

# DEVELOPING TEACHER PROFESSIONALISM SCALE: VALIDATION AND RELIABILITY STUDY<sup>1</sup>

(ÖĞRETMENLİK MESLEĞİ PROFESYONELLİK ÖLÇEĞİ GEÇERLİK VE GÜVENİRLİK ÇALIŞMASI)

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## ABSTRACT

The research is aimed to develop a valid and reliable instrument which is will measure professionalism level of teaching profession based on literature, expert and practitioner masters' student of educational administration program knowledge. Research sample consisted of 315 teachers from different parts of Turkey at elementary and secondary level. Exploratory followed by confirmatory factor analyses to validate the scale. Exploratory factor analyses revealed that teacher professionalism scale could have 9 dimensions with explained 58,96 % of total variance. Confirmatory factor analyses revealed acceptable indexes. Composite teacher professionalism scale' cronbach alpha reliability coefficient was ,93. Results shows that teachers professionalism scale, includes 46 items, validated and reliable.

**Keywords:** Teacher, professionalism, teaching profession, scale development.

## ÖZET

Bu araştırma, literatür, uzman ve eğitim yönetimi yüksek lisans öğrencilerinin görüşlerine dayalı olarak, öğretmenlik mesleğinin profesyonellik düzeyini betimlemeyi amaçlayan geçerli ve güvenilir bir ölçme aracı geliştirmeyi amaç edinmiştir. Araştırmanın çalışma grubunu Türkiye'nin farklı bölgelerinde ilköğretim ve ortaöğretim okullarında görev yapan 315 öğretmen oluşturmaktadır. Araştırma kapsamında geçerlik amacıyla öncelikle açımlayıcı ardında da doğrulayıcı faktör analizi yapılmıştır. Açımlayıcı faktör analizi, öğretmenlik mesleğinin profesyonelliği ölçeğinin 9 boyuttan oluşabileceğini ve boyutların açıkladığı varyansın ise % 58,96 olduğunu ortaya koymuştur. Doğrulayıcı faktör analizi makul düzeylerde uyum indeksleri vermiştir. Profesyonellik ölçeğinin Alpha güvenirlik katsayı ,93 şeklinde ortaya çıkmıştır. Sonuç olarak, 46 madden oluşan öğretmenlik mesleğinin profesyonellik düzeyini betimleyen ölçme aracının geçerli ve güvenilir olduğunu söylemek mümkündür.

**Anahtar Kelimeler:** Öğretmen, profesyonellik, öğretim profesyonelliği, ölçek geliştirme

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## INTRODUCTION

Professionalism is explained as a set of attitudes and behaviors of a particular staff that is unlike but associated to organizational ethos and has inferences for individual motivations, cooperation and professional interaction among colleagues (Epstein & Hundert, 2002). Professionalism is a procedure through which every occupation follows to upgrade its status and growth towards full recognition within that dogma (Eraut, 1994). Professional physiognomies comprised of particular information, a collective mechanical culture, a robust service ethic and self-regulation (Carr, 2000; Etzioni, 1969; Larson, 1977). Professionalism relates to the profession and it's an ability to perform professionally. Professionalism as a societal and radical strategy or task intended to increase the interests of an occupation group; it enunciates the excellence and charisma of individuals' beliefs and actions within a specified group (Hargreaves & Goodson, 1996).

Essentially, specialized individuals relates to the profession. Every profession involves special capabilities to route it. Similarly, professionalism is a quality and action in teaching profession, and describes the successful characteristics of a professional teacher. Professionalism in teaching is assumed the new discourse for in-service training and professional growth which starts at the commencement of pre-service teacher training with advanced. Professional growth is defined as changes over time in the behavior, knowledge, images, beliefs, or perceptions of novice teachers (Kagan, 1992).

Teacher professionalism, the drive to improve the position, training, and work settings of teachers has been a great deal of researchers' interest (Ingersoll, 1997; Kagan, 1992; Pearson & Hall, 1993). Teachers are considered as professionals because all educational organizations are staffed with professionally qualified staff. In the view of teachers as reflective practitioners, Englund (1996). Teachers with high level of professionalism demonstrates more work satisfaction, less job stress and high self-esteem. They can bring about change in their students' learning who have low interest in studies (Pearson & Hall, 1993).

Teacher for being professional are generally supposed to be able to regulate their professional development by cultivating knowledge and skills through teaching experience and capacity building training programs (Eraut, 1994). Teachers with high professional skills exhibit more efforts in handling teaching tasks. Hence, the professional growth of teachers can be inferred as a comprehensive exertion to increase the skills, quality of learning and educational role of teacher educators at the work place. Professional teacher educators may have expertise in teaching, handling, guiding, training, evaluating, and appraising the students (Jumardin et al., 2014).

Professional development is the merely means for teachers to advance such applied teaching knowledge. Professional teacher has specialized knowledge and competence to work in agreement with the established criteria. Jumardin et al., (2014) extracted the meaning of competence, the knowledge, abilities, skills and

proficiencies that a person attains, which becomes part of his or her being to the magnitude, or she can adequately execute specific intellectual, emotional, and psychomotor behaviors. Professional teachers have the ability to monitor their students' learning process in a professional way by using best pedagogy and teaching strategies so that the educational goal can be accomplished.

Hoyle and John (1995) reported that being a professional has three core themes of importance: *knowledge, responsibility and autonomy*. Every profession holds certain components such as essential skills, knowledge, attitudes and beliefs and skills that is recognized and accepted by representatives of other fields (Corrigan and Haberman, 1990). A profession is characterized by using four substantial elements: elementary knowledge; promise of qualifications; material resources; and training conditions. Each renowned field is categorized by attitudes, knowledge, beliefs and skills that are usually influenced by all of the practitioners in the field and not typically possessed by people not linked to the field. These depend on on beliefs, inquiry, professional values and professional ethics of the specific field.

