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Student Teachers' Professional Identity: Research in the Republic of Serbia

Abstract

Building professional identities of student teachers at the beginning of their vocational education and professional training provides opportunities to explore diversity of practice and provide external support. In the available literature, there is only a small number of studies that explore the professional identity of pre-service and student teachers. The main problem of this research is to examine self-reported attitudes toward student teachers' professional identity dimensions. The second aim of the presented study was examining the reliability and concurrent validity of the Student Teachers Professional Identity Scale (Fisherman & Abbot, 1998), which was used for the first time in Serbia. The initial sample of respondents consisted of 158 students from the Faculty of Pedagogical Sciences. Results indicate that university students perceive teaching roles more as a specific job and not as a profession. They are goal-directed towards their job as teachers and perceive their practice as a part of their studies and not as a result of their professional identity development as teachers. The mentioned scale (for one-factor solution with the satisfactory criterion of confirmatory factor analysis) obtained very good reliability ($α = .935$) and concurrent validity indicators and values. Researching professional identity at early career stages can help educators to emphasize the multidimensionality and complexity of the teaching profession.

Keywords: *student teacher, professional identity, factor analysis, concurrent validity*

Introduction

Teacher educators have been invited "to recreate the space for construction of an individual, meaningful, resilient professional identity underpinned by strong beliefs and values" (Smethem, 2007:478). Understanding the initial identity of student teachers can enable teacher mentors to prepare future teachers for a teaching career by facilitating the development of professional identity as in-service teachers.

The professional identity of future teachers has been investigated as a research variable most frequently as a control variable in teacher identity research (Volkmann and Anderson, 1998; Cheung, 2008; Pillen, 2013; Fisherman and Abbot, 1998; Fisherman and Weiss, 2008; *Živković*, 2012).

Bullough (1997) pointed to identity as a phenomenon critical to the practice of teacher education. According to him, "understanding the pupils' thinking of learning and teaching themselves as teachers is vital to educators of teachers, because it is the basis for making significance and making decisions" (p. 21). This represents a complex emotional challenge that not only affects teachers' professional life, but also their personal life (Meijer, Graaf and Meirink, 2011).

Hammerness, Darling-Hammond and Bransford (2005) have identified three common issues in the learning process for learning:

- Student teachers must understand and acknowledge their own biases about teaching based on their many years of experience as students in classroom settings.
- Students need to put theory into practice. This requires a deep understanding of theory and practice before students are trained. Practice is situational-specific, but theory is not.
- Student teachers must take control of their own learning to understand and move in the complexity of teaching.

Meijer et al. (2011) studied the way in which candidates view their own development after a year of teaching work, and what key experiences they help to develop. The authors found that the positive and/or negative experiences of the participants played a significant role in their development. They found that the teachers who had two or more "disillusionment phases" were struggling to devise their role in key experiences. The teachers perceive their development as a permanent upward line, but the data point to falls with internal transformational changes.

Lamote and Engles (2010) found shifts in student thinking after workplace experiences in their research on pre-service teachers' perceptions of their professional identity at different stages of their education.

Key factors that affect a pre-service teacher candidate's identity development were identified as the following (Lerseth, 2013:121):

- Pre-service teacher candidate's past experiences affect his/her identity development during student teaching.
- Teacher's views on classroom management impacts on identity development.
- Teacher's content area knowledge determines how he/she teaches.
- Teacher's pedagogy or teaching philosophy impacts his/her identity development.
- Teacher's involvement in or engagement with students affects development (dispositions).
- Pre-service teacher candidate's identity recognition is critical for identity development.
- Experiencing heightened tension helps shape teacher identity.
- Mentor/Supervisor experience and connections impact on the pre-service teacher candidate's identity development.

Method

The main problem of this research was to examine self-reported attitudes toward student teachers' professional identity dimensions. The second aim of the presented study was examining of the psychometric characteristics of the STPIS (Student Teachers Professional Identity Scale) (Fisherman and Abbot, 1998), used for the first time in Serbia.

It is expected that there is one plausible and interpretable teacher professional identity dimension that expresses student teachers professional identities characteristics according to the STPIS and research results.

The initial sample of respondents consisted of 158 students from the University of Kragujevac, Faculty of Pedagogical Sciences in Jagodina. The sample comprised 54.1% of the 2nd year teacher program students and 45.9% of those who were the 3rd year and master's postgraduate teacher program group. The study group consisted of 158 participants, 131 (83%) women and 27 (17%) men (M=1.83, SD=.375), 50 (32%) post-graduate and 108 (68%) under-graduate students (M=1.06, SD=.206). The test distribution for academic achievements is normal (Kolmogorov-Smirnov Z=1.999, p=0.001, M=2.46, SD=.706).

