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To cite this article:

Muslu, N., Okulu, H. Z., Senler, B., Arabacioglu, S., Ozdem Yilmaz, Y., & Oguz Unver, A. (2022). Determining in-service teachers' professional development expectations: An instrument development study. *International Journal on Social and Education Sciences (IJonSES), 4*(3), 338-357. https://doi.org/10.46328/ijonses.420

International Journal on Social and Education Sciences
2022, Vol. 4 No. 3, 338-357 https://doi.org/10.46328/ijonses.420

Determining In-service Teachers' Professional Development Expectations: An Instrument Development Study

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Article Info

Article History

Received:
24 February 2022
Accepted:
15 June 2022

Keywords

Professional development
In-service teachers
Teacher expectations
Instrument development

Abstract

Professional development programs (PDs) for in-service teachers are usually structured to deliver standardized content. However, considering the differences in the teaching practices utilized by teachers of different subjects, their needs and expectations may vary. Thus, this study develops an instrument to determine in-service teachers' expectations regarding PDs. Themes regarding the PD expectations of teachers were created based on a detailed literature review and authors' field experiences. In line with these themes, an item pool comprising 51 items was created. The developed instrument was applied online to 322 teachers from different provinces of Turkey and teaching different subjects. Exploratory factor analysis was performed on the dataset to ascertain the construct validity of the instrument. As a result of the analyses, the finalized instrument comprised 49 items and 6 dimensions; support, practice, learning, student success, organization, and career. The Cronbach's alpha internal reliability coefficient of all items in the finalized instrument was .94. These findings show that the instrument is a valid and reliable data collection tool for determining teacher expectations of PDs for identified themes. This instrument will be particularly useful in exploring the expectations of teachers while designing PDs and determining the extent to which current PDs meet teachers' expectations.

Introduction

In recent years, in line with the approach adopted in Turkey and around the world, the aim of education has been considered to be raising future generations as curious, engaging, and questioning individuals capable of taking informed decisions (Ministry of National Education [MoNE], 2011; Next Generation Science Standards [NGSS] Lead States, 2013). Accordingly, in some countries, teaching standards or learning outcomes have been set to guide teachers (MoNE, 2018; the NGSS Lead States, 2013). The leading role falls on the teachers in meeting these standards or goals (Rogers et al., 2007). Today, what is expected from teachers is, in line with the necessities of the current age, to adapt to the changes in the curricula as well as the situations that may negatively impact education, such as the transition to distance education due to the COVID-19 pandemic. Moreover, teachers are expected to improve their competencies related to different aspects of their job, such as interaction with students, teaching methods, assessment and evaluation, and use of relevant technologies. Relevant studies have shown a

clear relationship between student success and teacher competence (Bellibaş & Gümüş, 2016; Egalite et al., 2015; Goldhaber, 2002). As stated by Barber and Mourshed (2007), "the quality of education system cannot exceed the quality of its teachers" (p. 13). Teacher competence can be ensured when teachers commit to developing professionally. For professional growth, teachers must continue learning throughout their careers. To ensure continuous learning, professional development programs should be provided for teachers (Bellibaş & Gümüş, 2016). Such professional development programs are important not only for early career teachers but also for experienced ones. These professional development programs prepare early career teachers for the real-life classroom environment. They provide emotional support as well as guidance for creating interesting activities (Spencer et al., 2018); simultaneously, they inform experienced teachers about the latest trends in education. Therefore, professional development programs contribute to the development of both early career and experienced teachers. For example, as some teachers started their careers before the revision of the curriculum (Rogers et al., 2007) and the latest changes in the educational landscape, it becomes a necessity for teachers to attend a professional development program. Additionally, according to Phillips (2008), professional development plays a critical role in the continuous development of teachers. However, similar to the evaluation of educational practices on the basis of the evidence and findings obtained in relevant studies in the literature, professional development programs should also be evaluated. As Guskey (2000) indicated, the evaluation of professional development programs is beneficial in increasing the quality of these programs and avoiding loss of time in such them. Similarly, identifying the perspectives and needs of teachers working under different conditions, including their expectations from professional development programs, will facilitate the planning of such programs. Accordingly, this study develops a measurement tool to be used in determining teachers' expectations from professional development programs.