Teacher quality is a significant feature of the teacher professionalism and refers to the amalgamation of three features of effective teachers such as teachers' professional skills and commitment, professional qualification and teachers' self-esteem to teach effectively (Shaukat, 2014). Similarly, educational background of teachers and teaching pedagogies influence on students' learning. Teachers with sound professional knowledge contribute significantly in improving students' achievement scores. Teachers with high level of professional skills extend mutual relationships with their students to solve their learning problems (Rockoff, 2004). Teachers with high level of professional skills tend to deliver appropriate knowledge and use effective teaching strategies rendering the contemporary needs of their classrooms (Levine, 2006).

Likewise teacher quality, teacher autonomy is also an important element in teaching profession. Teacher autonomy holds a dominant position and it is meticulously related to moral responsibility, the capability to make liable choices in ratifying active learning, expressive knowledge and also independency in their students (Niemi and Kohonen 1995). At the teaching setting, It is supposed that the specialized skills and professional knowledge of a teacher can only be communicated if the teacher has an adequate decision-making rights, authority among colleagues, students, parents and the common public and the substantial circumstances, material and paraphernalia required to demeanor teaching and educating activities (Krull 2002; Evans 2008).

In addition, teachers' professional self-assessment is related to numerous other characteristics of professional efficiency, such as job fulfillment, professional commitment and particular effectiveness (Day 2002). Teachers with high professional skills have autonomy of action in spreading the contemporary knowledge, attitudes and skills in a precise work situation. Teachers with the help of professional skills and knowledge can make big difference in students' learning,

they have enough decision-making rights, mutual relationship and authority among students, coworkers, parents. They can use substantial teaching equipment to conduct teaching and educating activities Likewise, the concept of professionalism, teacher independence embraces a vital place and it is meticulously related to moral concern (Krull, 2002).

### **Purpose of the Research**

This research is aimed to develop a valid and reliable instrument which is will measure professionalism level of teaching profession based on literature, expert and practitioner masters' student of educational administration program knowledge.

## **METHOD**

### **Population and Sampling**

Sample size is an issue that has received considerable discussion in the literature. It is fact that the numbers of sampling could contribute reliability of the research, but it is hard to include great numbers also. Sample size plays an important role in almost every statistical technique applied in empirical research (Raykov, Marcoulides, 2006, p. 30). If sample size is not sufficiently large, or if assumptions are violated, the tabled chi-Square distribution is no longer an appropriate reference distribution for the test and cannot be used to determine p-values (Bandalos, Gagne, p. 93). Gorsuch (1983) has also proposed guidelines for minimum ratios of participants to items (5:1 or 10:1), which has been widely cited in counseling psychology research in a similar way Hu, Bentler and Kano (1992) suggest that sample size would desirably be more than 10 times the number of free model parameters. In spite of the fact that researchers disaccord the numbers of sampling size (Tabachnic & Fidell, 2001; Velicer & Fava, 1998). Worthington and Whittaker (2006) present four proposals depending on the literature review (p. 817): (a) Sample sizes of at least 300 are generally sufficient in most cases, (b) sample sizes of 150 to 200 are likely to be adequate with data sets containing communalities higher than .50 or with 10:1 items per factor with factor loadings at approximately |.4|, (c) smaller samples sizes may be adequate if all communalities are .60 or greater or with at least 4:1 items per factor and factor loadings greater than |.6|, and (d) samples sizes less than 100 or with fewer than 3:1 participant-to-item ratios are generally inadequate.

The targeted population of the study (N=400) included primary and secondary public school teachers working in different cities of Turkey, majority of them working in Duzce, during 2014 fall semester. Since being convenience for researchers majarotiy of sample collected from Duzce, where researcher live. Additionally to Duzce also data collected from Zonguldak, Kocaeli and Istanbul. The surveys were administered in 25 schools. In total, 400 paper surveys were administered in 4 cities; to ensure desired sample size, the number of distributed surveys was higher than the targeted sample size. The return rates for were high (79%) yielding a total of 315 responses. It can be concluded that the numbers of 315 participants included in this study provide the requirements anticipated by scholars

(Gorsuch, 1983; Tabachnic & Fidell, 2001; Velicer & Fava, 1998; Worthington & Whittaker, 2006). Demographic characteristics of participants are presented in Table 1.

**Table 1. Demographic Variables of Participants**

Variable	Level	N	%
City	1. Duzce	209	66.3
	2. Zonguldak	87	27.6
	3. Kocaeli	6	1.9
	4. İstanbul	13	4.1
	5. Total	315	100
School Type	1. Primary	106	33.7
	2. Middle	97	30.8
	3. Secondary	48	15.2
	4. Vocational Secondary	64	20.3
	5. total	315	100

As it is stated in Table 1, 209 of teachers work in Düzce whereas 87 of them in Zonguldak, 6 of them in Kocaeli and 13 of them in Istanbul. Furthermore 106 of teachers work at primary, 97 of them are at secondary and 21 of them are academic high school and 91 of them vocational high schools.

### **Draft Measurement Instrument Development**

The following steps administrated to create items pool for TP scale. As a first, 10 teachers who volunteered in this study were lectured about dimensions / components of TP based on literature review. Second, the same participant teachers were asked to describe the indicators that related with teacher professionalism. The scale was developed for pilot study after statements got from volunteer teachers, draft form developed by researchers depending on the literature review and feedback from post graduate students of educational administration program. The headings and structure of draft scale presented below. Loyalty to and autonomy of profession, beliefs of society towards teaching profession and their high level of knowledge and ability demanded by society, actual organizations and power of teachers' union, disciplines of profession, development and ethics of teaching are accepted as structures or parts referring to professionalism throughout literature review. Draft TP instrument is 5-point Likert type, and asks participants' level of agreement to the statements (indicators) regarding professionalism of teaching. options of the instrument: Never, little, somewhat, much, and a great deal meaning that a high score obtained from the instrument represents high professionalism of teaching and a low score represents low professionalism of teaching. The draft scale includes 3 negative and 62 positive items.