Student Teacher Professional Identity Scale (Fisherman and Abbot, 1998)(STPIS). This questionnaire examines students' attitudes towards being a teacher and how

much they identify with the role of the teacher. The questionnaire examines their confidence about their professional choice, their sense of self-actualization as teachers, and the extent to which they see their profession as a mission and as a challenge. The questionnaire consists of 12 items. The teachers were asked to what extent they agreed with the items on a five-point scale (ranging from 1: complete disagreement, to 5: complete agreement). The total scores ranged from 5 to 60 points. The alpha reliability in the previous study was $\alpha= .93$ (Fisherman and Abbot, 1993), and in the repeated it was $\alpha=.84$ (Fisherman and Weiss, 2006).

Rosenberg Self-Esteem Scale (RSES) (Rosenberg, 1965; Todorović, 2005). The RSES assesses the overall sense of being capable, feeling worthwhile, and competent. The internal consistency and factor validity of the Serbian version of the RSES were shown to be high (Todorović, 2005). It consists of 10 items, and the degree of self-esteem for each item is rated on a 7-point Likert scale (range: 10–77). The internal reliability of the presented study: Cronbach's alpha coefficient $\alpha =0.78$.

Maslach Teachers Burnout Inventory-Educators Survey (MBI-ES) (Maslach, 1986). This scale consists of 22 items. Generally speaking, in our sample of teachers, the instrument shows satisfactory metric characteristics (Živković and Grozdanović, 2015). Reliability was determined by Crombach's alpha coefficient. The internal reliability of the questionnaire is over 0.60 (Crombach's alpha coefficient $\alpha = .604$, with standardization value of $\alpha = .633$).

Warwick–Edinburgh Mental Well-Being Scale (WEMWBS) (Tennant, Hiller, Fishwick, Platt, Joseph, Weich, Parkinson, Secker and Stewart-Brown, 2007). The WEMWBS comprises 14 positively phrased items, which measure positive affect, psychological functioning and interpersonal relationships. Each item is scored (based on experience over the previous 2 weeks) on a 5-point Likert-style scale from 'none of the time' (1) to 'all of the time' (5). The overall score is the sum of each item score, giving a possible summary score of 14–70; higher scores indicate higher levels of mental well-being (Tennant et al., 2007). The calculated Cronbach's Alpha was $\alpha=.83$.

*Cheung Teacher Professional Identity Scale (*Cheung, 2008). Initial set consisted of 41 items. After determining the psychometric characteristics, the final scale included 18 items (on a 5-point Likert-style scale), which possessed good psychometric characteristics (Cronbach's Alpha $\alpha= 0.83$). In our study (Živković, 2013), the reliability calculated for 18 items reached $\alpha=0.87$.

Resilience Scale–RS14 (Wagnild & Young, 1993). In order to provide clinicians and researchers with a shorter instrument for reducing the burden on participants, a short version of RS (RS-14) (Vagnild, 2009) was developed. Cronbach's alpha of the RS-14 was reported to be excellent ($\alpha = .93$) and it correlates strongly ($r = .97$)

with the original RS (Wagnild, 2009a). In the presented study, Cronbach's Alpha was α=.84.

The survey was conducted anonymously and voluntarily in the Faculty of Education in Jagodina. The translation of the STPIS from English into Serbian was accomplished by a professional translator. The aim of the translation was not to achieve literal or syntactic equivalence, but to maintain the original denotation and connotation of items.

Cronbach's alpha coefficient, the test-retest correlation coefficient, and the correlations between the STPIS and other measures were established by calculating Pearson's correlation coefficients. Exploratory factor analysis (EFA), parallel analysis (PA) and confirmatory factor analysis (CFA) were conducted by using data at initial assessment. All the statistical analyses used two-tailed tests. For all statistical evaluations, p values under 0.05 were considered indicative of significant differences. The statistical analyses were conducted using the Statistical Package for the Social Sciences (SPSS) for Windows, version 17.0. For statistical analysis, p values lower than .05 were considered statistically significant. The normality of the total scores of STPIS was evaluated with the use of the Kolmogorov-Smirnov test of normality. Reliability and internal consistency (item-total item correlation) for STPIS were assessed using Cronbach's alpha coefficient. The correlations between STPIS and self-reported burnout stress, self-esteem, well-being, in-service teacher professional identity and resilience were calculated with the use of Pearson's correlation coefficient (one-tailed significance).