Professional Development Programs

Both in Turkey and around the world, the most common continuing education effort for supporting teachers' classroom practices is professional development programs. These professional development programs can be provided in the form of courses, workshops, seminars, or conferences, depending on the purpose (Louws et al., 2017). Kennedy (2005, 2014) proposed nine categories of continuing professional development and organized them along a spectrum. While on one end of the spectrum is professional development programs wherein the participants are placed in a passive role, the other end includes programs wherein participants identify their own needs, share their knowledge and experiences, and learn within communities. In traditional professional development programs, located on the first end of the spectrum, teachers are required to complete a certain number of hours of classes, their interaction with other participants is limited, and they have little say in shaping course content, which alienates them from the program and weakens their motivation (Fairman et al., 2020). However, the increasing prevalence of collaborative practices in education in the 21st century marks a paradigm shift from the traditional professional development programs (Lieberman & Miller, 2014; Stewart, 2014). The increasing use of technology has accelerated this shift as well (Hartsell et al., 2009). It is essential that the knowledge and skills acquired in professional development can be effectively utilized in the classroom environment (Fairman et al., 2020). West (2002) identified the main goal of professional development as improving students' academic success while empowering teachers through professional development. Indeed, the main purpose of professional

development is improving teacher competence and, ultimately, student success (Bellibaş & Gümüş, 2016). In Turkey, the majority of professional development programs continuous for 1–2 weeks and aim to provide teachers with pedagogical and/or content knowledge. Teachers attend these programs as learners; therefore, utilizing knowledge and skills acquired in these programs in the classroom environment is limited.

Characteristics of Effective Professional Development Programs

How to design effective professional development is a prominent topic of discussion in the literature. For example, Guskey (2003) identified the characteristics of effective professional development as (1) enhancement of teachers' content and pedagogical knowledge, (2) provision of sufficient time and other resources, (3) promotion of collegiality and collaborative exchange, (4) inclusion of procedures for evaluating the professional development, and (5) school-based professional development. Meanwhile, Desimone (2011) put forward five core features that all professional developments should have—namely (1) content focused: professional development activities focusing on subject matter content and how students learn that content, (2) active learning: teachers being provided the chance to get involved, such as receiving feedback, analyzing student data, or making presentations, (3) coherence: ensuring consistency of a given professional development program with other professional development programs, as well as school, region, and country reforms and policies, (4) duration: professional development programs being spread over a long period of time, and (5) collective participation: participation by groups of teachers from the same grade, subject, or school to build a learning community. Finally, Fairman et al. (2020) identified two elements important for designing effective professional development programs—; the focus of professional development and how teachers engage in professional development programs. The researchers identified three requirements for the focus of the effective professional development, (1) school based and job embedded, (2) focused directly on the intersection of student learning through content and pedagogy, and (3) aligned with curriculum and school improvement work as part of a coherent system, which have been linked with improved teacher learning, instructional practice, and student learning outcome. The second theme, inclusion of the teachers in teaching practices in professional development programs, was determined to have three requirements, which are (1) active participation rather than passive, (2) more intensive and sustained over time, and (3) collaborative rather than independent. It can be inferred from the literature review that effective professional development is generally expected to reinforce teachers' pedagogical and field knowledge, foster the creation of learning communities, enable participants to utilize attained information in their classes, be compatible with the aims and achievements across the curricula, and have sessions spread over time.

Evaluation of the Effectiveness of Professional Developments

The evaluation of the effectiveness of the implemented programs and their revision in line with their outputs are crucial to ensure the quality and sustainability of professional developments. Accordingly, Guskey (2000) developed a model comprising five levels of professional development evaluation. These levels are (1) participants' reactions: the participants' satisfaction with the professional development, whether they find the presented information useful, and whether they feel their time was well spent; (2) participants' learning: measuring the knowledge, skills, and attitudes participants gained; (3) organization support and change: the impact of the

program on the organizational climate and problems, resources, and procedures in the school and district; (4) participants' use of new knowledge and skills: whether participants are using their new knowledge and skills in their classes; and (5) student learning outcomes: the impact of professional development on students cognitively and behaviorally. The evaluation of each level of the model is made using data collected through different means (interviews, school tapes, follow-up meetings, portfolios, observations, video and audio recordings, and district and school records) and with the participation of different stakeholders (teachers, school administrators, district administrators, and students). Hence, it can be held that the model developed by Guskey (2000) addresses professional development programs in a comprehensive and holistic manner. According to Nordengren (2020), the way this model addresses the evaluation of professional development is comprehensively detailed and in-depth, thus requiring considerable time and resources. The levels of this model cover what happens before, during, and after the professional development program. The model was taken as the ground for the development of the instrument developed in this study, because it examines professional developments by taking into account multiple variables and at different levels, addresses the needs and expectations of teachers in a holistic manner, and emphasizes the use of knowledge and skills gained in these programs in the classroom.

