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Developing a "values teaching responsibility perception scale" for prospective teachers

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Abstract

In this study, a measurement tool that could be utilized to determine the values teaching responsibility perceptions of prospective teachers was aimed to develop. For this purpose, both the related literature on values teaching was investigated and the views of student teachers at a state university in Ankara, Turkey were taken. Consequently, an item pool comprising 46 items was created. After collecting the experts' opinion, these items were reorganized and the preliminary form was developed. This preliminary form was administered to 274 prospective teachers, 206 of whom were female and 62 were male from different grades and different departments of the Faculty of Education at the state university in 2018-2019 academic year, Fall Semester. Validity and reliability tests were administered to the obtained set of data. During this process, first the Exploratory Factor Analysis (EFA) for construct validity and then the Confirmatory Factor Analysis (CFA) were applied. Confirmatory Factor Analysis (CFA) was administered to a different group of 352 prospective teachers, 278 of whom were female and 80 male. At the end of exploratory factor analysis, a scale form consisting of 35 items and 4 sub-dimensions was obtained. The four factor structure about the scale explained the 61.46% of the total variance. According to the reliability analysis Cronbach alpha reliability coefficient for the overall scale was .97, for sub-dimensions respectively as .93, .93, .88 and .84. The model fit indices for the scale at the end of the confirmatory factor analysis were determined RMSEA, .064; $\chi 2/df=2.1$; SRMR=.06; IFI=.90; CFI=.90. Values obtained showed that the scale construct was validated.

Keywords: Values; values teaching; responsibility perception; scale development.

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1. Introduction

Responsibility is described as the individual's taking care of oneself and others, fulfilling the obligations, participating in the social processes, obtunding and struggling for a better world (Lickona, 1991). Responsibility refers to the tasks that the individual should perform in order for her/himself and her/his environment for a quality living. Those who behave irresponsibly cause others to have some misery consequences throughout their lives. Thousands of people who do not own personal and social responsibilities make the lives of themselves, the other members of the society as well as their environments a menace (Çiftçi, 2001). Responsibility starts to arise in the individual with the attitude and skills attained in the family in their childhoods and could only be learnt by living. Attaining someone responsibility is a mental response other than a verbal informing. In other words, it is more important "how to attain" a responsible act than "what it is" (Özen, 2009).

It was observed that responsibility showed a close relationship with variables such as academic success and focus of control and those individuals who are responsible were found to be more internally controlled and more academically successful (Golzar, 2006; Kumchy & Sayer, 1980; Önal, 2005; Taylı, 2006). Sense of responsibility is important for social relations in official contexts. Moreover, provides important implications for motivation and self-regulation in addition to fulfilling professional obligations (Higgins, Roney, Crowe, & Hymes, 1994).

In terms of educational context, the sense of responsibility of a teacher is related with positive attitudes towards teaching and professional commitment, positive effect on teaching, the readiness of the teacher towards applying teaching practices and student success (Gusley, 1988; Halvorsen, Lee & Andrade, 2009; Lee & Smith, 1997; Winter, Brenner and Petroskı, 2006). The sense of responsibility of the teacher is explained theoretically in five basic points by Lauermann and Karabenick (2013) as:

1. Student motivation (interest, enthusiasm and the value of the subject being thought),
2. Student success (learning, performance, providing academic improvement),
3. Self-confidence of the students (increasing self-confidence of the students towards their own performances),
4. Relations with the students (building up trust towards teachers, making them feel that they could ask for help for their problems and teachers' making the students feel that they care for them),
5. Quality of teaching (teacher's making the courses as interesting and effective as possible).

Most of the success or failure of teachers in the teaching-learning process is closely related with how they reflect their roles and responsibilities. Teacher is the primary responsible person for the teaching affair and the responsibility perception that the teachers develops in students is of great importance. However, what the students need to know and how these will be attained to them are also very important. Determining what is going to be learnt also requires determining the teaching job. Fast changes and developments in the last century also changed what is going to be taught and caused many new subjects to enter in the curricula. In this respect what is discussed intensively is the precautions to be taken to secure and sustain values, the importance of the role of values education in this process and the regulations to be made in the curricula applied in all levels of education depending on to the loss of values in the society.