### **Data Analysis**

Factor analysis is a technique used to identify or confirm a smaller number of factors or latent constructs from a large number of observed variables (or items). As to the Hoyle (2012) "traditional factor analysis model is referred to as EFA because those influences, even in the presence of well-developed hypothesis, cannot be

specified a priori” (p. 4). This technique has three main uses (Field, 2009): (1) to understand the structure of a set of variables (2) to construct a questionnaire to measure an underlying variable; and (3) to reduce a data set to a more manageable size while retaining as much of the original information as possible. There are two main categories of factor analysis (Kahn, 2006): (a) exploratory and (b) confirmatory. Exploratory Factor Analysis (EFA) assesses the construct validity during the initial development of an instrument. EFA or principal component analysis, requires the researcher to theorize an underlying structure and assess whether the observed data “fits” this a priori specific model (Mueller, 1996). After developing an initial set of items, researchers apply EFA to examine the underlying dimensionality of the item set. Thus, they can group a large item set into meaningful subsets that measure different factors. The primary reason for using EFA is that it allows items to be related to any of the factors underlying examinee responses. As a result, the developer can easily identify items that do not measure an intended factor or that simultaneously measure multiple factors, in which case they could be poor indicators of the desired construct and eliminated from further consideration (Worthington & Whittaker, 2006). CFA is based on the premise that observable variables are imperfect indicators of certain underlying, or latent, construct (Mueller, 1996, p. 62). The main advantage of confirmatory models is that prior knowledge can be taken into account when formulating the model (Blunch, 2008).

Additionally, the Kaiser-Meyer-Olkin (KMO) and Bartlett’s tests were used to verify the data’s appropriateness for EFA and whether the data were sufficient (Worthington and Whittaker, 2006). The KMO statistic varies between 0 and 1 (Field, 2009). Hutcheson and Sofroniou (1999) recommend that KMO values between 0.5 and 0.7 are mediocre, values between 0.7 and 0.8 are good, values between 0.8 and 0.9 are great and values above 0.9 are superb. Bartlett’s test of sphericity indicated that correlations between items were sufficiently for factor analysis and this value should be significant (Field, 2009).

Data normality distribution which is a base hypothesis of parametric statistics was also verified. Although there are different opinions on the observation counts regarding the appropriateness for the EFA, some scholars agreed that number of observation should not be less than 100-200 (Kline, 2005) or there should be 5-10 participants per item (Grimm and Yarnold, 1995). In this study, a total number of 315 data counts were reached, and there were almost 5 participants per item that verify the data’s normality distribution.

## FINDINGS

In this chapter, findings regarding the TP instrument’s EFA, CFA, reliability, and internal consistency are discussed

### Findings Regarding EFA

Table 2 displays the KMO and Bartlett’s tests’ results of the TP instrument according to EFA.

**Table 2. KMO and Barlett Tests Results**

Kaise-Mayer-Olkin Measure of Sampling Adequacy		,911
Bartlett Testi	Ki-Kare	2082,836
	sd	276
	p	,000

As table 2 displays, QSWL instrument's KMO value is very high and it is meaningful (.000) according to the Barlett's test. According to these results, it is possible to say that the data is appropriate for factor analysis (Hutcheson & Sofroniou, 1999). Central tendency and variability measures were also checked to verify the data's normality distribution. If the skewedness coefficient stays in  $\pm 1$  boundary, it can be interpreted that scores don't show a remarkable deviation from their normal distribution (Field, 2009). Skewedness and kurtosis coefficients of the analysis are respectively  $-.029$  and  $-.038$ . Obtained scores are in  $\pm 1$  boundary, and the data shows a distribution very akin to normal. Statements' factor loadings of same factors, factor loadings of items below .30 and factors simply consist of two statements were removed from scale that each factors should have more than two statements, as a result the final EFA in the measurement instrument development are given in Table 3.

As it can be seen on table 4, TP scale is composed of nine dimensions. According to final analysis, first factor has 13 items; explains 14.43 percent of the variance; has a 6.64 eigenvalue; and its factor loadings vary between .48 and .73. Second factor has items; explains 10.23 percent of the variance; has a 4.71 eigenvalue; and its factor loadings vary between .55 and .70. Third factor has 5 items; explains 8.03 percent of the variance; has a 3.7 eigenvalue; and its factor loadings vary between .64 and .83. Fourth factor has 3 items; explains 4.88 percent of the variance; has a 2.24 eigenvalue; and its factor loadings vary between .54 and .61. Fifth factor has 4 items; explains 4.75 percent of the variance; has a 2.18 eigenvalue; and its factor loadings vary between .52 and .65. Sixth factor has items; explains 4.46 percent of the variance; has a 2.05 eigenvalue; and its factor loadings vary between .61 and .67. Seventh factor has 3 items; explains 4.44 percent of the variance; has a 2.04 eigenvalue; and its factor loadings vary between .60 and .66. Eighth factor has 3 items; explains 3.97 percent of the variance; has a 1.83 eigenvalue; and its factor loadings vary between .57 and .71. Fifth and last factor has 3 items; explains 3.78 percent of the variance; has a 1.74 eigenvalue; and its factor loadings vary between .54 and .74. The results explain that TP scale explains a total of 58.96 percent variance.