Teachers' Expectations from Professional Development Programs

For professional development to be effective, it should be based on teachers' needs and expectations, because the main purpose of professional development is to support teachers and improve the learning outcomes of their students. The learning environment and dynamics are different in each and every classroom. Hence, a professional development program designed in line with teachers' needs is more likely to be successful. There are numerous studies in the literature that directly examine professional development practices (Desimone, 2011; Guskey, 2000, 2003; Kennedy, 2005, 2014). However, the number of studies that focus on teachers' expectations of these programs is limited (Avidov-Ungar, 2020; Spencer, et al. 2018). Spencer et al. (2018) found that the expectations of early career teachers from professional development programs are emotional support and support for classroom management, designing interesting classroom activities, and reflective conversations. Avidov-Ungar (2020), meanwhile, conducted interviews with 45 primary school teachers with different levels of teaching experience to determine their expectations from professional developments and the extent to which the existing professional development programs meet these expectations. In this study, the researchers categorized the statements of the participants and identified the themes of (1) reason and motivation for participating in professional development, (2) preferred professional development location and delivery, and (3) preferred professional development content. Overall, it was seen that the teachers were motivated by the prospects of furthering their professional growth, having a higher salary, and along with promoting their personal growth; prefer professional development activities that take place outside their schools; and find activities that help in acquiring knowledge and skills that they can readily use in the classroom useful and want professional development focusing on the subject they teach. Generally speaking, it can be argued that the number of studies in the literature on determining teachers' needs and their expectations from professional development programs is limited. Furthermore, these studies were conducted with a small number of participants, mostly using qualitative research methods. Therefore, this study develops a measurement tool to be used to determine teachers' expectations from professional development programs. With this quantitative measurement tool, an overview of teachers' expectations from professional

developments can be obtained. Thus, effective professional development programs can be designed by considering these expectations.

Method

This study aims to develop an instrument to be used in determining the expectations of teachers regarding professional development programs. The study comprises stages of item generation for the instrument within the context of the identified themes, application of the instrument to the study group, and performance of analyzes to ensure the validity and reliability of the obtained dataset.

Study Group

The study group comprised 322 teachers working in different provinces of Turkey who teach different subjects. The teachers to be included in the study were selected using the convenience sampling method, and data were collected from participants through an online form (Fraenkel & Wallen, 2000). The participants consisted of classroom teachers (n = 82), science teachers (n = 70), teachers of physics, chemistry, or biology (n = 47), and teachers of other subjects (n = 123).

Development of the Measurement Tool

The development of the measurement tool took place in various stages that extended over two months. Researchers first conducted a detailed literature review of professional development, effective professional development, and expectations from professional development. Then, the resources found were shared with all researchers for examination. In bi-weekly meetings over two months, researchers held discussions on studies on teachers' expectations from professional developments and experiences of the investigators of these studies. As a result of the meetings and discussions, the primary author of the study created an item of pools for the instrument. The items were generated in a way to measure in a holistic manner teachers' expectations from an professional development regarding aspects such as student success, practice, career, organization, etc. Then, the appropriateness of the items was examined by four experts in the fields of science education and teacher education. To improve the suitability of the instrument, in terms of language and appropriateness for teachers, new items were added, some items were removed, and some items were corrected. Finally, the measurement tool was revised in line with the inputs of the authors of the study and the instrument was then finalized. The final version of the measurement tool was a 5-point Likert-type instrument (1= Strongly Disagree, 2= Disagree, 3= Undecided, 4= Agree, 5= Strongly Agree) containing 51 items (Appendix).