To evaluate and confirm the factor structures that were found in previous studies (Fisherman and Abbot, 1998; Fisherman and Weiss, 2008), a confirmatory factor analysis was made with the use of STATISTICA. The Goodness-of-Fit Index (GFI), the Adjusted Goodness-of-Fit Index (AGFI), the Comparative Fit Index (CFI), and the Root Mean Square Error of Approximation (RMSEA) were used to evaluate the fit of the models using the following criteria: GFI > .90, AGFI > .90, CFI > .95 and RMSEA < .06 (Kline, 2005).

Results

The calculated mean score for the STPIS was M=49.19 (SD=9.47). The overall Cronbach alpha coefficient of the STPIS, α=0.935, indicates good reliability. In the item-statistics analysis in Cronbach's Alpha, if items deleted section, there would be no items that had value over the obtained α=.935. KMO (.889) and Bartlett's test of sphericity (p=0.000) had satisfactory values. The Kolmogorov-Smirnov test

of normality Z=1.264 (p=.082). The test-retest correlation coefficient of the STPIS was 0.83, and that of the STPIS-5 was 0.84.

From the principal component extraction with varimax rotation, one factor emerged. The 12 items in the STPIS were entered into principal component analysis according to the previous study. All the items loaded onto the first component, and factor loadings were greater than 0.68. One-factor solution accounted for 59.83% of the total variance.

Table 1. Results of Exploratory Factor Analysis (EFA) – Component Matrix

Component Matrix	
	1
STPIS6	.870
STPIS10	.851
STPIS7	.820
STPIS9	.815
STPIS5	.804
STPIS11	.761
STPIS4	.751
STPIS3	.751
STPIS8	.740
STPIS1	.709
STPIS2	.701
STPIS12	.683

Results of parallel analysis (PA) suggested one factor solution (first row of results matrix).

Table 2. Results of Parallel Analysis (PA)

	Raw Data Eigenvalues	Means	Random Data Eigen.
1.	**7.179979**	**1.881299**	**2.130988**
2.	.755297	1.621155	1.784577
3.	.735777	1.423281	1.547844
4.	.693463	1.265534	1.376179
5.	.550129	1.127458	1.227064
6.	.525474	1.000943	1.096849
7.	.405448	.880000	.980203

	Raw Data Eigenvalues	Means	Random Data Eigen.
8.	.359974	.767485	.855307
9.	.295387	.663848	.748756
10.	.206125	.559886	.648085
11.	.173855	.458434	.540788
12.	.119092	.350676	.439716

Although EFA and PA strongly support one-factor solution for the STPIS 12 items, confirmatory factor analysis (CFA) obtained unsatisfactory results for Model 1 (12 items) and Model 2 (10 items, items without lowest values of communalities and factor loadings). Model 3 (items 3,4,5,6,7) reached criterion values for RMSEA, GFI, AGFI and CFI (Kline, 2005). Cronbach's Alpha for this one-factor model (named STPIS-5) was α=.882, with 69.78% of total variance explained (59.83% for 12-item STPIS). Correlation with the 12-item version of STPIS (Model 1) r=.996.

Table 3. Summary of Test Statistics for Confirmatory Factor Analysis for STPIS and STPIS-5

	χ^2/p	RMSEA	GFI	AGFI	CFI
Model1	6.242/0.351	0.049	0.84	0.76	0.95*
Model2	5.660/0.011	0.009	0.85	0.76	0.93*
Model3*	4.487/0.480	0.002*	0.96*	0.90*	0.99*

Note: **GFI**=Goodness-of-Fit Index; **AGFI**=Adjusted Goodness-of-Fit Index; **CFI**=Comparative Fit Index; **RMSEA**=Root Mean Square Error of Approximation. **Criterion:** *Criteria: GFI > .90, AGFI > .90, CFI > .95, RMSEA < .06 (Kline, 2005).
Model 1: 1–12 items (59.83% of variance explained) not satisfactory CFA criterion.
Model 2: 1,3,4,5,6,7,8,9,10,11 items (63.02% of variance explained) not satisfactory CFA criterion.
Model 3: 3,4,5,6,7 items (69.78% variance explained) satisfactory CFA criterion (Cronbach's Alpha α=.882). Correlation with 12-item version r=.996.

Statistical analysis for STPIS-5. The obtained inter-item correlation for five extracted items shows that all the correlations are over r > 0.40. Cronbach's Alpha for STPIS-6 α=.882 and the correlation with the 12-item original version of the STPIS is r=.996. There are no items with Cronbach's Alpha if item deleted value α >.882. The Kaiser-Meyer-Olkin Measure of Sampling Adequacy (KMO=.854) and Bartlett test of sphericity (p=0.000) had satisfactory values. Factor analysis (PCA) for STPIS-5 extracted one-factor solution. One factor explains 69.78% of variance.

