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The Teacher Professional Development Student Assessment Scale: A Tool for Principals

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Abstract

This research aims to develop a teacher professional development assessment scale based on the dynamic professional development approach. The resulting Teacher Professional Development Student Assessment Scale is a data collection tool consisting of 27 items under 7 factors and can explain 62.90% of the total variance. The items have a five-point Likert scale ranging from never (1) to always (5). The Cronbach alpha reliability coefficients of the factors range from 0.66 to 0.83. The factor loads of the items ranged from 0.47 to 0.82. The construct validity of the scale was confirmed by confirmatory factor analysis. The criterion validity of the scale was tested using a parallel scale. The scale measures the teaching-related characteristics that can determine the professional development level of the teachers from all branches. It is concluded that the scale developed in this research can be used to assess teacher professional development according to student perceptions. School principals can use the scale to determine the professional development levels of teachers and can make necessary interventions to achieve better quality in teaching.

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Introduction

Teachers are affected by changes in education. Teachers, who came out of the position of the information transmitter, assumed the role of guiding the students. Teachers who are learner-centered, participatory, motivating and sensitive to individual differences have played a leading role in changing education (Schleicher, 2012). The role of the practitioner of change can be fulfilled by adapting the teachers to change. For this purpose, teachers should not be satisfied with the information at the time of graduation and they should be in an effort to learn continuously (Ceylan & Özdemir, 2016). This may be achieved through professional development (Seferoğlu, 2004; Yetim & Göktaş, 2004).

Professional development provides opportunities for teachers to renew themselves (Smith & Gillespie, 2007). Changing educational paradigms have begun to give importance to teachers' teaching skills and learning outcomes (Scheerens, 2010). It has been experimentally determined that professional development positively affects the success of the students by creating a change in the behavior of teachers in the classroom (Duffield, Wageman & Hodge, 2013). The most suitable environment in which teachers' professional development can be provided is the schools and classes where the teaching takes place (Postholm, 2012).

Since the classroom is a place where the teacher and the student interact, the teacher's practices in the classroom are the most influential factor in the learning of the students (Sanders, 1998; Wenglinsky, 2002; Wright, Horn & Sanders 1997). Students can learn better when professional development focuses on interventions to improve the teaching of teachers (Guskey, 1997; Heller, Daehler & Shinohara, 2003; Shaha et al., 2004). Because it is emphasized that teachers play an

important role in student achievement (Buchanan, 2012; Rushton, Morgan & Richard, 2007; Seidel & Shavelson, 2007). According to the results of a meta-analysis study that analyzed the findings of more than fifty thousand studies investigating the factors affecting student learning, it was determined that the most contributing factor was the teacher (Hattie, 2009). Therefore, professional development is more effective when it focuses on classroom teaching activities and differs according to teachers' developmental needs (Creemers, Kyriakides & Antoniou, 2013). Based on this fact, the dynamic professional development approach has been developed. According to this approach, the development needs of the teachers are determined and if the professional development, which is appropriate to the needs of each teacher, is offered, the teaching skills and learning outcomes of the teachers increase (Antoniou & Kyriakides, 2011). The dynamic professional development approach applied in developed countries enables teachers to demonstrate effective behavior and increase student achievement (Antoniou & Kyriakides, 2011).

The professional development of teachers in Turkey, based on the mere transfer of information, away from the practice, does not monitor and evaluate effective teacher behavior (Budak & Demirel, 2003; Bümen et al., 2012). These activities, which are mostly compressed at the beginning and end of the academic year, are traditional lessons that consist of a fixed theoretical content that is defined without any teacher's need for improvement (Bümen et al., 2012).

School administrators play a vital role in the professional development of teachers (Glanz & Neville 1997; Hallinger & Heck 1996; Sheppard, 1996). The establishment of a professional learning culture for teachers was listed among the duties of administrators

(Fullan, 2006). Administrators should establish the appropriate school culture to develop teachers 'knowledge and skills (Elmore, 2000) and support teachers' professional development (Usdan, 2000). In this respect, the role of administrators is to align organizational features with professional development (Clement & Vandenberghe, 2001). Teachers should consider their administrators as professional development experts and should expect the necessary support, information, and resources from administrators (Payne & Wolfson, 2000). However, school administrators cannot support teachers' professional development with their guidance (Çalık & Şehitoğlu, 2006; Ekinci, 2010). Because what administrators need to do in this regard is not determined in concrete steps. The dynamic approach can provide administrators with concrete steps and tools that they can implement. These steps and tools can be introduced to them through short-term training. Thus, barriers to the contribution of school administrators to teacher professional development can be removed. Therefore, it is important to develop a teacher professional development assessment scale that takes the dynamic approach as a basis. This research aims to develop the Teacher Professional Development Student Assessment Scale for the use of school principals.

Theoretical Approaches to The Teacher Professional Development

The Competency Approach

The competency approach that emerged in the 1970s is based on the determination of the competencies of the teachers and the acquisition of these competencies by the teachers. This approach is also called as the performance-based approach (Creemers, Kyriakides, & Antoniou, 2013). In order for the teacher to give an effective education

in the classroom, all behaviors (questioning, homework control, etc.) that must be fulfilled have been revealed by research. When the teacher's classroom behaviors were divided into two categories as teaching and classroom management, it was discovered that teaching-related activities were directly influential in student learning (Creemers, Kyriakides, & Antoniou, 2013). Therefore, it can be said that gaining the competencies that affect learning is the basic principle of this approach.

