, T., & Nwoke, G. I. (2011). Career and technical education teacher shortage: A successful model for recruitment and retention. *Education Resources Information Center, 48*(1), 22–35. http://ir.library.illinoisstate.edu/jste/vol48/iss1/6