Data Analysis

The dataset obtained after the first version of the measurement tool was applied to the samples in the digital environment and was analyzed using the SPSS package software. Then, the suitability of the dataset for factor analysis was examined by measuring the Kaiser–Meyer–Olkin (KMO) coefficient and performing the Bartlett's

test of sphericity. Based on the results of these analyzes, exploratory factor analysis (EFA) was performed to determine the construct validity of the instrument. Then, Pearson's product–moment correlation coefficient (PPMCC) values were calculated and independent-sample t-test was conducted to determine the discrimination levels of the instrument items. To determine the reliability of the measurement tool, Cronbach's alpha coefficients were calculated for both the factors and the whole instrument (DeVellis & Thorpe, 2021).

Results

Sample Suitability for the Factor Analysis, the Kaiser–Meyer–Olkin Test, and Bartlett's Test of Sphericity

The suitability of instrument items for the factor analysis was measured with the KMO test and the Bartlett's test of sphericity (Fabrigar, & Wegener, 2011). A KMO value of .90 indicates perfect sampling adequacy (Field, 2005). In this study, after the first KMO test, a value of .91 was obtained. Moreover, after Bartlett's test of sphericity, the significance level of the instrument was found to be $\chi 2 = 12040.59$ and $p = .000$. The data obtained show that the sampling adequacy for factor analysis is at an acceptable level.

Afterward, in the analysis performed to determine the factors of the instrument, it was found that Item 16 and Item 28 were overlapping; thus, they were removed from the instrument. After the removal of the two items from the instrument, the number of items on the instrument was reduced to 49. Table 1 presents the results of the KMO test and the Bartlett's test of sphericity repeated to determine the sampling adequacy for factor analysis of the revised version of the instrument.

Table 1. Results of the Kaiser–Meyer–Olkin Test and Bartlett's Test of Sphericity

Kaiser–Meyer–Olkin Test		.905
Bartlett's Test of Sphericity	$\chi 2$	11498.30
	df	1176
	p	.000

In the repeated tests, the KMO value of the instrument was found to be .905, and Bartlett's test of sphericity value was found to be significant ($\chi 2 = 11498.30$; $p = .000$) (Table 1). Because the KMO value was found to be above .90, it indicated excellent sampling adequacy (Field, 2005). The KMO test and Bartlett's test of sphericity results showed that the new dataset was adequate for EFA.

Determination of the Factor Structure

EFA helps to make sense of the relationships between the items in the instrument, group the items in a meaningful way, determine the number of factors composing the instrument, and distinguish items that are incompatible with the factors (Tabachnick & Fidell, 2007; Worthington & Whittaker, 2006). To determine the factors of the instrument, EFA was performed. A factor analysis was performed based on the results of the KMO test and Bartlett's test of sphericity and factor eigenvalues were found (Table 2).

Table 2. The Eigenvalues of the Factors of the Initial Instrument and the Percentage of Variance Explained

Factor	Initial Eigenvalue			Variance Explained		
	Sum	Variance %	Cumulative %	Sum	Variance %	Cumulative %
1	15.76	32.17	32.17	5.82	11.87	11.87
2	3.88	7.93	40.10	5.69	11.62	23.49
3	3.27	6.67	46.77	5.08	10.37	33.86
4	2.53	5.16	51.93	4.93	10.07	43.93
5	2.17	4.43	56.37	4.64	9.46	53.39
6	1.83	3.74	60.11	3.29	6.72	60.11

Factors with an item eigenvalue greater than 1 are considered suitable for inclusion in the analysis. Calculated eigenvalues are given in Table 2. Accordingly, the eigenvalues of the factors were found to be 15.76 for the first factor, 3.88 for the second factor, 3.27 for the third factor, 2.53 for the fourth factor, 2.17 for the fifth factor, and 1.83 for the sixth factor. The amount of variance explained by each factor, in addition to the eigenvalues, provides information about the instrument (Field, 2005). Table 2 shows that the first factor explained 11.87 of the total variance, the second 11.62 of the total variance, the third 10.37 of the total variance, the fourth 10.07 of the total variance, fifth 9.46 of the total variance, and the sixth factor explained 6.72 of the total variance. Hence, this version of the 6-factor instrument was found to explain 60.11% of the total variance.