Table 4. Component matrix for STPIS-5

Component Matrix	Component
I am attracted by the work of a teacher.	.889
I always wanted to be a teacher.	.861
I think that it will be good for me to be engaged in education.	.850
When someone says something negative about teachers, I feel hurt.	.814
Being a teacher is the central part of my life.	.757

Indicators of concurrent validity of the STPIS-5 are shown in Table 5. The STPIS-5 was negatively correlated with the RS-14 and positively correlated with the CTPI, RSES and WEMWBS.

Table 5. Indicators of Concurrent Validity: Correlation Matrix

	STPIS-5	RSES	MBS-ES	WEMWBS	CTPI	RS-14
STPIS-5	1.000					
RSES	.263*	1.000				
MBS-ES	.295*	.047	1.000			
WEMWBS	.178	-.161	.135	1.000		
CTPI	.463**	.070	.225*	.144	1.000	
RS-14	-.005	.127	-.185	-.203	-.137	1.000

**Correlation is significant at the 0.01 level (2-tailed).
*Correlation is significant at the 0.05 level (2-tailed).
Note: STPIS-5-Student Teacher Professional Identity Scale; RSES-Rosenberg Self-Esteem Scale; MBS-ES-Maslach Burnout Inventory-Educators Survey; WEMWBS-Warwick Edinburgh Mental Well-Being Scale; CTPI-Cheung Teacher Professional Identity Scale; RS-14-Resilience Scale.

Discussion

Although it was used for the first time in Serbia, the questionnaire we used showed satisfactory psychometric indicators in the respondent sample (reliability and concurrent validity). Theoretical and empirical analyses in research dealing with the problem of professional identity of student teachers prove or presuppose possible links of identity with well-being (Kessels, 2010), self-esteem (Joseph and Heading, 2010), burnout stress (Pillen, 2013) and resilience (Pearce and Morrison, 2011; Papatraianou & Le Cornu, 2014). In our sample of respondents and related instruments that measure the mentioned variables, in order to examine

the concurrent validity of the student teacher professional identity scale, values of statistically significant correlations of the STPIS-5 with well-being (r=.278), self-esteem (r=.263), burnout stress (r=.295) and in-service teacher professional identity (r=.463) were obtained.

The obtained correlation of resilience and teacher identity is negative and not statistically significant. The obtained negative values of the correlation of resilience and burnout stress (which can be assumed to be significant) indicate the need to examine this relationship in greater detail (regression analysis). The obtained high values of the correlation between the in-service teacher professional identity and student teacher professional identity indicate the need to establish and examine latent dimensions in the explanatory factor and confirmatory factor analysis. All the obtained correlation values were expected and are in line with theoretical assumptions, except for the obtained value of the correlation with burnout stress, which is supposed to be low and negative (Pillen, 2013). Interestingly, a statistically significant correlation of stress with the identity of experienced teachers was obtained (r=.225).

The results of this empirical study are in the line with Fisherman and Abbot's (1998) results: university students perceive the teacher's role more as a specific job and not as a profession. They are goal-directed towards their job as teachers and see their practice as a part of their studies and not as a result of their professional identity development as teachers. The professional identity influences their self-regulation, but separately from ego identity, which means that these students are specifically goal-directed towards their job as teachers (Fisherman and Abbot, 1998). Our one-factor solution, with the 5-item structure, which meets the criteria of confirmatory factor analysis, indicates one dimension: *job-orientation* (rather than *profession-orientation*) in the structure of pre-service student teacher professional identity. It is interesting to note that in the previous research into the professional identity of experienced teachers we obtained one prominent factor in the factor loadings of teacher professional identity structure: *job-satisfaction* (Živković, 2013; Li, 2016).

What teachers initially believe about teaching and learning is vital to education, professional development and is the basis for designing and making decisions, as Bullough (1997) points out.

The data suggests a possible conclusion that *what the teacher does* should be at the heart of the student teaching experience, but what the teacher is, what they bring with them in terms of philosophy, identity and preconceived notions of learning, affects what they do. Factors beyond the control of pre-service candidates also create an impact on what the teacher does.

Conclusions

Based on the results we can conclude that the student teacher professional identity scale meets the criterion of reliability and concurrent validity. The factor and parallel analysis singled out a one-factor solution (job-orientation). The criteria for confirmatory analysis satisfy the five-item solution, and it is applicable to the sample of respondents in the Republic of Serbia. Research on forming a professional teacher identity is relevant to mentors in the training of future teachers in schools, and their goal is to better understand and conceptualize the support and needs of future teachers.

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