The steps to be taken in this approach are as follows: Program requirements are determined considering the practices of effective teachers, requirements are expressed as competencies (education and evaluation are closely related to competencies) and student progress is determined by evaluating competencies (Creemers, Kyriakides, & Antoniou, 2013, p. 18). Competencies must be measurable for monitoring and evaluation. Competencies, in the simplest terms, are what the teacher should know and do (Libman & Zuzovsky, 2006). It is also possible to differentiate the tools that need to be known and the results that need to be done (Chyung, Stepich, & Cox, 2006). In education systems where competencies are also called as teacher qualifications, if performance standards are clearly identified and followed, it is assumed that the quality of teaching and student performance will increase (Delandshere & Arens, 2001). In many developed countries, the standards-based education system has become widespread in line with this assumption.

This approach has become widespread in areas ranging from teacher education to professional development in the world, as teachers are expected to gain what they need to have and that teachers can be successful to the extent that they gain them. However, the competencies are too much to be taught and the difference of the

competency lists determined in each application is against this approach as a disadvantage (Gore & Morrison, 2001). The division of teaching into hundreds of small particles leads to the illusion that it is a technical job, not a professional profession, and thus the mechanical perception of teaching prevents teacher autonomy (Patrick, Forde, & McPhee, 2003), creativity (Bathmaker, 2000) and critical thinking (Creemers, Kyriakides, & Antoniou, 2013). Thus, rather than the most important aspects of education, the most measurable aspects of education are taken into account (Baines & Stanley, 2006; Delandshere & Arens, 2001). Moreover, there is no consensus as to what is meant as competence, ability or performance (Creemers, Kyriakides, & Antoniou, 2013). Because of these disadvantages, the holistic approach has emerged.

The Holistic Approach

The holistic approach emerged as a response to the competency approach that sees the teacher as a technician and was inspired by Dewey's reflective thought (Creemers, Kyriakides, & Antoniou, 2013). According to Dewey (1910, p. 6), reflective thought is "Active, persistent, and careful consideration of any belief or supposed form of knowledge in the light of the grounds that support it and the further conclusions to which it tends." Reflective thought was also defined as thinking about what we do (Schon, 1983) and thinking about solving a problem that confuses the mind (Loughran, 2002). It is influenced by cognitive developmentalists such as Erikson and Piaget, who suggest that meanings are structured from experience and that individuals are internally motivated to be competent (Creemers, Kyriakides, & Antoniou, 2013). Getting reflective thought into practice can be through the teachers who are capable of problem-solving and critical questioning, are self-monitoring, conduct experiments, and action

research (Cornford, 2002). Reflective thought helps effective teachers to improve themselves and their students (Jones, 2014).

In the holistic approach, it is recommended to use observation, analysis, interpretation and decision-making strategies, action research, case study, field experiences, ethnography and micro-teaching methods (Creemers, Kyriakides, & Antoniou, 2013). The holistic approach allows teachers to analyze and review their own practices, to see their strengths and weaknesses, and to prepare an action plan for them. It is assumed that teachers who know themselves, who can confront themselves, who consider the values underlying their teaching will develop professionally (Creemers, Kyriakides, & Antoniou, 2013). However, the fact that the holistic approach lacks a theoretical framework, that its content is not clear, and that there is not enough research on its effectiveness constitutes a gap between theory and practice (Cornford, 2002). These negative aspects have been tried to be solved with the dynamic approach.

The Dynamic Approach

The dynamic approach consists of a combination of both the competency and the holistic approach. The purpose of combining the two approaches is to take advantage of the approaches and eliminate their disadvantages. The competency approach includes a large number of teacher competencies, which are not all of which can be taught (Gore & Morrison, 2001). The dynamic approach focuses on teaching only the teacher behaviors that ensure that education is effective. The holistic approach emphasizes the reflection of the teachers by reviewing their own practices, preparing their personal action plans and ensuring their professional development (Cornford, 2002). Also, in the dynamic approach, teachers can prepare their own action plans by reflecting on the nature of their practice. The dynamic

approach did not fully accept the competency and holistic approaches but was inspired by them. According to the dynamic approach, it is necessary to meet the personal development needs of the individuals by differentiating both the competences and the reflections to the competencies. Because it is assumed that teachers are in different stages of development and that the professional development activity that suits a teacher may not fit the other (Creemers, Kyriakides, & Antoniou, 2013).

Based on the results of the research, eight factors that are effective at the classroom level have been determined in order to determine the developmental stages of teachers. These are orientation, configuration, questioning, teaching modeling, application, making the classroom a learning environment, management of time and assessment (Creemers, Kyriakides, & Antoniou, 2013). Orientation is that the teacher should inform the students about the objectives of the course, convince them that they need to learn the subject, encourage them to participate effectively, and make them find the lesson meaningful. The configuration is that the teacher starts the course with a review, presents the objectives of the course, presents the draft of the lesson to the students, informs the transition between the sections of the lesson, draws attention to the main ideas and summarizes the main points at the end of the course. Questioning is the teacher's directing various types of questions at the appropriate difficulty level for the students to participate in the class, allowing the students to take appropriate time, responding to the correct, inaccurate or incomplete student responses and providing feedback. Teaching modeling is to encourage students to solve problems and to develop new solutions. The application is that the teacher encourages students to practice what they have learned by setting them in small groups and giving

them homework. Making the classroom a learning environment means that keeping the students related to the course and establishing the order in the classroom by creating the rules. Management of time is the teacher's effective use of the maximum time frame to connect students to the course. Finally, the assessment is that the teacher uses the right techniques to get feedback on student learning, analyzes the data to determine student needs, announces the results to students and parents and evaluates their own practices.