Factor Analysis

After the factor structure of the Teachers' Professional Development Expectations Instrument was determined, the factor loadings were calculated to identify the items that loaded on a factor. The Varimax rotation method, which is among the most popular schemes for orthogonal rotation, was used in the calculation of factor loading values (Tabachnick & Fidell, 2007). In the interpretation of the analysis outputs, the value of .30 was determined as the lower threshold of acceptability for the items that loaded on a factor (Fabrigar, & Wegener, 2011).

In the initial exploratory analysis, the factor loading values for the items were calculated to be greater than .30. However, items 16 and 28 were removed from the instrument as they did not offer the desired level of statistical significance. Consequently, the number of items on the instrument was reduced from 51 to 49. Finally, the construct validity of the new 6-factor 49-item instrument was verified by conducting an EFA ($\chi 2$ (1176) = 11498.30; $p < 0.001$). Furthermore, the factor structure was re-calculated by EFA using a Varimax orthogonal rotation (Table 3).

Table 3 shows the distribution of the factor loading values of 49 items in 6 sub-dimensions. They are calculated using the Varimax orthogonal rotation. The results show that all items have sufficient factor loading on their respective sub-dimensions, that is, over 0.30.

Table 3. Factor Loading Values for the Items of the Initial Instrument

Item	Factor 1	Factor 2	Factor 3	Factor 4	Factor 5	Factor 6
Item 35	.79					
Item 37	.77					
Item 36	.76					
Item 38	.74					
Item 33	.72					
Item 34	.68					
Item 32	.61					
Item 31	.53					
Item 30	.52					
Item 29	.37					
Item 41		.85				
Item 42		.85				
Item 44		.84				
Item 40		.82				
Item 43		.82				
Item 39		.74				
Item 45		.67				
Item 3			.79			
Item 6			.73			
Item 7			.71			
Item 4			.70			
Item 2			.68			
Item 5			.61			
Item 1			.58			
Item 8			.55			
Item 9			.51			
Item 48				.78		
Item 49				.75		
Item 50				.74		
Item 46				.71		
Item 51				.65		
Item 47				.61		
Item 24					.73	
Item 25					.72	
Item 27					.66	
Item 23					.65	
Item 26					.55	
Item 22					.55	

Item	Factor 1	Factor 2	Factor 3	Factor 4	Factor 5	Factor 6
Item 19					.50	
Item 17					.46	
Item 18					.46	
Item 21					.45	
Item 20					.42	
Item 12						.72
Item 10						.69
Item 11						.66
Item 14						.64
Item 15						.61
Item 13						.56

Naming Factors

Naming the factors obtained as a result of factor analysis makes it easier to interpret the instrument. The common features of the items should be considered and the relevant literature should be consulted while naming the factors (Çokluk et al., 2010). It had been found that the instrument developed to be used in determining teachers' expectations from professional development programs had six factors. Researchers consulted the professional development literature in naming these factors (see Table 4).

Table 4. Dimensions and Items of the Final Instrument

Dimensions	Number of Items	Item Numbers
1. Factor: Support	10	29, 30, 31, 32, 33, 34, 35, 36, 37, 38
2. Factor: Practice	7	39, 40, 41, 42, 43, 44, 45
3. Factor: Learning	9	1, 2, 3, 4, 5, 6, 7, 8, 9
4. Factor: Student Success	6	46, 47, 48, 49, 50, 51
5. Factor: Organization	11	17, 18, 19, 20, 21, 22, 23, 24, 25, 26,27
6. Factor: Career	6	10, 11, 12, 13, 14, 15

Table 4 shows the dimension of the final instrument. The first dimension comprised 10 items, the second 7 items, the third 9 items, the fourth 6 items, the fifth 11 items, and the sixth dimension comprised 6 items. The total number of items are 49.

Pearson's Product–Moment Correlation Coefficient and t-test Values of the Instrument Items

While factor analysis was performed to determine the construct validity of the developed instrument, the corrected item-total correlation, PPMCC, and t-test values of the instrument items were calculated to determine their discrimination levels (see Table 5).