**Table 3. Final Exploratory Factor Analysis Results on Teacher Professionalism Scale**

Items	Dimensions								
	1	2	3	4	5	6	7	8	9
51	,727	,093	,025	,023	,097	,016	-,020	,078	-,001
46	,709	-,020	,126	,053	,223	-,010	,018	,137	-,101
48	,709	,064	,014	-,011	,042	,172	,164	,046	,035
52	,687	-,042	,046	,017	,210	-,013	,001	,073	,039
55	,681	,005	,057	,247	,129	,180	,107	-,026	-,006
64	,673	,111	,086	,170	,030	,179	,024	,110	,137
40	,644	,165	,056	,147	,169	,164	-,069	,021	,039
59	,608	,345	,103	,362	,080	-,034	,047	,040	,044
62	,603	,262	,056	,195	,142	,016	,183	,034	-,069
49	,574	,014	-,052	,027	,091	,110	-,051	,353	,190
30	,508	-,034	,046	,355	,009	,192	,125	,173	,254
42	,507	,208	,095	,172	,377	-,006	,142	-,003	,045
58	,475	,420	,257	,194	,137	,045	,123	,153	-,032
41	,066	,698	,182	,026	,011	,006	,197	,059	,109
57	,001	,686	,057	,296	,098	,169	-,132	,052	-,025
44	,094	,645	,069	,061	,141	,045	-,080	,072	,135
61	,171	,641	,206	,022	-,024	,101	,427	,013	-,042
47	,143	,609	,098	-,015	-,130	,221	,296	-,074	,165
34	-,137	,578	,108	-,102	,037	-,039	,197	,012	,216
60	,353	,577	,090	,431	,026	,055	-,054	-,016	-,015
53	,220	,563	,192	-,048	,121	,188	,063	,097	,256
33	,121	,545	,125	,122	,076	-,044	,126	,302	,098
37	,145	,109	,830	,097	,034	,138	,093	,061	,045
18*	,009	-,188	-,818	-,041	-,003	,024	-,121	-,018	-,020
9*	-,005	-,145	-,783	-,077	-,035	,017	-,077	-,017	-,152
27	,134	,139	,755	,008	,016	,227	,119	,066	,028
2	,099	,202	,637	-,136	,182	,152	,145	,143	,197
26	,347	,156	,014	,611	,100	,015	,028	,186	,088
23	,267	,002	,048	,607	,199	,261	,110	,057	,119
22	,266	,175	,039	,535	,101	,043	,122	,232	,070
13	,429	,083	,070	,135	,654	,044	,090	-,139	,038
8	,286	-,024	,109	,068	,648	,177	,068	,101	,036
17	,382	,130	,067	,129	,563	,069	-,058	,232	-,028
14	,360	,136	-,065	,085	,524	,245	,131	,115	,086
3	,115	,164	,097	-,067	,098	,726	-,019	,057	,112
24	,245	,025	,124	,230	,184	,683	,081	,043	-,064
19	,153	,165	,230	,190	,078	,607	-,032	,170	-,179
1	,074	,168	,136	-,135	,262	-,102	,666	-,013	,056
32	,111	,260	,242	,267	-,047	-,049	,640	,155	,037
28	,157	,148	,345	,247	,042	,208	,597	,006	,028
10	,309	,122	,062	,105	,017	,039	-,010	,712	-,008
20	,233	,141	,153	,145	,259	,109	-,045	,607	,166
21	-,028	,062	,099	,196	-,038	,181	,403	,566	-,099
5	-,057	,236	,107	,135	,176	-,117	-,007	,081	,742
38	,113	,393	,280	,048	-,043	,040	,027	-,048	,616
65	,265	,400	,159	,117	-,091	,058	,099	,039	,536

\* Negative items

First dimension is labeled as “Teacher Quality and Professional Sensitivity” because it includes items such as criticism, self-check, openness to authentic methods and professional sensitivity. Some examples items belong to this dimension were as followed: “Teachers have strong self-control” (item # 51);