As known, values education that starts in the family turns into a more systematic process at schools. School helps the students to gain the local values of the society they live in as well as the universal values (Akkiprik, 2007). Therefore, schools and teachers have important roles in the values education processes and teachers are seen as the conveyer of educational and ethical values. However, most teachers tend to support their students in terms of gaining them academic content instead of allocating time to discuss values subjects (Frydaki & Mamoura, 2008). Also, the ethical issues are almost never considered explicitly in teacher training programs and not reflected in them (Pantic & Wubbels, 2012). But what is important is that even if arrangements are made in this context it is depends on the teachers to what extent they will reflect these gains to their beliefs, to what degree they will practice them and how much responsibility they will develop in this aspect (Beijaar, Day, Assuncao Flores & Viana, 2007; Fives & Buehl, 2008).

The aim of this research was to develop a measurement tool covering the required psychometric qualities that could serve for determining the values teaching responsibility perceptions of prospective teachers who were supposed to have a vital role in the process of values education. When the literature on this subject was searched, not any scale development study was come across. In this respect, it was assumed that developing a measurement tool could enrich the related literature as well as would provide a basis for the upcoming studies in this direction.

2. Method

2.1. Research design

This descriptive study utilizing survey model aimed to develop a measurement tool that would determine the values teaching responsibility perceptions of prospective teachers.

2.2. Study group

The study population of the study consisted of 6435 prospective teachers studying in different grades and departments of Gazi University, Gazi Faculty of Education in 2018-2019 academic year Autumn semester. As for the difficulty of reaching the whole population, sample was taken. 5 out of 24 departments were randomly chosen and taken into account. The sample of the study was 626 prospective teachers, 484 of whom were female and 142 of whom were male and voluntarily participated in the study. While determining the study group, purposeful sampling method was used as voluntarily participating and easily accessing was taken into account (Yıldırım & Şimşek, 2011).

Reference values in the literature on the subject were taken into account while determining the number of the prospective teachers to be included in the study sample. It is seen in the literature that as sample size; 100 sample is weak, 200 is intermediate, 300 is good, 500 is very good and 1000 is excellent (Kline, 2005; Tabachnick ve Fidell, 2007; Field, 2013).

2.3. Scale development process

Literature on scale development was followed in developing the scale (Crocker & Algina, 1986; DeVellis, 2014; Seçer, 2015; Tezbaşaran, 2008;). In order to create the item pool first a literature review was conducted and studies on the subject context were investigated. Additionally, views of prospective teachers were asked and the 46 item pool prepared with these opinions from a group of five experts were taken. Some items were reorganized according to the feedback from the experts. Choice Scala of the scale was organized as “I strongly agree”, “I agree”, “I partially agree”, “I disagree” and “I strongly disagree". Exploratory factor analysis and reliability analyses of the scale were conducted over the views of 274 prospective teachers whereas confirmatory factor analysis was made over the views of 372 prospective teachers. SPSS and LISREL programs were used in the analysis of the data.

The convenience of the data set should be controlled in order for applying factor analysis to the data set obtained from 274 prospective teachers. This was determined by applying Kaiser-Meyer-Olkin (KMO) test and Barlett Sphericity test. As Kaiser-Meyer-Olkin (KMO) value was convenient and the result of the Barlett test was meaningful factor analysis could be applied and that the data set showed normal distribution, varimax rotation was conducted to clarify the factors. 11 scale items were excluded as they did not comply with the criteria as a result of the exploratory factor analysis. The final scale consisted of four sub-dimensions and 35 items. In order to test whether this scale structure could be validated or not, the final scale form was applied to a 352 different prospective teachers and confirmatory factor analysis was conducted. The values obtained from the confirmatory factor analysis (CFA) conducted in order to

determine whether the scale's construct was validated or not was tested according to the adaptive values accepted in the literature.

For the reliability of the scale, Cronbach Alpha reliability coefficient and total item correlation in order to detect the contribution of all items to the whole scale were investigated. Moreover, independent samples t-test was performed in order to determine the significance of the difference between the high-low 27% groups' average scores as well as Spearman-Brown internal consistency coefficient was calculated for the two equal halves of the scale.

