

Establishing Instrument Validity for the Professional Identity Scale in Agricultural Educators: A Focus on the Agriculturalist's Professional Identity

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Introduction/Conceptual Framework

School-based agricultural education (SBAE) teachers have a long history of involvement in the professions of both agricultural production and education, creating unique professional identities within this population (Shoulders & Myers, 2011). While assessing the professional identities of general educators and other professionals has been the focus of research efforts for decades (Darling-Hammond & Bransford, 2005), the professional identities of SBAE teachers was identified as a gap in the knowledge base in recent years (Shoulders & Myers, 2011). While much can be learned from the research practices of professional identity studies in other professions (including general education), the unique identities and experiences of SBAE teachers may require adaptation for some of the previously used methods and instruments in order to accurately collect valid data among this population. Shoulders (2018) adapted Woo's (2013) Professional Identity Scale in Counseling (PISC) to assess the professional identities of SBAE teachers in three areas: the profession of agriculture, the profession of education, and the profession of agricultural education. This study responds to Shoulders' (2018) recommendation for researchers to "utilize appropriate parts of the PISAE to examine the professional identities of...agriculturalists to ensure the instrument is valid in portraying the identities of professionals in [this field]" (p. 288).

Validity is the degree with which an instrument measure constructs that it is supposed to measure (Huck, 2008). Instrument validity is a result of a specific location and subjects; "a test may be valid for use with one population or setting but not with another. Validity does not travel with the instrument" (Ary et al., 2010, p. 225). The PISAE was deemed to be valid for previous studies with SBAE teachers but has not been used with agriculturalists (Shoulders, 2018). Construct validity, which establishes an instrument's ability to accurately measure the degree to which a respondent possesses a particular psychological construct, can be established via convergent or divergent validity (Huck, 2008). Strong relationships between the scores of similar groups establish convergent validity, while weak relationships between the scores of dissimilar groups establish divergent validity. This research addresses the National Research Agenda's Research Priority 5: Efficient and Effective Agricultural Education Programs, as improvement of these programs relies on the collection of valid data from which to make inferences and recommendations (Roberts, Harder, & Brashears, 2016).

Methods

The purpose of this study was to assess the construct validity of the agriculturalist identity within the PISAE. Objectives were as follows: 1) describe the agriculturalist-focused professional identities of [State] agricultural producers and SBAE teachers; and 2) determine the difference in the agriculturalist-focused professional identities of these two groups.

The PISAE included the same constructs and items as the initial PISC: *Knowledge of the Profession* (11 items), *Philosophy of the Profession* (seven items), *Professional Roles and Expertise* (nine items), *Attitude toward the Profession* (nine items), *Engagement Behaviors* (14 items), and *Interaction within the Profession* (four items). Each item asked respondents to indicate their level of agreement to a statement on a 5-point Likert-type scale. The questionnaire was sent to all [State] Agriculture Extension agents, who were asked to distribute it to their clients who were agriculture producers, and to all [State] SBAE teachers, who were asked to complete the questionnaire ($n = 227$). An initial invitation and three reminders were sent over a

month-long period. Thirteen agricultural producers and 45 SBAE teachers completed the questionnaire, all electronically. Reliability was established for the study *a priori*, and yielded acceptable Chronbach's alpha scores for all constructs (.804 - .960) with the exception of *Philosophy of the Profession* (.674). Due to the low response rate, we strongly caution readers from generalizing the findings and conclusions herein beyond the study's respondents. However, because construct validity can be established by providing evidence that "certain groups obtain higher mean scores on the new instrument than other groups" (Huck, 2008, p. 92), the findings herein can be utilized to meet the validity-focused purpose of this study.

Findings

Mean scores on each construct are displayed in Table 1. Overall professional identity scores are also displayed. Agricultural producers and SBAE teachers shared similar agriculturalist-focused professional identities on each of the constructs. Overall, SBAE teachers' mean professional identity index was slightly higher than that of agriculturalists.

Table 1.

Mean Scores on Each Professional Identity Construct for Agriculturalists and SBAE Teachers

	Agriculturalists		SBAE Teachers	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
Knowledge of the Profession	28.69	5.27	28.82	3.58
Philosophy of the Profession	16.31	2.14	16.56	2.22
Professional Roles and Expertise	25.85	3.34	25.38	2.79
Attitude toward the Profession	45.85	6.22	49.29	3.22
Engagement Behaviors	42.38	5.81	41.20	4.81
Interaction within the Profession	26.08	4.54	26.00	4.06
Professional Identity Index	185.15	23.66	187.24	15.87

Homogeneity of variances was present for all scores with the exception of the *attitude* construct ($p = .005$). There were no statistically significant differences between the agriculturalists and the SBAE teachers on any of the construct scores, or on the overall professional identity index.

Conclusions & Recommendations

While Shoulders (2018) found SBAE teachers identified more as agriculture teachers than they did as agriculturalists, the current study found that they identified as agriculturalists to the same degree as those whose profession actually was agricultural production. These findings imply that SBAE teachers may indeed identify as agriculturalists, but that perhaps the profession of agricultural production does not lend itself to a high professional identity as measured on the PISAE. This position is supported by the notion that the original PISC was developed under a framework including an operational definition of a profession being one that requires members to be "adaptive experts who are prepared for lifelong learning that allows them to continuously to add to their knowledge and skills (Darling-Hammond & Bransford, 2005, p. 3), while agricultural production has traditionally been labeled as a blue-collar career, focusing primarily on manual labor. We recommend researchers conduct qualitative studies with both SBAE teachers and agriculturalists to better understand how the instrument aligns with and does not align with their perceptions of their own professional identities as agriculturalists. Until the PISAE can be adapted, we caution researchers against using it to distinguish between agriculturalists and SBAE teachers in their agriculturalist-focused professional identities.

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