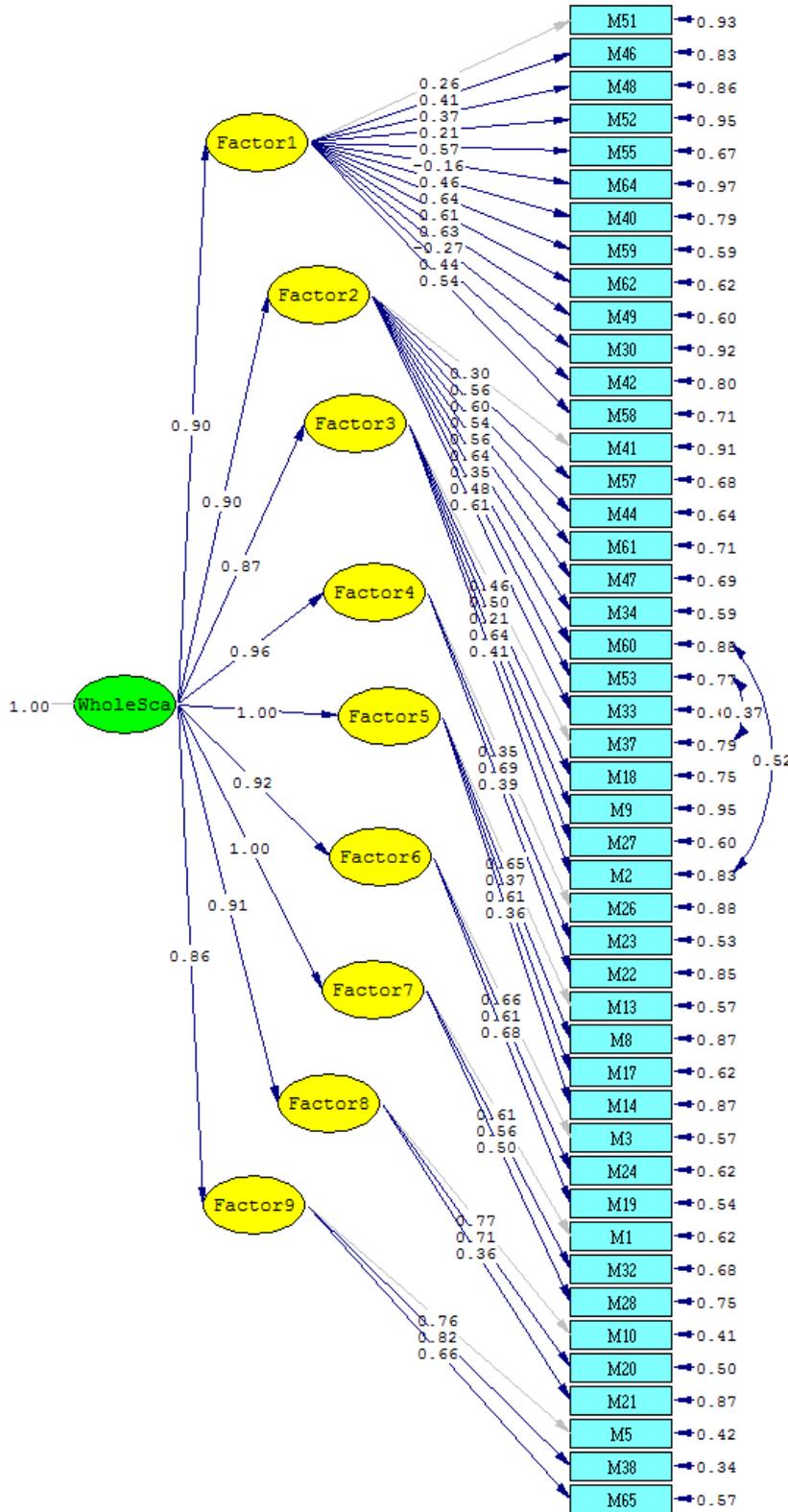
“teachers do teaching with self-devotion” (item # 46); “teachers are aware of what to do in order to be successful” (item # 55); “teachers do self-evaluation analytically and critically what they do in and out of classroom” (item # 40); Second dimension includes items related with support of top administrators and public to teachers thus it is labeled as “Perception of Top Administrators and Public to Profession”. Some examples items belong to this dimension were as followed: “Policy makers and authorities hold in high esteem to teaching profession” (item # 41); “teachers’ opinions are considered in the process of organizing rules, procedures, principles and laws of teaching profession” (item # 57); “teaching profession is prestigious in the sense of society” (item # 61). Third dimension is labeled as “Commitment to Profession” because the items were related with teachers’ commitment to teaching profession. Some examples items belong to this dimension were as followed: “I am fond of doing teaching” (item # 37); “I would do this profession even if I don’t need money” (item # 27). Fourth dimension is labeled as “Having Higher Knowledge and Skill” because the items related with teachers’ knowledge and ability. An example item belong to this dimension was as followed: “Teachers are subjected to high level of qualified pre service training” (item # 22). Fifth dimension is labeled as “Professional Discipline” because the items were related with the statements of required standards of teaching profession. An example item belong to this dimension was as followed: “Teachers do teaching according to the course purpose” (item # 8). Sixth dimension labeled as “Professional Development” because the items were related with professional development of teacher / teaching. An example item belong to this dimension was as followed: “I regularly follow up publication in my profession” (item # 3). Seventh dimension labeled as “Public’s Perceptions of Trust to Profession” because the items were related with statements of perceived belief of public opinion and societies’ support towards teaching. An example item belong to this dimension was as followed: “Teaching is in demand job in society (item 1). Eighth dimension labeled as “Perception Related with Importance of Profession” because the items were related with statements of importance for teaching according to teachers’ perceptions. An example item belong to this dimension was as followed: “Teaching profession is a job of great importance in information society (item 21). Ninth and the last dimension labeled as “Professional Autonomy” because the items were related with statements for participation of decision in schools including their work condition and teaching process. An example item belong to this dimension was as followed: “Teachers have right in the process of decision making at schools” (item 65).

### **Findings Regarding CFA**

Analysis and fit index results from testing factor structure (model) based on the EFA results with CFA are discussed in this section. According to EFA results, the scale is best utilized when it has the nine dimensions. Thus, DFA is also tested in nine dimensions.

TP scale was utilized most appropriately with nine dimensions as EFA results showed, and according to CFA results of TP scale, it was found that  $\chi^2 =$

4059.54 and  $df= 980$ . One of the model fit indexes is  $\chi^2 / sd$  (Marsh, Balla and McDonald, 1988), and this is 4.14 based on the DFA results. Kline (2005) suggested that for large samples,  $\chi^2 / sd$  ratio that is less than 3 corresponds to excellent fit;  $\chi^2 / sd$  ratio that is less than 5 corresponds to intermediate level fit. According to this, the 4.14 value is a proper result for the model, and  $\chi^2$  value is responding to the sample (West, Taylor and Wu, 2012), so other fit indexes should also be looked at. When other fit indexes were examined, the root mean square error of approximation (RMSEA) that is given in the path schema is .10 and the root mean square residual (RMR) is .083. It is possible to say that the .10 value of RMSEA represents an acceptable fit (Marsh, Hau, Wen, 2004), and the .086 value of RMR is also an acceptable number (McDonald ve Moon-Ho, 2002). As the fit indexes were further examined, it was found that the goodness of fit index (GFI) was .65 and the adjusted goodness of fit index (AGFI) was .60. Because a good fit requires a number greater than .90 for GFI and AGFI indexes (West, Taylor and Wu, 2012), the model's .65 and .60 values in this study indicate a weak fit. For model's other fit indexes, the normed fit index (NFI) is .88; the non-normed fit index (NNFI) is .91; and the comparative fit index (CFI) is .92. It can be concluded that these values are the indicators of a sufficient fit (Hu and Bentler, 1995). Figure 1 below shows the path schema that demonstrates the relations between items and factors regarding the nine-dimension model of the TP scale.