Method

Research Design

The survey model was used to develop the assessment scale. The research consisted of two phases. In the first phase, an already existing scale was adapted into Turkish. The resulting factor structure was not adequate to use it, for it has too few factors that suit to the dynamic approach. The approach employs 8 factors, but the adapted scale had only 2. Therefore, in the second phase, a new assessment scale was developed on the basis of the dynamic professional development approach.

Data Collection

For all phases of the study, permissions were obtained from İzmir and Artvin Provincial Directorates of National Education. Permissions to use the data collection instruments which were not developed in this study were also obtained from developers. All the participants filled the forms voluntarily. The administrators of the schools were informed about the research during the preliminary interviews to appoint the most appropriate time for data collection.

The students were provided with one-to-one guidance when filling the forms.

Data Analysis

Before the analysis of the forms collected from the students, missing or incorrectly filled forms were eliminated. The statistical analysis of the data transferred to the computer environment was done by the R programming language. Then, it was determined whether the data had a normal distribution. To determine the factor structure of the student observation form adapted to Turkish in the Turkish sample, to determine the construct validity of the developed scale and to confirm that the scale can be used in similar samples regardless of the population, confirmatory factor analysis was performed using the maximum likelihood estimation. Reliability, construct validity and criterion validity analyses were made while developing the scale.

Phase 1: Adaptation of the Student Observation Form

The student observation form was developed by Creemers and Kyriakides (2008) based on the dynamic professional development approach. The form consists of 49 items in a five-point Likert type, ranging from never (1) to almost always (5) (see appendix 1). The purpose of developing the form is to measure the perceptions of secondary school students about their teachers' teaching activities in the classroom. The reliability and validity of the form were established by various studies (Creemers & Kyriakides, 2008; Kyriakides & Creemers, 2008; Panayiotou et al., 2014). The Cronbach alpha reliability coefficients of the 8 factors were between α=0.67 and α=0.75. These factors explain 65% of the total variance.

A translation team has been established to adapt the original form from English to Turkish. This team consisted of 3 field experts, 2

Turkish language experts, and 4 English language experts. The form was first translated into Turkish by the English language experts one by one and then presented to the field and Turkish language experts. The translated items were scored by experts and the items with the highest score were brought together to obtain a new form. This form was then translated back into English by the English language experts who were not included in the first translation. The resulting form was compared to the original form. As a result of the comparison, the translations were repeated for items with significant differences and the final version of the Turkish form was given.

Secondary school students studying in İzmir were selected through the two-stage random sampling technique (Fraenkel, Wallen, & Hyun, 2012). Among the secondary schools in İzmir, 6 public secondary schools were determined by the simple random sampling technique in the first stage. The schools had 6176 students and 1500 students were selected by simple random sampling technique in the second stage. As a total of 979 returning forms were analyzed. The sample consisted of 487 males and 492 females from grades 5 to 8.

To determine the factor structure of the student observation form in the Turkish sample, confirmatory factor analysis was performed using the maximum likelihood estimation. This analysis is a set of statistical techniques in which multiple relationships among independent and dependent variables are examined (Tabachnick & Fidell, 2013). In the interpretation of the analysis results, the statistical values called indexes that are χ^2/degree of freedom, RMSEA (root mean square error of approximation), NFI (normed fit index), CFI (comparative fit index), IFI (incremental fit index), RMR (root mean square residual), GFI (goodness of fit index), AGFI (adjusted goodness of fit index) are accepted as criteria (Schumacker & Lomax, 2010). The

index values of the student observation form, which were calculated by the confirmatory factor analysis, were compared with the ideal values stated in the literature (Schumacker & Lomax, 2010; Tabachnick & Fidell, 2013; Kline, 2011). As a result, an incompatible factor structure was determined (χ^2/df=3.30, RMSEA=0.59, NFI=0.60, CFI=0.68, IFI=0.69, RMR=0.13, GFI=0.77, AGFI=0.75).

Phase 2: Development of the Teacher Professional Development Student Assessment Scale

Since it was found out that the student observation form adapted to Turkish did not have sufficient psychometric properties, it was decided to develop a new form suitable for Turkish Culture. The aim of the scale is to get the opinions of the teachers of secondary and high school students about the teaching activities in the classroom. The items have a five-point Likert scale ranging from never (1) to always (5). The scale measures the teaching-related characteristics that can determine the professional development level of the teachers from all branches.

In order to create a pool of items, the theoretical framework subject to measurement should be established. The theoretical framework of the dynamic approach was used in creating the item pool of the scale. 39 items were written according to 8 factors affecting learning. The items were presented to 3 experts from the field of education management. When 7 items were eliminated due to lack of expert agreement, 32 items remained in the draft scale. Four of the items must be reverse-coded during the analysis (see appendix 2).

For the development of the Student Professional Development Student Assessment Scale, the proposed steps in the literature were followed (Oppenheim, 1992). The steps to be followed in the development of measurement instruments are similar to each other in

the literature (Cohen & Swerdlik, 2009; DeVellis, 2012; Saris & Gallhofer, 2014): 1) Identifying the need and purpose, 2) creation of a pool of items, 3) getting expert opinion, 4) pilot applications, 5) initial analysis, 6) determination of sample and application, 7) final analysis of factor structure.