3. Results

3.1. Results related to the validity of the scale

Findings on the exploratory analysis applied for construct validity are given below.

3.1.1. Exploratory factor analysis

Exploratory Factor Analysis (EFA) is a statistical technique which is widely used for making a large number of variables related with each other into a couple of meaningful and independent factors.

In order to establish whether the data structure was appropriate for factor analysis the conducted Kaiser-Meyer-Olkin (KMO) value was found as .96 and Barlett Sphericity value was found as [X2 = 6639,109 ; p<.001].

It can be stated that Kaiser-Meyer-Olkin (KMO) value is over 0.91 which is accepted as ideal in literature. Bartlett's Test of Sphericity is the test of whether the variance covariance matris is proportional with the specified matris. The result of the analysis is expected to be meaningful. The meaningful result of the meaningfulness value shows that the factor analysis could be conducted and the data set has multi variable normal distribution. It was observed that value obtained for the scale is meaningful (Büyüköztürk, 2013; Field, 2013; Özdamar, 2013; Tabachnick & Fidell, 2007).

In order to determine the sub-factors of the scale varimax rotation method was used. As whether the sub-dimensions to be originated are not known, firstly axis rotation was made with "varimax" method. However, when determined that the sub-dimensions are related with each other rotation method was actualized with "direct oblimin" method (Özdamar, 2013). After the varimax rotation a scale structure composed of 4 sub-dimensions eigenvalue of which is higher than 1 was determined. The specified four dimensions explain 61.46% of the total variance. In social sciences it is convenient if this value is between 40% and 60% (Tavşancıl, 2014).

In figure 1 Scree Plot formed according to the eigenvalues the sub-dimensions took is given.

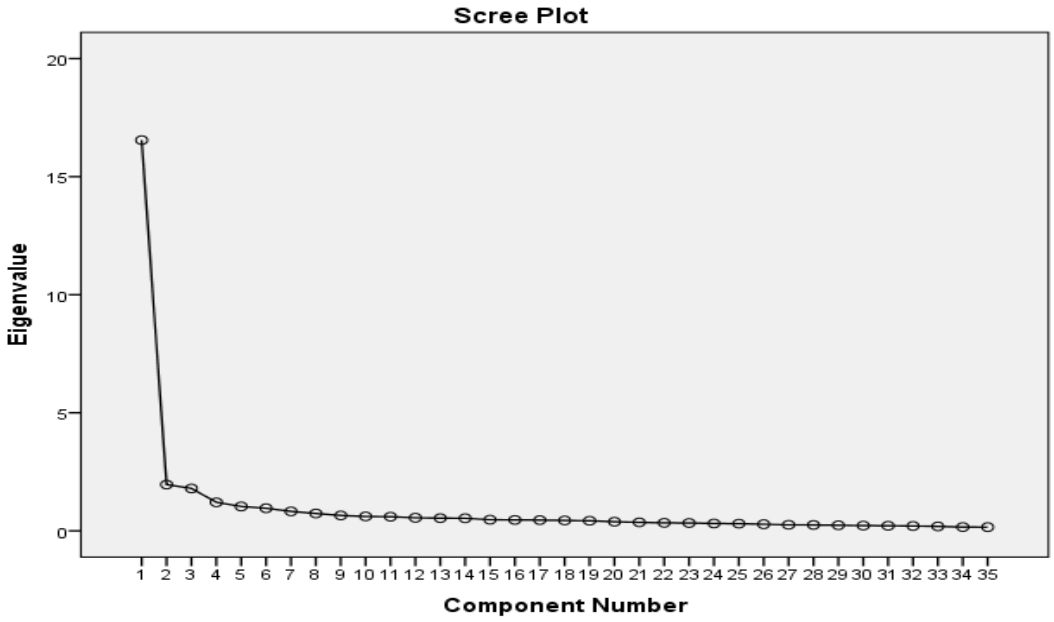

Figure 1. Scale eigenvalue factor graphic

Values with regard to Exploratory Factor Analysis (EFA) related to scale are given in Table 1:

Table 1. Exploratory factor analysis results for the values teaching responsibility perception scale