Chi-Square=4059.54, df=980, P-value=0.00000, RMSEA=0.100

**Table 5. Factor-Loadings, T And R<sup>2</sup> Values Regarding Nine-Dimensions Path Schema Of TP Scale**

Dimensions	Item No	Standardized Factor loading values ( $\lambda$ )	<i>t</i>	R <sup>2</sup>
Teacher Quality and Professional Sensitivity	51	0.26	4.57*	.07
	46	0.41	3.81*	.17
	48	0.37	3.67*	.14
	52	0.21	2.80*	.05
	55	0.57	4.13*	.32
	64	0.16	2.29*	.03
	40	0.46	3.94*	.21
	59	0.64	4.21*	.40
	62	0.61	4.19*	.37
	49	0.63	4.20*	.39
	30	0.27	3.23*	.08
	42	0.44	3.89*	.20
	58	0.54	4.08*	.29
Perception of Top Administrators and Public to Profession	41	0.30	5.55*	.11
	57	0.56	4.68*	.32
	44	0.60	4.75*	.36
	61	0.54	4.62*	.29
	47	0.56	4.67*	.31
	34	0.64	4.82*	.41
	60	0.35	4.03*	.16
	53	0.48	4.49*	.26
33	0.61	4.77*	.37	
Commitment to Profession	37	0.46	9.48*	.29
	18	0.50	6.04*	.27
	9	0.21	3.17*	.06
	27	0.64	6.85*	.40
	2	0.41	5.45*	.24
Having Higher Knowledge and Skill	26	0.35	8.02*	.22
	23	0.69	5.73*	.46
	22	0.39	4.61*	.15
Professional Discipline	13	0.66	10.53*	.32
	8	0.37	6.12*	.14
	17	0.61	9.84*	.37
Professional Development	14	0.36	6.03*	.14
	3	0.66	12.20*	.43
	24	0.61	9.26*	.37
Public's Perceptions of Trust to Profession	19	0.68	10.11*	.46
	1	0.61	11.53*	.40
	32	0.56	8.68*	.31
Perception Related with Importance of Profession	28	0.50	7.90*	.26
	10	0.77	15.26*	.62
	20	0.71	11.99*	.50
Professional Autonomy	21	0.36	5.88*	.13
	5	0.76	15.13*	.58
	38	0.82	13.82*	.66
65	0.66	11.19*	.43	

\**p* = ,000

In figure 1, values on the one-way lines from factors (latent variable) to items (observed variable) show the factors' causative effect sizes on the items – in other words, factor loading values, and values on lines coming from left end towards items show error variances regarding the items. Of greatest importance is that all of

the factor loadings are statistically significantly different from zero and have expected sign, that is, positive factor loadings (Schumacker, Lomax, 2010, p. 170). As they can be seen on the schema, error variances are between .34 and .97, and they are at a reasonable and acceptable level. Items' factoring loadings are between .16 and .82, and at a high level. Factor loadings,  $t$  and  $R^2$  results of the exploratory factor analysis regarding nine-dimension CFA path schema of TP scale are presented in table 5.

The regression coefficient, called a "factor loading" or ( $\lambda = \text{Lambda}$ ) in structural equation models, provide a measure of the strength of relationship between an item and latent variable. When a group of items "load" on a given factor, the estimated coefficients help us to better understand the latent variable being modeled (Edwards, Wirth, Houts, Xi, 2012, p. 197). Table 5 displays that items' factor loadings range between .16 and .82, so it is accordingly possible to say that the factors have a relatively high level of relevance with the items. Likewise, as can be seen from Table 5,  $t$  values regarding the latent variables' state of describing the observed variables are statistically significant at .001. Besides, the  $R^2$  values indicate how much of the explained variance in the observed variables stems from the latent variables, which is at a reasonable level of between .03 and .66. In the light of the given data, it is possible to say that EFA of nine-dimension TP scale has validity at an acceptable level.

### Reliability and Internal Consistency Analysis of The TP Scale

Alpha reliability coefficient regarding the reliability of the sub-dimensions of TP scale and the difference between scores of the lower and upper 27% groups were also analyzed by using t-test for independent samples. Table 6 includes the QWL scale and its factors' scores of the Cronbach's Alpha, lower and upper 27% groups' average, standard deviation and t-test.

**Table 6. TP Scale And Its Factors' Scores of The Cronbach's Alpha, Lower And Upper 27% Groups' Average, Standard Deviation And T-Test.**

Factors	Cronbah's Alpha	Lower % 27		Upper % 27		t-test of the lower and the upper groups
		$\bar{x}$	$S$	$\bar{x}$	$S$	
Teacher Professionalism Scale	.93	131.41	14.06	183.62	8.85	29.01*
1. Teacher Quality and Professional Sensitivity	.91	42.76	6.71	56.85	3.79	16.84*
2. Perception of Top Administrators and Public to Profession	.82	16.97	3.99	28.48	4.71	17.18*
3. Commitment to Profession	.87	14.81	5.09	22.24	3.07	11.52*
4. Having Higher Knowledge and Skill	.67	8.96	1.90	12.16	1.41	12.44*
5. Professional Discipline	.76	13.20	2.35	17.02	1.67	12.20*
6. Professional Development	.66	9.24	2.06	11.90	1.77	8.99
7. Public's Perceptions of Trust to Profession	.68	8.55	2.19	11.86	1.53	11.44
8. Perception Related with Importance of Profession	.56	10.16	2.42	13.21	1.26	10.27
9. Professional Autonomy	.70	6.75	1.82	10.00	2.04	10.96

\* $p = .000$ ; Lower and upper groups are composed of 170 participants.

As it can be seen on table 6, the composite TP scale's Cronbach's Alpha coefficient value is .93. Its sub-dimensions' Cronbach's Alpha coefficient values are as follows: Teacher quality and Professional sensitivity: .91; perceptions' of top administrators and public to profession: .82; commitment to profession: .87; having higher knowledge and skill: .67; Professional discipline: .76; Professional development: .66; public's perceptions of trust to profession: .68; perception related with importance of profession: .56 and professional autonomy: .70. Besides, when the measurement instrument is considered as one dimension or multi-dimension, t-test values regarding the lower and upper 27% groups' average score comparison are also as follows: the composite scale is 29.01; first dimension was 16.84; second dimension was 17.18; third dimension was 11.52; fourth dimension was 14.44; fifth dimension was 12.20; sixth dimension was 8.99; seventh dimension was 11.44; eighth dimension was 10.27 and ninth dimension was 10.96. These values are statistically significant ( $p < .001$ ).