In the step of identifying the need and purpose, issues such as the need for the development of the scale, its purpose and the content of the scale have been clarified by answering the questions suggested by Cohen and Swerdlik (2009, pp. 250-251). These questions and answers are as follows:

1) What will the instrument be designed to measure?

The scale is designed to determine the quality of classroom teaching given by teachers based on student perceptions.

2) What is the purpose of using the instrument?

It is aimed to determine the professional development needs of teachers with the scale. The level of professional development of the teachers will be determined and the necessary interventions will be made in order to reach higher levels.

3) Is there a need to develop the instrument?

For this purpose, it was understood that the scale of student observation scale previously developed by Creemers and Kyriakides (2008) was not suitable for use in Turkey.

4) Who will use the instrument?

School principals will use the scale to determine the professional development needs of teachers.

5) Who will answer the instrument?

The scale will be answered by middle and high school students.

6) What content will the instrument have?

The scale consists of items determined according to the factors on which the dynamic approach is based.

7) How will the instrument be implemented?

The scale will be answered by the students at certain times of the academic year.

8) What is the ideal scale of the instrument?

The scale consists of items graded in a Likert type which measures the frequency of classroom behaviors of teachers.

9) Do I need to develop more than one form?

There is no need to develop parallel forms. This is because the scale measures the teaching behaviors that can determine the professional development level of the teacher from any branch.

10) What kind of special training will be required for the application and interpretation of the instrument's users?

Application and interpretation of the scale do not require any expertise.

11) Who will benefit the implementation of the instrument?

As the implementation of the scale is aimed at increasing the quality of the teachers and thus better learning of the students, and ultimately gaining a better-educated society and contributing to the development of the country, the implementation of the scale can benefit the whole society.

12) Are there any possible damages from the implementation of the instrument?

Measures will be taken to protect confidentiality during the implementation of the scale. Students' credentials will not be collected,

and the data obtained about the teachers will be shared with the teachers only.

13) How will the scores obtained by the instrument be understood?

The scores obtained with the scale will be used to interpret the professional development level of the teachers. Points will be meaningful according to the means determined by the dynamic approach.

For the first pilot application, a draft form distributed to all students in a secondary school and a high school determined to be randomly selected from Artvin province. The number of participants in the first pilot application was 311. For the second pilot application, the draft form distributed to all students in a secondary school and a high school determined to be randomly selected again in the same province. The number of participants reached was 256 in the second pilot application.

After the pilot applications, it is necessary to determine whether the items are compatible with the scale and to eliminate the incompatible items (Seçer, 2015). When the data obtained from the first pilot application were analyzed, item-total correlations higher than r = 0.35 were found except in 2 items. When the item-total correlations were examined after the last pilot application, item-total correlations higher than r = 0.35 were found in all items except 3 items. These 5 items were dropped from the final form.

A Two-stage random sampling technique was applied to form a sample (Fraenkel, Wallen, & Hyun, 2012). In 3 middle schools and 3 high schools determined by simple random sampling technique from Artvin province, there were 2315 students. Forms were distributed to 1000 students determined by simple random sampling technique. In

total, 832 forms were analyzed. The sample consisted of 340 males and 492 females from grades 5 to 12.

Since the items of the form were written according to the 8 factors which constitute the theoretical basis of the dynamic approach, the factor model was constructed according to these factors and the fit of the model was tested with CFA. When the scales are developed according to a certain theoretical background, it is recommended that the CFA be done instead of EFA (Kline, 2011; Suhr, 2006). The values of the fit indices indicate that the model is compatible (χ^2/df=2.39, RMSEA=0.05, NFI=0.90, CFI=0.93, IFI=0.93, SRMR=0.04, GFI=0.92, AGFI=0.90). In the confirmatory factor analysis, AVE (average variance extracted) value is examined for structure validity (Hair et al., 2010). Since AVE is a very strict criterion, it is sufficient to have a value of 0.50 and above (Malhotra & Dash, 2011). The final factor structure is presented in Table 1. The final structure consisted of 7 factors and 27 items (see appendix 3).

Table 1.

The Factor Structure of the Teacher Professional Development Student Assessment Scale

Factors	**Items**	**Factor Loadings**	**α**	**Variance %**	**AVE**
Orientation	4	.71-.78	.83	15.00	78
Configuration	5	.56-.67	.77	11.00	69
Questioning	4	.47-.77	.76	8.77	.58
Teaching modeling	3	.70-.76	.79	7.89	.63
Application	3	.58-.82	.70	7.48	.64
Learning environment	4	.50-.61	.66	6.42	.52
Assessment	4	.47-.70	.70	6.31	.60
Total	27	.47-.82	.93	62.90	

A validity scale was used to test the criterion validity of the Teacher Professional Development Student Assessment Scale. In Student Evaluations of Educational Quality scale developed by Marsh (1982, 1987) and adapted to Turkish by Özgüngör (2013), 11 items were used related to educational quality. The first four items belong to "Learning and Academic Benefit", the other four belong to "Classroom Interaction" and the last three belong to "Assessment" factors. The correlations between total points and scale factors (F1-F7) and between total points and validity scale factors (O1-O3) were significant and high ($r>0.70$, $p<0.001$).

Table 2.