FACTORS	Factor Loads	Eigenvalue	Factor Explained Variance %
Factor 1: Individual Effort in Values teaching		7,123	20,351
37. Even if I make mistakes in values teaching I do my best to correct it.	,787		
41. I become happy when I see that I perform my responsibilities in values teaching.	,734		
40. I could make self-sacrifice in values teaching.	,710		
38. I wonder what kind of a role I will have in attaining my students values.	,681		
35. I am aware as a prospective teacher that I have an important mission in values teaching.	,646		
33. I am aware of the power of education in solution of the values based problems.	,633		
22. I do not allow my branch to limit me in values teaching.	,603		
42. I try to fulfill my duties in terms of values teaching at any cost.	,593		
36. I do not think that problems that I could encounter in values teaching would discourage me.	,572		
27. I wonder if a problematic behavior is a value based one.	,556		
34. All teachers are responsible for values teaching.	,549		
24. Even if it were not placed in the curricula I would still be interested in values teaching as a teacher.	,542		
23. I am aware that in order to be effective in values teaching I have to improve myself.	,521		
39.I weigh ideas of those around me about what I did about values teaching.	,519		
Factor 2: Disseminate-Support Values teaching		5,718	16,337
13. I want to hear about the new approaches in values teaching.	,714		
19. I want to make cooperation about values teaching.	,696		
20. I wonder about what could be done to make	,687		

awareness on values teaching.			
11. Even very little things done in values teaching is important for me.	,679		
15. I enjoy talking about and sharing the good practices on values teaching.	,647		
18. I like making awareness on values teaching on my friends.	,640		
6. I like mentioning the beauty of life based on values.	,543		
12. I support value-laden behaviors in all environments.	,520		
16. All teachers regardless of their branches should act on behalf of protecting and sustaining values.	,714		
Factor 3: Sustaining values teaching		5,228	14,938
3. I act in the belief that values should be sustained.	,767		
7. The belief that values could disappear discomforts me very much.	,665		
2. I feel uncomfortable with not emphasizing the values even though they are appropriate.	,639		
4. I take it as a duty to support value-based studies.	,767		
14. I feel uncomfortable with ignoring the values that should be emphasized in the planning of the teaching process.	,665		
8. I believe there is always something to do to keep values alive.	,639		
1. Every teacher-prospective teacher is a value ambassador in value teaching.	,603		
10. I enjoy bringing good examples to the classroom for value teaching purposes.	,580		
Factor 4: Openness to Development in Value Teaching		3,441	9,832
29. I follow new publications on value teaching.	,829		
25. I would not postpone learning what I should know about value teaching.	,716		
31. As I see my shortcomings in value teaching, I try to complement it quickly.	,652		
17. I follow the activities about value teaching.	,626		
Scale Total			61,458

3.1.2. Confirmatory factor analysis

In order for determining whether the scale construct generated from the exploratory factor analysis, confirmatory factor analysis (DFA) has been performed. At the end of the confirmatory factor analysis, the obtained values were evaluated in the context of the model fit indices commonly used in the literature (Brown, 2015; Kline, 2016). Model fit values related to the model are determined as RMSEA, .066; χ2/df=2.4; SRMR=.05; IFI=.90; CFI=.90. For model fit indices, while testing the consistency with the model and the data, some of the tests of fit indexes as well as all could be preferred to be used (Schumacker, 2006). Values generally looked for model fit are X2 / df , GFI, CFI, IFI, SRMR and RMSEA values.

The obtained values are interpreted by comparing the model fit indices in Table 2 (Çokluk, Sekercioglu, & Buyukozturk, 2010; Kline,2016; Raykov & Marcoulides,2006; Schumacker & Lomax, 2004; Seçer, 2015; Şimsek, 2007).