### Correlation Matrix

In order to examine the internal consistency of the measurement instrument, the correlation values, the mean and standard deviation values between the total scores of factors, among nine dimensions, as well as in the case of the scale to be considered as a one-dimensional structure are given in Table 7.

As can be seen from table 7, the correlation values between the between TP and its sub-dimensions vary between .55 and .81 which are at intermediate and high levels. Accordingly, the highest correlation value with the composite TP scale is the sub-dimension "teacher quality and Professional sensitivity" while the lowest correlation "professional development" sub-dimension. The correlation values between the composite TP scale and its sub-dimensions, and the dimensions' correlation values with each other have all appeared to be significant at the level of .01.

Composite TP, its descriptive statistics and means of 46 items were ( $\bar{x} = 3,44$ ). It means that the level of teacher professionalism is meaningful and at reasonable level. The highest score is ( $\bar{x} = 3,92$ ) of the headings 'perception related with importance of profession'. It could be concluded that perceptions of teachers' towards their profession is relatively high. For the scale of TP, the mean of 'teacher quality and professional sensitivity' dimension is ( $\bar{x} = 3,85$ ), and also relatively high level. On the other hand the lowest score of the scale is dimension of 'perception of top administrators and public to profession' ( $\bar{x} = 2,53$ ) and professional autonomy' ( $\bar{x} = 2,81$ ).

### Items Analysis

In order to examine QWL scale items' distinctiveness level for participants and their internal consistency, dependent and independent t-test scores regarding

average differences between the upper and the lower 27% groups over a total score as well as item-total correlations corrected for each item are shown in table 8.

**Table 7. Correlation Values between Composite Scale, Factors, Mean, and the Standard Deviation**

Factors	$\bar{x}$	sd	Correlations between factors								
			(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Composite TP Scale	3.44	.47	.81**	.77**	.64**	.65**	.64**	.55**	.61**	.59**	.58**
1. Teacher Quality and Professional Sensitivity	3.85	.55		.43**	.28**	.61**	.67**	.41**	.36**	.46**	.31**
2. Perception of Top Administrators and Public to Profession	2.53	.66			.43**	.39**	.30**	.33**	.48**	.35**	.58**
3. Commitment to Profession	3.78	.99				.21**	.22**	.33**	.47**	.29**	.40**
4. Having Higher Knowledge and Skill	3.53	.66					.48**	.35**	.33*	.47**	.28**
5. Professional Discipline	3.80	.61						.40**	.28**	.37**	.21**
6. Professional Development	3.50	.68							.24**	.34**	.14**
7. Public's Perceptions of Trust to Profession	3.39	.72								.32**	.30**
8. Perception Related with Importance of Profession	3.92	.71									.24**
9. Professional Autonomy	2.81	.77									

As can be seen from Table 8, the corrected item-total correlation values range between .28 and .68. Results show that item-total correlation values are at a reasonable level, and that the items are relevant with the total measurement scores at a reasonable level. T-test scores regarding differences per each item between the upper and the lower 27% groups of the measurement range between 4.63 and 14.26. All item values are statistically significant ( $p \leq .000$ ), and the arithmetic means of the items are between 2.02 and 4.26.

## RESULTS AND DISCUSSION

The purpose of study this study is to develop a reliable and valid instrument that describes the teacher professionalism based on teachers' view. Furthermore, loyalty to profession, autonomy of profession, beliefs of society towards teaching profession and their high level of knowledge and ability demanded by society, actual organizations and power of teachers' union, disciplines of profession,

development and ethics of teaching are accepted as structures or parts referring to professionalism throughout literature review.

**Table 8. Results of the TP Scale Items Analysis**

Dimensions	Item No	$\bar{x}$	<i>sd</i>	<i>r</i>	<i>t</i>
Teacher Quality and Professional Sensitivity	51	3,80	,750	,466	8.22*
	46	4,09	,821	,469	7.68*
	48	4,07	,772	,489	8.74*
	52	4,26	,728	,412	6.54*
	55	4,04	,762	,518	9.52*
	64	3,99	,765	,573	10.33*
	40	3,79	,855	,534	9.92*
	59	3,49	,918	,643	12.16*
	62	3,64	,854	,569	10.22*
	49	3,93	,755	,416	7.27*
	30	3,69	,785	,497	9.86*
	42	3,70	,773	,552	10.46*
	58	3,53	,925	,684	14.26*
	Perception of Top Administrators and Public to Profession	41	2,06	,955	,505
57		2,51	1,16	,441	8.92*
44		2,78	,928	,441	8.91*
61		2,70	1,08	,569	11.96*
47		2,34	,968	,480	9.37*
34		2,02	,954	,285	4.63*
60		3,04	,910	,592	12.64*
53		2,97	,940	,582	10.91*
Commitment to Profession	33	2,39	,976	,502	9.52*
	37	4,10	1,04	,537	9.38*
	18	1,86 <sup>1</sup> /4,13 <sup>2</sup>	1,12/1,13	,419	7.26*
	9	2,35 <sup>1</sup> /3,65 <sup>2</sup>	1,45/1,46	,418	8.00*
	27	3,35	1,30	,506	9.84*
Having Higher Knowledge and Skill	2	3,63	1,19	,511	10.15*
	26	3,60	,787	,491	9.96*
	23	3,82	,780	,464	8.47*
Professional Discipline	22	3,15	,975	,484	8.44*
	13	3,82	,877	,469	8.16*
	8	3,94	,762	,411	7.30*
	17	3,91	,784	,482	8.04*
Professional Development	14	3,53	,814	,479	10.19*
	3	3,20	,975	,346	5.85*
	24	4,11	,681	,438	7.83*
Public's Perceptions of Trust to Profession	19	3,20	,951	,422	6.81*
	1	3,27	,865	,311	5.39*
	32	3,33	,951	,491	10.09*
Perception Related with Importance of Profession	28	3,58	,961	,524	10.14*
	10	3,77	,928	,410	7.79*
	20	3,75	1,00	,493	8.33*
Professional Autonomy	21	4,22	,938	,305	4.98*
	5	2,64	,997	,299	5.77*
	38	2,61	,967	,452	7.76*
	65	3,17	,965	,519	10.15*

\* p= .000; <sup>1</sup> Negative item; <sup>2</sup> recoded as positive

r: the corrected item-total correlation values

t: t-test scores regarding differences per each item between the upper and the lower 27% groups of the measurement. n<sub>1</sub> = n<sub>2</sub> = groups of 212 participants.