Correlations Between Factors

	F1	F2	F3	F4	F5	F6	F7	Total	O1	O2
F2	.69**									
F3	.67**	.63**								
F4	.66**	.64**	.66**							
F5	.63**	.65**	.61**	.64**						
F6	.51**	.49**	.52**	.51**	.47**					
F7	.57**	.61**	.55**	.52**	.60**	.42**				
Total	.85**	.85**	.82**	.81**	.81**	.69**	.77**			
O1	.62**	.58**	.59**	.60**	.55**	.49**	.48**	.69**		
O2	.65**	.59**	.62**	.63**	.55**	.50**	.53**	.73**	.71**	
O3	.66**	.61**	.62**	.60**	.55**	.50**	.50**	.72**	.70**	.75**

**:p<.001

In order to confirm the factor structure of the developed scale in a different sample, the secondary school and high school students studying in İzmir were selected. Data were collected from the students who were volunteered in a secondary school and a high school. A total of 327 students participated. The index values calculated by the confirmatory factor analysis were compared with the ideal values stated in the literature (Schumacker & Lomax, 2010; Tabachnick & Fidell, 2013; Kline, 2011). As a result, an acceptable factor structure was determined (χ^2/df=1.76, RMSEA=0.04, NFI=0.98, CFI=0.99, IFI=0.99, SRMR=0.03, GFI=0.89, AGFI=0.87).

Conclusion

The Teacher Professional Development Student Assessment Scale is a data collection tool consisting of 27 items under 7 factors and can explain 62.90% of total Hens. The items have a five-point Likert scale ranging from never (1) to always (5). The Cronbach alpha

reliability coefficients of the factors range from 0.66 to 0.83. The factor loads of the items ranged from 0.47 to 0.82. The construct validity of the scale was confirmed by confirmatory factor analysis. The criterion validity of the scale was tested using a parallel scale. The scale measures the teaching-related characteristics that can determine the professional development level of the teachers from all branches. The scale is based on the dynamic professional development approach. The 7 factors are aligned with this approach. However, the scale cannot measure the time management factor. This is due to the items designated in that factor cannot capture student perceptions related to time management or maybe students cannot observe time-related activities of teachers. Future studies should try to focus on developing tools that can measure teachers' management of time. In conclusion, the scale developed in this research can be used to assess teacher professional development according to student perceptions. School principals can use the scale to determine the professional development levels of teachers and can make necessary interventions to achieve better quality in teaching.

References

Antoniou, P., & Kyriakides, L. (2011). The impact of a dynamic approach to professional development on teacher instruction and student learning: Results from an experimental study. *School Effectiveness and School Improvement*, *22*(3), 291-311.

Baines, L. A., & Stanley, G. K. (2006). The iatrogenic consequences of standards-based education. *Clearing House: A Journal of Educational Strategies, Issues and Ideas, 79*(3), 119-123.

Bathmaker, A. (2000). Standardising teaching: The introduction of the national standards for teaching and supporting learning in further

education in England and Wales. *Journal of In-Service Education, 26*(1), 9-23.

Buchanan, J. (2012). Improving the quality of teaching and learning: A teacher-as-learner centred approach. *International Journal of Learning, 18*(10), 345-356.

Budak, Y., & Demirel, Ö. (2003). Öğretmenlerin hizmetiçi eğitim ihtiyacı. *Kuram ve Uygulamada Eğitim Yönetimi, 33*, 62-81.

Bümen, N. T., Ateş, A., Çakar, E., Ural, G., & Acar, V. (2012). Türkiye bağlamında öğretmenlerin mesleki gelişimi: Sorunlar ve öneriler. *Milli Eğitim, 194*, 31-50.

Ceylan, M., & Özdemir, S. M. (2016). Türkiye ve İngiltere'deki öğretmenlerin sürekli mesleki gelişime ilişkin görüşlerinin ve katılım durumlarının incelenmesi. *Kırıkkale Üniversitesi Sosyal Bilimler Dergisi, 6*(1), 397-417.

Chyung, S. Y., Stepich, D., & Cox, D. (2006). Building a competency-based curriculum architecture to educate 21st-century business practitioner. *Journal of Education for Business, 81*(6), 307-314.

Clement, M., & Vandenberghe, R. (2001). How school leaders can promote teachers' professional development: An account from the field. *School Leadership & Management, 21*(1), 43-57. doi: 10.1080/13632430120033036

Cohen, R. J., & Swerdlik, M. (2009). *Psychological testing and assessment: An introduction to tests and measurement (7th ed.).* New York: McGraw-Hill.

Cornford, I. R. (2002). Reflective teaching: Empirical research findings and some implications for teacher education. *Journal of Vocational Education & Training, 54*, 219-236.

Creemers, B., & Kyriakides, L. (2008). *The dynamics of educational effectiveness: A contribution to policy, practice and theory in contemporary schools.* New York: Routledge.

Creemers, B., Kyriakides, L., & Antoniou, P. (2013). *Teacher professional development for improving quality of teaching.* Dordrecht: Springer.

Çalık, C., & Şehitoğlu, E. T. (2006). Okul müdürlerinin insan kaynakları yönetimi işlevlerini yerine getirebilme yeterlikleri. *Milli Eğitim Dergisi, 170,* 94-111.

Delandshere, G., & Arens, S. A. (2001). Representations of teaching and standards-based reform: Are we closing the debate about teacher education. *Teaching and Teacher Education, 17*(5), 547-566.

DeVellis, R. F. (2012). *Scale development: Theory and applications (3rd ed.).* Los Angeles: Sage.

Dewey, J. (1910). *How we think.* Boston: DC Health & Co.