Table 5. Corrected Item-Total correlation, Pearson's Product–Moment Correlation Coefficient, and t-test Values of the Instrument Items

Sub-dimensions	Items	Corrected Item-Total Correlation	t
Support	Item 29	.47	−19.81
	Item 30	.70	−31.03
	Item 31	.64	−23.87
	Item 32	.68	−17.11
	Item 33	.74	−33.60
	Item 34	.69	−20.48
	Item 35	.78	−16.33
	Item 36	.72	−33.60
	Item 37	.72	−21.64
	Item 38	.73	−13.38
Practice	Item 39	.73	−18.43
	Item 40	.80	−17.93
	Item 41	.86	−17.00
	Item 42	.83	−17.58
	Item 43	.80	−18.36
	Item 44	.82	−17.63
	Item 45	.67	−18.63
Learning	Item 1	.53	−11.45
	Item 2	.61	−10.78
	Item 3	.74	−10.30
	Item 4	.58	−7.12
	Item 5	.57	−9.85
	Item 6	.71	−11.58
	Item 7	.70	−18.92
	Item 8	.62	−20.37
	Item 9	.57	−9.16
Student Success	Item 46	.81	−17.01
	Item 47	.72	−23.85
	Item 48	.86	−13.82
	Item 49	.82	−12.32
	Item 50	.82	−16.97
	Item 51	.73	−22.87
Organization	Item 17	.55	−29.86
	Item 18	.55	−21.82
	Item 19	.49	−12.12
	Item 20	.47	−16.05

Sub-dimensions	Items	Corrected Item-Total Correlation	t
	Item 21	.48	−21.15
	Item 22	.48	−29.11
	Item 23	.58	−19.86
	Item 24	.66	−22.62
	Item 25	.61	−15.32
	Item 26	.56	−14.01
	Item 27	.64	−14.60
Career	Item 10	.53	−17.58
	Item 11	.58	−17.37
	Item 12	.66	−38.31
	Item 13	.44	−15.36
	Item 14	.53	−19.10
	Item 15	.54	−54.67

df(172); *p < .001

Table 5 shows that the PPMCC values vary between .44 and .86. Moreover, as another means of analyzing the items, the raw scores obtained from the instrument were calculated and sorted from the smallest to largest. The scores of the top 27% and bottom 27% were compared using the independent-samples t-test, and whether there was a statistically significant difference between the item discrimination levels was examined. The arithmetic means of the top and bottom 27% in Table 5 point to a statistically significant difference between the item discrimination levels.

Table 6. Pearson's Product–Moment Correlation Coefficient Values of the Sub-Dimensions

	Mean	SD	1	2	3	4	5	6	Sum
Factor 1	4.79	.33	1						
Factor 2	4.30	.59	.36**	1					
Factor 3	4.66	.36	.49**	.44**	1				
Factor 4	4.69	.40	.57**	.45**	.63**	1			
Factor 5	4.54	.64	.35**	.32**	.42**	.39**	1		
Factor 6	4.78	.37	.52**	.22**	.49**	.56**	.46**	1	
Total	4.64	.32	.72**	.65**	.80**	.82**	.70**	.70**	1

The analysis results in Table 6 reveal a statistically significant relationship between the dimensions of the instrument at the p < .001 level. This is regarded as another indicator of the reliability of the instrument.

Cronbach's Alpha Reliability Coefficients

Cronbach's alpha coefficients were calculated to test the internal consistency of the instrument (see Table 7).

Table 7. Reliability Coefficients

	Cronbach's Alpha Coefficients
Support	.91
Practice	.93
Learning	.88
Student Success	.92
Organization	.84
Career	.77
Total instrument	.94

As is seen in Table 7, the Cronbach's alpha coefficients for the sub-dimensions of the instrument were found to range between .77 and .93. The Cronbach's alpha coefficient for the whole instrument was calculated to be .94.

Discussion

This study sought to develop a measurement tool to be used in determining the expectations of teachers regarding professional development programs. The 51-item instrument, developed in line with expert opinions and based on the findings of the literature review and researchers' experiences, was applied to 322 teachers. The EFA performed on the dataset showed that the instrument had a 6-factor structure. The eigenvalues of the factors were found to range between 1.83 and 15.76 and item loading values between .85 and .37. In line with the results of the analyses made on the dataset, 2 items were removed from the instrument, reducing the total number of items in the instrument to 49.