Table 2. Model fit reference values for values teaching responsibility perception scale

Model Fit Measurements	Good Model Fit Indices	Acceptable Model Fit Indices	Model Fit Indices of the Current Model	Model Fit
Ki-Kare/sd	χ2/sd ≤ 2	χ2/sd ≤ 3	2.4	Acceptable
RMSEA	0.00<RMSEA<0.05	0.05<RMSA<0.10	0.064	Acceptable
SRMR	0.00<SRMR<0.05	0.05<SRMR<0.10	0.052	Acceptable
IFI	0.95<IFI<1.00	0.90<NFI<0.95	0.90	Acceptable
CFI	0.95<CFI<1.00	0.90<CFI<0.95	0.90	Acceptable

Table 2 shows the model fit values and predicted reference values for the scale. The main purpose of DFA is to determine the compatibility level of a previously defined model with the data obtained (Sümbüloğlu & Akdağ, 2009). When an evaluation is made in the context of reference values, it can be said that the values obtained related to the scale are within the acceptable fit value range and the current structure of the scale is confirmed.

3.2. Results related to the reliability of the scale

In order to obtain evidence about the reliability of the scale, the Cronbach alpha reliability coefficients related to the whole and sub-dimensions of the scale and the item test total correlation coefficients for each scale item were examined. In addition, the high-low 27% groups were subjected to the t-test for independent groups to determine the significance of the difference between the mean scores of the high-low groups. In addition to these analyzes, Spearman-Brown internal consistency coefficient was calculated for two equal halves of the scale and in addition, the correlation coefficients of the scale sub-dimensions with each other and with the overall scale were used to provide evidence for internal consistency. Results for calculations are given in tables 3 and 4.

Table 3. Results of the reliability analysis for values teaching responsibility perception scale

Factor -Item no	Item Total Correlation	High-Low 27% t	Cronbach Alfa Internal Consistency Coefficient
Factor I			,93
Item 37	,773	13,107***	
Item 41	,597	11,316***	
Item 40	,768	12,378***	
Item 38	,713	11,141***	
Item 35	,726	12,555***	
Item 33	,708	10,864***	
Item 22	,705	11,213***	
Item 42	,700	12,288***	
Item 36	,693	8,418***	
Item 27	,603	11,584***	
Item 34	,640	10,286***	
Item 24	,458	12,350***	
Item 23	,621	11,318***	
Item 39	,612	10,552***	
Factor II			,93
Item 13	,723	12,548***	
Item 19	,742	14,036***	
Item 20	,743	14,194**	
Item 11	,741	13,774***	
Item 15	,713	11,217***	
Item 18	,727	14,348***	
Item 6	,698	12,666***	
Item 12	,660	12,311***	

Item 16	,687	10,535***	
Factor III			,88
Item 3	,719	14,085***	
Item 7	,644	12,268***	
Item 2	,439	7,568***	
Item 4	,712	15,814***	
Item 14	,648	11,586***	
Item 8	,694	12,576***	
Item 1	,656	10,766***	
Item 10	,630	12,137***	
Factor IV			,84
Item 29	,471	8,718***	
Item 25	,591	11,213***	
Item 31	,700	13,354***	
Item 17	,564	10541***	
Scale Total			,97

***P<.001,

Table 3 presents the findings of the reliability analysis related to the scale. When the table is analyzed, it is observed that the Cronbach Alpha reliability coefficient values for the scale and its sub-dimensions ranged between .84 and .97, and the overall Cronbach Alpha reliability coefficient was .97. It is observed that the reliability coefficient obtained for the overall scale indicates a high degree of reliability in the range of $0.80 \leq \alpha < 1.00$, and the feature measured by the scale is homogeneous and all items in the scale measure the same feature. Moreover, it is observed that the total correlation coefficients calculated for the scale items ranged between 0.47-0.77. The fact that the item total correlation values are .30 and above are seen as an indication that the items exemplify

similar behaviors and the internal consistency of the test is high (Büyüköztürk, 2013; Özdamar, 2013; Tavsancıl, 2014). In addition, the t-test results between the scores of the high-low 27% groups differ in the significance level of P <.001 and it is observed that the Spearman-Brown internal consistency coefficient calculated for two equal halves of the scale has a very high value as "0.92"

Findings showing the correlation between overall and sub-factors of the scale are presented in table 4.