Duffield, S., Wageman, J., & Hodge, A. (2013). Examining how professional development impacted teachers and students of U.S. history courses. *The Journal of Social Studies Research, 37*(2), 85-96.

Ekinci, A. (2010). Aday öğretmenlerin iş başında yetiştirilmesinde okul müdürlerinin rolü. *Dicle Üniversitesi Ziya Gökalp Eğitim Fakültesi Dergisi, 15*, 63-77.

Elmore, R. (2000). *Building a new structure for school leadership.* Washington, DC: Albert Shanker Institute.

Fraenkel, J. R., Wallen, N., & Hyun, H. (2012). *How to design and evaluate research in education (8th ed.).* New York: McGraw-Hill.

Fullan, M. (2006). *Leading in a culture of change*. Retrieved from http://www.michaelfullan.ca/ resourceassets/ Keynote2006.pdf,1-30, 20.07.2011: 11:40.

Glanz, J., & Neville, R. F. (1997). *Educational supervision: Perspectives, issues and controversies.* Norwood: Christopher-Gordon.

Gore, J. G., & Morrison, K. A. (2001). The perpetuation of a (semi-)profession: Challenges in the governance of teacher education. *Teaching and Teacher Education, 17*(5), 567-582.

Guskey, T. R. (1997). Research needs to link professional development and student learning. *Journal of Staff Development, 18*(2), 36-40.

Hair, J., Black, W., Babin, B., & Anderson, R. (2010). *Multivariate data analysis (7th ed.).* Upper Saddle River: Prentice-Hall.

Hallinger, P., & Heck, R. H. (1996). Reassessing the principal's role in school effectiveness: A review of empirical research 1980–1995. *Educational Administration Quarterly, 32*(1), 5-44.

Hattie, J. (2009). *Visible learning: A synthesis of over 800 meta-analyses relating to achievement.* New York: Routledge.

Heller, J. I., Daehler, K. R., & Shinohara, M. (2003). Connecting all the pieces. *Journal of Staff Development, 24*(3), 36-41.

Jones, M. (2014). Reflective practice in the online space. In M. Jones and J. Ryan (Eds), *Successful teacher education: Partnerships, reflective practice and the place of technology* (pp. 153-173). Rotterdam: Sense.

Kline, R. B. (2011). *Principles and practice of structural equation modeling (3rd ed.).* New York: The Guilford Press.

Kyriakides, L., & Creemers, B. P. (2008). Using a multidimensional approach to measure the impact of classroom-level factors upon student achievement: A study testing the validity of the dynamic model. *School Effectiveness and School Improvement: An International Journal of Research, Policy and Practice, 19*(2), 183-205.

Libman, Z., & Zuzovsky, R. (2006). Standards of teaching and teaching tests: Is this the right way to go? *Studies in Educational Evaluations, 32*(1), 37-52.

Loughran, J. (2002). Effective reflective practice: in search of meaning in learning about teaching. *Journal of Teacher Education, 53*(1), 33-43.

Malhotra, N., & Dash, S. (2011). *Marketing research: An applied orientation (6th ed.).* New Delhi: Pearson Education.

Marsh, H. W. (1982). Validity of students' evaluations of college teaching: A multitrait-multimethod analysis. *Journal of Educational Psychology, 74*, 264-279.

Marsh, H. W. (1987). Students' evaluation of university teaching: Research findings, methodological issues, and directions for future research. *International Journal of Educational Research, 11*, 253-388.

Oppenheim, A. N. (1992). *Questionnaire design, interviewing and attitude measurement.* London: Continuum.

Özgüngör, S. (2013). Eğitim süreci öğrenci değerlendirmeleri ölçeği'nin Türkçeye uyarlama çalışması ve etkili öğretim elemanlarını tanımlayan alt boyutların belirlenmesi. *Eğitim ve Bilim, 38*(170), 79-94.

Panayiotou, A., Kyriakides, L., Creemers, B. P., McMahon, L., Vanlaar, G., Pfeifer, M., & Bren, M. (2014). Teacher behavior and student outcomes: Results of a European study. *Educational Assessment, Evaluation and Accountability, 26*(1), 73-93.

Patrick, F., Forde, C., & McPhee, A. (2003). Challenging the 'new professionalism': From managerialism to pedagogy? *Journal of In-service Education, 29*(2), 237-254.

Payne, D., & Wolfson, T. (2000). Teacher professional development-the principal's critical role. *NASSP Bulletin, 84*(618), 13-21. doi: 10.1177/019263650008461803

Postholm, M. B. (2012). Teachers' professional development: A theoretical review. *Educational Research, 54*(4), 405-429.

Rushton, S., Morgan, J., & Richard, M. (2007). Teacher's Myers-Briggs personality profiles: Identifying effective teacher personality traits. *Teaching and Teacher Education, 23*, 432-441.

Sanders, W. L. (1998). Value-added assessment. *School Administrator, 55*(11), 24.

Saris, W. E., & Gallhofer, I. N. (2014). *Design, evaluation, and analysis of questionnaires for survey research.* Hoboken: Wiley.

Scheerens, J. (2010). *Teachers' professional development: Europe in international comparison.* Luxembourg: Office for Official Publications of the European Union.

Schleicher, A. (2012). *Preparing teachers and developing school leaders for the 21st century: Lesson from around the world.* Paris: OECD Publishing.

Schon, D. A. (1983). *The reflective practitioner: How professionals think in action.* New York: Basic Books.