The draft instrument was initially developed based on the literature review and the interviews with 10 teachers, and a pilot-study with teachers, enrolled to master's program for educational administration, was conducted after the draft instrument was refined with the experts' judgments. Exploratory factor analysis was used to revise the instrument, and confirmatory factor analysis was used to verify the revised instrument. The instrument had a total number of 65 items, and 63 of them were positive and 2 were negative. Final EFA revealed that, principal component analyses by Varimax method was used, the instrument came out with nine dimensions as followed: 1) Teacher quality and Professional sensitivity, 2) perception of top administrators and public to profession, 3) commitment to profession, 4) having higher knowledge and skill, 5) professional discipline, 6) professional development, 7) public's perceptions of trust to profession, 8) perception related with importance of profession, 9) professional autonomy. These nine dimensions explain a total 58.96 percent of variance, and their factor loadings range between .47 and .83. It is possible to say that the variance percentage is at a reasonable and acceptable level in social sciences.

The model/factor structure that was created with the EFA was retested and verified by CFA. Fit index results of the confirmatory factor analysis show that  $\chi^2 / sd$  ratio and the root mean square error of approximation and the root mean square residual were in acceptable; the goodness of fit index and the adjusted goodness of fit index were weak; the normed fit index, the non-normed fit index and the comparative fit index have acceptable values. It also showed that items' factoring loadings were between .16 and .82, and at a high level; and t values regarding the latent variables' state of describing the observed variables are statistically significant at .001. Composite TP scale's Cronbach's Alpha coefficient value is .93, and the dimensions' reliability coefficient values were as follows (in the above order): 1) .91; 2) .82; 3) .87; 4) .67; 5) .76; 6) .66; 7) .68; 8) .56; 9) .70. Additionally, the instruments' composite and sub-dimensions t-test values for the upper and the lower 27 % groups are statistically significant at the .001 level. The corrected item-total correlation values range between .28 and .68. Results show that item-total correlation values were at a reasonable level, and that the items are relevant with the total measurement scores at a reasonable.

The correlation values between the composite TP scale and its sub-dimensions vary between .55 and .81 which are at intermediate and high levels. The highest score that can be obtained from the composite TP scale (46 items) was 230, the lowest score is 46, the highest point of participants are  $\bar{x} = 212$ , whereas the lowest is  $\bar{x} = 86.3$ . The mean score obtained from TP scale were  $\bar{x} = 158,3$ . It is possible to state that the level of teacher professionalism is over than average, and it is hard to say that teacher professionalism is on the rational level. The highest level that teachers valued is "perception related with importance of profession" and "teacher quality and professional sensitivity" and it means the perceptions of teachers towards their profession could be meaningful. Furthermore teachers perceived themselves and colleagues sensitive enough in terms of quality and

consideration. The lowest score of the headings in the scale is “perception of top administrator and public” and it means teachers do not perceive sufficient support from environment and public opinion. The other headings those teachers less valued are ‘professional autonomy’ and it is reasonable when to consider that participants are mostly engaged in public schools. Although teachers are not autonomous enough at public schools considering the participants’ status, it is fact that professional autonomy could inevitably contribute teacher professionalism.

The dimensions appeared in the scale seems to cover generally basic concepts in the literature. Professional development of teachers have been linked to some common words and phrases in the literature by experts and practitioners that are knowledge and skills (Eraut, 1994); knowledge, responsibility and autonomy (Hoyle and John, 1995); special capabilities, successful characteristics, behavior, knowledge, images, beliefs, and perceptions (Kagan, 1992); the drive to improve the position, training, and work settings and researchers’ interest (Ingersoll, 1997; Kagan, 1992; Pearson & Hall, 1993); expertise in teaching, handling, guiding, training, evaluating, and appraising the students, competence, the knowledge, abilities, skills and proficiencies, specific intellectual, emotional, and psychomotor behaviors (Jumardin et al., 2014); essential skills, knowledge, attitudes and beliefs and skills, elementary knowledge, promise of qualifications, material resources, and training conditions (Corrigan and Haberman, 1990); mutual relationships with their students to solve their learning problems (Rockoff, 2004); appropriate knowledge and effective teaching strategies (Levine, 2006); teachers’ professional skills and commitment, professional qualification and teachers’ self-esteem to teach effectively (Shaukat, 2014); autonomy, the capability to make liable choices, adequate decision-making rights, authority among colleagues, students, parents and the common public and the substantial circumstances, material and paraphernalia required to demeanor teaching and educating activities (Krull 2002; Evans 2008); expressive knowledge and independency in their students (Niemi and Kohonen 1995); job fulfillment, professional commitment and particular effectiveness (Krull, 2002), autonomy of action in spreading the contemporary knowledge, attitudes and skills in a precise work situation, enough decision-making rights, mutual relationship and authority among students, coworkers, parents and teachers’ professional self-assessment (Day 2002).

In this research the themes and dimensions that cover teacher professionalism appeared as teacher quality, professional sensitivity, public views to teaching, commitment, knowledge and skills, professional discipline, development, trust, importance and autonomy are the basic concepts that participants valued when to think about teacher professionalism. When to compare them related with literature, it could be concluded that common concepts and characteristics stated in literature will mostly resemble with context in Turkey. Statistics and values that provide the validity and reliability of this scale will be meaningful and make sense accordingly.

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