

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

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Introduction/Conceptual Framework

Efficient and effective agricultural education programs are essential for the growth of agricultural education, under the National Research Agenda's Research Priority 5 (Roberts, Harder, & Brashears, 2016). A teacher's professional identity, comprised of an individual's background characteristics, pre-established beliefs, values, and attitudes, can greatly shape the culture and practice within an educational setting, thereby influencing the efficiency and effectiveness of a program (Simonneaus, 2000; Shoulders, 2018). Through the use of an adapted version of Woo's (2013) Professional Identity Scale in Counseling, Shoulders (2018) confirmed the position of Shoulders and Myers (2011) that agriculture teachers subscribe to a professional identity different from that of other teachers. While the adapted instrument, titled the Professional Identity Scale in Agricultural Education (PISAE), was able to determine that agriculture teachers hold professional identities that align more so with agricultural education than general education, the instrument has not been validated with educators. Shoulders (2018) recommended, "researchers utilize appropriate parts of the PISAE to examine the professional identities of educators...to ensure the instrument is valid in portraying the identities of professionals in [this] field" (p. 287). The purpose of this study was to describe the discriminant validity of the educator identity constructs within the PISAE. Discriminant validity can be established by showing "that certain groups obtain higher mean scores on the new instrument than other groups, with the high- or low-scoring groups being determined on logical grounds *prior to* the administration of the new instrument (Huck, 2008, p. 92). Therefore, the following objectives were developed to meet this purpose: 1) describe the educator-focused professional identities of expert teachers and agriculture teachers; and 2) determine the difference in identities between the two groups of teachers.

Methods

The PISAE utilized the same constructs and items as the original 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). Items asked respondents to indicate their level of agreement or disagreement to a series of statements, each being rated on a five-point Likert-type scale. The questionnaire was sent to all [State] agriculture teachers ($n = 227$), and purposefully selected expert educators, operationally defined by the Presidential Awards for Excellence in Mathematics and Science Teaching award through the National Science Foundation ($n = 79$). This award is the highest honor for K-12 mathematics and science educators ("About the Awards", 2018). We purposefully identified award-winning teachers of core content disciplines as those who, according to professional identity theory, should reveal high educator-related professional identities. Responses were received from 46 agriculture teachers and 10 expert educators. Internal consistency was established *a priori* and resulted in the Cronbach's alpha scores between .657 and .906. These were comparable to the reliability scores found by Shoulders (2018). While the findings herein cannot be generalized beyond the respondents, they can be used to assess the discriminant validity of the educator-related constructs on the PISAE, thereby effectively meeting the purpose of this study.

Findings

Table 1 displays each group's mean scores on the constructs, as well as their mean educator-related professional identity index. Expert educators displayed higher mean scores than agriculture teachers in every construct. The educators' mean professional identity index was nearly 50 points higher than that of the agriculture teachers.

Table 1.
Mean Scores on Each Professional Identity Construct

	Agriculturalists		Agriculture Teachers	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
Knowledge of the Profession	36.90	3.70	28.26	4.23
Philosophy of the Profession	21.40	2.76	16.80	2.09
Professional Roles and Expertise	32.80	3.52	25.52	3.51
Attitude toward the Profession	53.90	9.35	45.78	4.98
Engagement Behaviors	53.70	6.80	37.98	6.63
Interaction within the Profession	35.60	3.31	24.85	5.30
Professional Identity Index	234.30	19.92	179.20	20.84

Homogeneity of variances was present for all constructs with the exception of the Attitude construct ($p = .005$). There were statistically significant differences between expert educators' mean scores and agriculture teachers' mean scores on every construct, as well as on the overall index (Table 2). Effect sizes indicated nonoverlap between the two groups' scores in every area, with the amount of nonoverlap ranging from 58.9% to over 80% (Cohen, 1988).

Table 2.
Tests of Statistical Significance for Each Professional Identity Construct

	<i>t</i>	<i>p</i>	Cohen's <i>d</i>
Knowledge of the Profession	5.97	.000	2.17
Philosophy of the Profession	5.94	.000	1.88
Professional Roles and Expertise	5.94	.000	2.07
Attitude toward the Profession	2.66	.023	1.08
Engagement Behaviors	6.77	.000	2.34
Interaction within the Profession	6.14	.000	2.43
Professional Identity Index	7.63	.000	2.70

Conclusions & Recommendations

Expert educators displayed higher educator-focused professional identities than agriculture teachers, suggesting the PISAE is valid in distinguishing between those with different professional identities as educators. These results support findings by Shoulders (2018), as the agriculture teachers in the previous study displayed significantly higher identities as agricultural educators than they did as educators, suggesting their identities did not align with those of other educators. Further, Shoulders and Myers (2012) posited agriculture teachers hold different professional identities from other teachers for a myriad of reasons stemming from their background and training. We support the notion that the PISAE is an adequate instrument to distinguish between those with greater and lesser educator-focused professional identities.

References

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