Schumacker, R. E., & Lomax, R. G. (2010). *A beginner's guide to structural equation modeling (3rd ed.).* New York: Routledge.

Seçer, İ. (2015). *Psikolojik test geliştirme ve uyarlama süreci: SPSS ve LISREL uygulamaları.* Ankara: Anı.

Seferoğlu, S. S. (2004). Öğretmen yeterlilikleri ve mesleki gelişim. *Bilim ve Aklın Aydınlığında Eğitim, 58*, 40-45.

Seidel, T., & Shavelson, R. (2007). Teaching effectiveness research in the past decade: The role of theory and research design in disentangling meta-analysis results. *Review of Educational Research, 77*, 454-499.

Shaha, S. H., Lewis, V. K., O'Donnell, T. J., & Brown, D. H. (2004). Evaluating professional development: An approach to verifying program impact on teachers and students. *The Journal of Research in Professional Learning*, 1-18.

Sheppard, B. (1996). Exploring the transformational nature of instructional leadership. *The Alberta Journal of Educational Research, 42*(4), 325-344.

Smith, C., & Gillespie, M. (2007). Research on professional development and teacher change: Implications for adult basic education. *Review of adult learning and literacy, 7*(7), 205-244.

Suhr, D. D. (2006). *Exploratory or confirmatory factor analysis?* Cary: SAS Institute.

Tabachnick, B. G., & Fidell, L. S. (2013). *Using multivariate statistics (6th ed.).* Upper Saddle River: Pearson.

Usdan, M. (2000). Leadership for student learning: Reinventing the principalship. *Institute for Educational Leadership, National Pres Club, 12,* 1-24.

Wenglinsky, H. (2002). How schools matter: The link between teacher classroom practices and student academic performance. *Education Policy Analysis Archives, 10*(12), 1-28.

Wright, S. P., Horn, S. P., & Sanders, W. L. (1997). Teacher and classroom context effects on student achievement: Implications for teacher evaluation. *Journal of Personnel Evaluation in Education, 11,* 57-67.

Yetim, A. A., & Göktaş, Z. (2004). Öğretmenin mesleki ve kişisel nitelikleri. *Kastamonu Eğitim Dergisi, 12*(2), 541-550.

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APPENDIX 1.

The Student Observation Form developed by Creemers and Kyriakides (2008)

After each statement, there are five numbers. Think carefully and put a circle around the number that most fits your opinion: 1) this never happens in your class, 2) this rarely happens in your class, 3) this sometimes happens in your class, 4) this often happens in your class, 5) this almost always happens in your class.	
1	In Mathematics, we start the lesson with things that are easy to understand. As the lesson goes on, what we cover is more difficult.
2	The teacher gives us exercises at the beginning of the lesson to check what we have learnt from the previous lesson.
3	At the beginning of the lesson, the teacher starts with what we covered in the previous lessons.
4	My teacher helps us to understand how different activities (such as exercises, subject matter) during a lesson are related to each other.
5	A few days before the test, my teacher gives us similar exercises to those that will be in the test.
6	My teacher tells my parents how good I am compared to my classmates when they visit her/him (or in my school report).
7	When the teacher is teaching, I always know what part of the lesson (beginning, middle, end) we are in.
8	When doing an activity in Mathematics I know why I am doing it.
9	When we go over our homework, our teacher finds what we had problems with and helps us to overcome these difficulties.
10	Our teacher has good ways of explaining how the new things we are learning are related to things we already know.
11	At the end of each lesson, the teacher gives us exercises on what we have just been taught.
12	During the lesson our teacher often covers the same things that we have already been taught or done exercises in.
13	The teacher immediately comes to help me when I have problems doing an activity.
14	The teacher gives more exercises to some pupils than the rest of the class.
15	The teacher gives some pupils different exercises to do than the rest of the class.
16	The teacher gives all pupils the chance to take part in the lesson.
17	Our teacher encourages us to work together with our classmates during Mathematics lessons.

18	Some pupils in my classroom work together when our teacher asks us, but some pupils do not.
19	Our teacher makes us feel that we can ask her/him for help or advice if we need it.
20	Our teacher encourages us to ask questions if there is something that we do not understand during the lesson.
21	During the lesson, our teacher encourages and tells us that we are doing good work (i.e. she/he says to us 'well done').
22	When we are working in teams, our teacher encourages competition between teams (If you do not work in teams, please circle the number one).
23	In Mathematics lessons, some of my classmates hide their work and answers so that none of the other pupils can see it.
24	When a pupil gives a wrong answer the teacher helps her/him to understand her/his mistake and find the correct answer.
25	When the teacher asks us a question about the lesson she/he asks us for the answer but does not ask us to explain how we worked out the answer.
26	When one of the pupils in the class is having difficulties with the lesson, our teacher goes to help her/him straight away.
27	There are some pupils in the classroom that tease some of their classmates during Mathematics lessons.
28	I know that if I break a class rule I will be punished.
29	The teacher has to stop teaching the class because one of the pupils is being naughty.
30	When a pupil gives a wrong answer in Mathematics class some of the other children in the class make fun of her/him.
31	Our teacher keeps on teaching us even though it is break-time or the lesson is supposed to be over.
32	When I finish a task before my classmates my teacher immediately gives me something else to do.
33	When the teacher talks to a pupil after they have been naughty, sometimes after a while, that pupil will be naughty again.
34	We spend time at the end of the lesson to go over what we have just been taught.
35	There are times we do not have the necessary materials for the lesson to take place (e.g. dienes, unifix, test tubes, thermometers, calculators, rulers)
36	There are times when I do not have anything to do during a lesson.
37	During a Mathematics lesson, our teacher asks us to give our own opinion on a certain issue.
38	Our teacher asks us questions at the beginning of the lesson to help us remember what we did in the previous lesson.