Table 4. Correlation values between the scale overall and sub-dimensions of value teaching responsibility perception scale

	Scale Overall	**Factor I**	**Factor II**	**Factor III**	**Factor IV**
Factor I	,926**	----------			
Factor II	,923**	,781**	----------		
Factor III	,885**	,726**	,799**	----------	
Factor IV	,734**	,603**	,626**	,564**	----------

**P<.01

When the correlation values in Table 4 are analyzed, it is observed that the correlation values for the scale overall and sub-factors are between 0.56 and 0.93 and have a medium and high level positive relationship at the level of α = 0.01 significance.

As a result, there are no negative items in the scale consisting of 35 items and 4 sub-dimensions. The highest score that can be obtained from the scale is 175 whereas the lowest is 35. The high score to be taken from the scale indicates the high perception of value teaching responsibility and the low score indicates the low perception of value teaching responsibility.

4. Discussion, Conclusions and Suggestions

With the purpose of developing a measurement tool determining prospective teachers' perceptions of value teaching responsibility, and considering the scale development stages, a 5-item Likert-type item pool with 46 items was formed, and it was arranged in line with the expert opinions and adapted to the application form. The scale form was first applied to a number of 247 prospective teachers and the obtained data set was applied explanatory factor analysis and reliability calculations. After explanatory factor analysis and reliability calculations, 11 items were excluded from the scale on the grounds that they did not meet the criteria. As a result, a scale structure consisting of 35 items and four factors was obtained. The four factors that were formed were named as "Individual Effort in Value Teaching", "Disseminating and Supporting Value Teaching", "Sustaining Value Teaching" and "Openness to Development in Value Teaching". Then, in order to test whether the scale structure formed was confirmed or not, confirmatory factor analysis was performed on the data set obtained from a separate group of 352 prospective teachers.

As a result of Explanatory Factor Analysis and reliability analysis; Kaiser-Meyer-Olkin (KMO) value is determined as .96 and Barlett Spehericity value as [X2 = 6639,109; p <.001]. It was also observed that the Cronbach Alpha reliability coefficient for the scale and its sub-dimensions ranged between .84 and .97 and the overall Cronbach Alpha reliability coefficient was .97.

In addition, it was seen that the t-test results conducted between the scores of the high-low 27% groups differed at the level of meaningful significance of P <.001, while the Spearman-Brown internal consistency coefficient calculated for two equal halves of the scale had a very high "0.92" value, and it was determined that they have medium and high positive correlations between 0.56 and 0.93 for each sub-factor and $\alpha = 0.01$ significance level.

Conformity values obtained as a result of confirmatory factor analysis are found as; RMSEA, .066; $\chi 2$ / df = 2,4; SRM = .05; IFI = .90; CFI = .90. It was observed that these obtained values were within the acceptable fit value range and the current structure of the scale was confirmed. It can be said that, as a result of all the analyzes regarding validity and reliability, the findings obtained regarding the scale provide sufficient evidence for whether the scale has the necessary psychometric properties and could be used for determining teachers' and prospective teachers' responsibility perceptions for values teaching.

The perceptions of individuals of the events they experienced responsibility by, there who they have loaded and what they attribute can be explained with the concept of locus of control. The responsibility of the events experienced by individuals, their perceptions of who they have loaded and what they attribute can be explained with the concept of locus of control. According to the theory; while individuals who are focused on internal audit believe that their will plays a decisive role in the emergence and development of the events they experience; individuals focused on external audit on the contrary, believe that their experiences (such as luck, bad luck, fate, other people, etc.) are caused by the influence of forces outside them (Solmuş, 2004).

As in every learning and teaching process, the responsibility of the teacher in value teaching will qualify every kind of teaching activity that the teacher will design and implement in this direction. For this reason, it is important for teachers to develop a sufficient level of self-responsibility and internal audit focus in order to be effective in the learning and teaching process.

In the literature, there was no study to develop a scale for determining prospective teachers' perceptions of value teaching responsibility. As a result of this study, a measurement tool with necessary psychometric properties has been developed that can be used at the university level to determine the pre-service teachers' perceptions of value teaching responsibility. However, in different studies, studies can be made to develop a measurement tool to identify different types of responsibility perceptions. Tool forms for measuring the perceptions of prospective teachers in a similar subject can be applied to a wider audience. In addition, studies involving the correlation of the findings obtained from the application of the scale form obtained in this research with different variables can be designed.

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