The finalized 6-factor instrument was found to explain 60.11% of the total variance. The six factors of the instrument were named support, practice, learning, student success, organization, and career. The first factor (support) comprised 10 items, the second factor (practice) 7 items, the third factor (learning) 9 items, the fourth factor (student success) 6 items, the fifth factor (organization) 11 items, and the sixth factor (career) comprised 6 items. These themes ensure multi-dimensional measurement, as stated by Guskey (2000). It was argued in different studies in the literature that in the provision of effective professional development to both early career and experienced teachers, it is important to offer teachers support (Spencer et al., 2018), improve teachers' pedagogical and field knowledge (Desimone, 2011; Fairman et al., 2020; Guskey, 2003), provide teachers with knowledge and skills that they can actively use in the classroom (Fairman et al., 2020), improve student learning outcomes along with teacher competencies (Bellibaş & Gümüş, 2016; Egalite et al., 2015; Goldhaber, 2002; West, 2002), conduct such training programs in a timely and organized manner (Desimone, 2011; Guskey, 2000, 2003), and ensure that such trainings contribute to teachers' careers (Desimone, 2011; Fairman et al., 2020). Parallelism can be observed between the factors identified in this study and the findings of other studies in the literature.

Furthermore, corrected item-total correlation, PPMCC, and independent-samples t-test values were calculated to determine the item discrimination levels of the instrument items. The PPMCC values were found to vary between

.44 and .86. The t-test results showed a statistically significant difference between the instrument scores of the top and bottom 27%. Finally, Cronbach's alpha internal consistency coefficients were calculated to measure the reliability of the instrument; the Cronbach's alpha value of the sub-dimensions was found to range between .77 and .93, while this value was found to be .94 for the whole instrument.

Conclusion

As a conclusion, the developed instrument to determine teachers' expectations from professional development programs is valid and reliable. The instrument can be used to determine the expectations of all teachers, regardless of the subject they teach, concerning professional development programs. Thus, this instrument can be used in the planning of programs aimed at teachers' professional development. Moreover, the application of the instrument before and after professional development programs to see whether they met the expectations of the participants may help in evaluating their effectiveness. This instrument can also be used to determine the expectations of teachers of a specific subject regarding programs prepared for their respective courses. Hence, this instrument can be utilized in designing in-service programs on a specific course subject.

It is anticipated that the application of the instrument to teachers with varying levels of experience will be beneficial in identifying teachers' needs by their experience levels, as well as in separating the participants into groups in professional development programs based on the data collected by the instrument if need be. The use of this instrument before the interviews conducted with teachers to understand their expectations from professional development can be made more systematic. This instrument can be used to compare the professional development expectations of teachers working in private and public schools.

The fact that the instrument groups teachers' expectations under six themes can be considered as a limitation for the instrument. Another limitation is that this instrument was developed to determine teachers' expectations from professional development programs; using this instrument along with other measurement tools to determine the needs and expectations of those who are indirectly affected by professional development programs such as students and school administrators can help to approach the issue in a more holistic manner.

Acknowledgements

This study is based upon work supported by The Scientific and Technological Research Council of Turkey, 1001-Scientific Technological Research Project Support Program under Grant 220K080 entitled "Designing and Evaluation of the Effectiveness of Scientific Inquiry Supported Online Mentoring (e-scaffolding) in In-service Teacher Training" and presented at the International Conference on Education in Mathematics, Science, and Technology (ICEMST 2022), March 24–27, 2022, Antalya, Turkey.

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Appendix

Teachers' Professional Development Expectations Instrument

Dear teacher,

This instrument aims to determine what your expectations are from professional development programs. We request you to carefully read each item on the instrument and choose the option that you think best reflects your opinion by putting a tick in the relative box. Your responses to the items will only be available to the project researchers and will be used for research purposes only. Thank you for your participation in the research.

Please indicate the extent to which you agree with the statement about the theme "learning" by selecting one of the following options: (1) Strongly Disagree, (2) Disagree, (3) Undecided, (4) Agree, (5) Strongly Agree.

Item	**(1)**	**(2)**	**(3)**	**(4)**	**(5)**
The content of the professional development program should be compatible with the learning outcomes across the curriculum.					
The content of the professional development program should enable me to learn new concepts, theories, and ideas.					
The content of the professional development program should be guiding in terms of how I can establish interdisciplinary connections between the topics I cover in the course.					
The content of the professional development program should guide me on how to relate the topics I cover in the course to real life.					
The content of the professional development program should help me acquire new skills.					
The content of the professional development program should enable me to learn practically about contemporary teaching strategies.					
The content of the professional development program should enable me to gain practical knowledge about student assessment.					
The content of the professional development program should enable me to gain practical knowledge about classroom management.					
The content of the professional development program should enable me to gain practical knowledge about how to organize the learning environment to foster active student participation in the course.					