39	Our teacher uses words that are hard to understand when she/he asks us a question.
40	When we do not understand a question, our teacher says it in a different way so we can understand it.
41	When a pupil gives a wrong answer our teacher gets another pupil to answer the question.
42	When I give a wrong answer to a question the teacher helps me to understand my mistake and find the correct answer.
43	Our teacher praises all pupils the same when we answer a question correctly.
44	When we have problem solving exercises and tasks in Mathematics lessons, our teacher helps us by showing us easy ways or tricks to solve the exercises or tasks.
45	Our teacher lets us use our own easy ways or tricks to solve the exercises or tasks we have in Mathematics.
46	In Mathematics lessons, our teacher teaches us ways or tricks that can be used in different lessons.
47	Our teacher encourages us to find ways or tricks to solve the exercises or work she/he gives us.
48	I am there when my teacher talks to my parents for my progress.
49	When we are having a test, I finish up within the time given to us.

APPENDIX 2.

The Teacher Professional Development Student Assessment Scale Draft Form (English Translation)

There are five numbers according to the frequency of occurrence of each expression. Please circle the number that best fits your thinking: 1) Never, 2) Rarely, 3) Sometimes, 4) Frequently, 5) Always		Factors
1	Our teacher informs us about the aims of the subject.	Orientation
2	Our teacher explains why we should learn the subject.	
3	Our teacher enables us to participate in the lesson effectively.	
4	Our teacher makes the lesson meaningful.	
5	Our teacher starts the lesson by reviewing what we have learned before.	Configuration
6	Our teacher starts the lesson by telling us what to do.	
7	Our teacher makes us feel the beginning, development and closing stages of the lesson.	
8	Our teacher draws our attention to the important points of the lesson.	
9	Our teacher finishes the lesson by repeating what we have learned.	
10	Our teacher helps us to attend the class by asking questions.	Questioning
11	Our teacher gives us enough time to answer the questions she/he asks.	
12	Our teacher guides us to find the right answer when we answer the questions incorrectly.	
13	Our teacher rewards our correct answers.*	
14	**We have difficulty understanding our teacher's questions.**	
15	Our teacher shows us how to solve the problems we face.	Teaching modeling
16	Our teacher asks us to find solutions for the problems we face.	
17	Our teacher helps us learn by ourselves.	
18	Our teacher asks us to work in small groups in the classroom.*	Application
19	We find the opportunity to apply what we learn in the classroom with the tasks assigned by the teacher immediately.	
20	Our teacher helps us to reinforce the new knowledge we have learned by making us to repeat them.	
21	The teacher's homework assignments allow us to repeat what we have learned in class.	

22	**There are times when our teacher fails to maintain discipline in the classroom.**	Learning environment
23	Our teacher has certain class rules.	
24	Our teacher prevents us from engaging in disruptive activities.	
25	**It is easy to spoil our teacher's lesson.**	
26	When our teacher enters the class, she/he starts the lesson without wasting time.*	Management of time
27	**There are times when our teacher finishes the lesson early and releases us.***	
28	The time allocated for a lesson time is passed in full.*	
29	Our teacher tells us about his / her opinion on our performance in the classroom.	Assessment
30	Our teacher conducts quizzes to determine how much we have learned before moving on to a new topic.	
31	Our teacher conducts oral surveys to determine how much we have learned before moving on to a new topic.	
32	If the teacher determines that we have not learned enough, she / he repeats the subject.	

APPENDIX 3.

Item Statistics of the Teacher Professional Development Student Assessment Scale Final Form

Item	*Mean*	*SD*	*Factor Loading*	*Item Difficulty*	*Item Discrimination*
1	3.91	1.07	0.713	0.78	0.646
2	3.63	1.22	0.705	0.73	0.62
3	4.17	0.98	0.742	0.83	0.668
4	3.92	1.14	0.784	0.78	0.682
5	3.8	1.13	0.671	0.76	0.594
6	4.03	1.08	0.604	0.81	0.541
7	3.42	1.2	0.602	0.68	0.543
8	4.41	0.94	0.613	0.88	0.581
9	3.43	1.2	0.564	0.69	0.515
10	4.08	1	0.716	0.82	0.644
11	4.1	1.09	0.772	0.82	0.668
12	4.4	0.91	0.710	0.88	0.602
14	4.03	0.9	0.472	0.81	0.424
15	4.15	1.03	0.754	0.83	0.66
16	3.99	1.09	0.761	0.8	0.662
17	3.74	1.13	0.701	0.75	0.628
19	3.07	1.24	0.584	0.61	0.554
20	3.92	1.1	0.822	0.78	0.734
21	3.98	1.18	0.670	0.8	0.594
22	4.04	0.98	0.614	0.81	0.497
23	3.91	1.17	0.503	0.78	0.466
24	4.18	1.06	0.561	0.84	0.439
25	4.03	1.12	0.612	0.81	0.481
29	3.59	1.18	0.494	0.72	0.429
30	2.88	1.33	0.470	0.58	0.402
31	3.08	1.28	0.569	0.62	0.504
32	3.8	1.2	0.697	0.76	0.636