Please indicate the extent to which you agree with the statement about the theme "career" by selecting one of the following options: (1) Strongly Disagree, (2) Disagree, (3) Undecided, (4) Agree, (5) Strongly Agree.

Item	**(1)**	**(2)**	**(3)**	**(4)**	**(5)**
At the end of the professional development program, I should be awarded an official certificate that I can use for appointment and promotion.					
My participation in the professional development program should be encouraged by the institution where I am working.					
My participation in the professional development program should be rewarded by my administrative superiors.					
My participation in the professional development program should contribute to my career development.					
My participation in the professional development program should offer new opportunities in my profession.					
My participation in the professional development program must have a financial return.					

Please indicate the extent to which you agree with the statement about the theme "organization" by selecting one of the following options: (1) Strongly Disagree, (2) Disagree, (3) Undecided, (4) Agree, (5) Strongly Agree.

Item	**(1)**	**(2)**	**(3)**	**(4)**	**(5)**
My needs should be communicated in advance.					
My needs should be met					
In the beginning, the professional development program should give a clear and informative orientation session.					
The sessions of the professional development program should start right on the agreed-upon time.					
The professional development program should extend over a period.					

The sessions of the professional development program should not be constrained by time and space.					
There should be a flexible timetable for the activities that I need to do before sessions of the professional development program.					
The sessions of the professional development program should take place at an easily accessible location.					
The professional development environment should make me feel comfortable.					
My ideas should be valued in the professional development program.					
I should be able to easily access the materials of the professional development program.					

Please indicate the extent to which you agree with the statement about the theme "support" by selecting one of the following options: (1) Strongly Disagree, (2) Disagree, (3) Undecided, (4) Agree, (5) Strongly Agree.

Item	**(1)**	**(2)**	**(3)**	**(4)**	**(5)**
The professional development program should be comprehensive and go beyond meeting my needs.					
I should be provided with support to effectively resolve the problems I experience.					
I should be provided with support to quickly resolve the problems I experience.					
The support with which I am provided throughout the professional development program should motivate me.					
The support with which I am provided throughout the professional development program should highlight my strengths.					
The support with which I am provided throughout the professional development program should be based on constructive criticism that will help me develop professionally.					

The professional development program should provide an environment where my colleagues and I can support each other.					
The professional development program should enable me to get to know and collaborate with different colleagues.					
The professional development program should foster an environment of active participation.					
The professional development program should enable me to gain practical knowledge about organizing the learning environment to encourage active student participation during the class.					

Please indicate to the extent to which you agree with the statement about the theme "practice" by selecting one of the following options: (1) Strongly Disagree, (2) Disagree, (3) Undecided, (4) Agree, (5) Strongly Agree.

Item	**(1)**	**(2)**	**(3)**	**(4)**	**(5)**
The materials provided in the professional development program should be suitable for classroom practice.					
The activity plans provided in the professional development program should be suitable for classroom practice.					
The resources provided in the professional development program should be suitable for classroom practice.					
The instructors of the professional development program should provide me with recommendations that I can follow during class.					
Any guidance provided in the professional development program should be directly related to the classroom environment.					
The content of the professional development program should be suitable for classroom practice.					
The materials (worksheets, activity items, etc.) provided as a part of the professional development program should be suitable for distribution to students during class.					

Please indicate the extent to which you agree with the statement about the theme "student success" by selecting one of the following options: (1) Strongly Disagree, (2) Disagree, (3) Undecided, (4) Agree, (5) Strongly Agree.

Item	**(1)**	**(2)**	**(3)**	**(4)**	**(5)**
The professional development program should enable me to create an environment that boosts students' classroom performance.					
The professional development program should enable me to create an environment that boosts students' academic achievement.					
The professional development program should enable me to create an environment that boosts students' confidence.					
The professional development program should enable me to create an environment that encourages students' active participation in the class.					
The professional development program should enable me to create an environment that boosts students' motivation.					
The professional development program should enable me to create a differentiated learning environment.					