Developing and Validating a Professional Development Inventory: Novice and Experienced Teachers' Perceptions in Focus

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***Background*:** In any successful education system, teachers as the main driving forces of the learning process are at the forefront. To fulfill their responsibilities efficiently, they need to enhance their knowledge and professional expertise. Hence, the evaluation of teachers' professional development is of paramount importance in EFL contexts.

***Purpose*:** The present study was conducted to investigate the underlying factors constituting a newly developed teachers' professional development questionnaire in the EFL context of Iran.

***Method*:** To this end, 242 Iranian EFL teachers with different experiences were conveniently requested to partake in this study. They were asked to respond to the questionnaire, which encompassed 76 items on a five-point Likert scale. After ensuring the reliability of the scale, to scrutinize the validity of the questionnaire, content validity and factor analysis were checked.

***Results*:** The results of Exploratory Factor Analysis (EFA) revealed that the questionnaire involved 7 factors, representing the teachers' beliefs about various aspects of development, like means of development, needs, beneficiaries, motivators, methods, and obstacles of development. The results of Confirmatory Factor Analysis (CFA) also demonstrated that the questionnaire consists of seven factors, loading on items and sub-components of the model.

***Implication*:** This study can provide treasured pedagogical implications for EFL teachers, teacher educators, policymakers, and materials developers through raising their awareness and knowledge of teachers' professional development and its underlying components.

***Keywords*:** EFL teacher, novice teacher, experienced teacher, professional development, validation, teacher perception

Introduction

As a key constituent of teacher education, professional development has long been acknowledged as one of the most operative means to boost teachers' professional abilities and attitudes, craft better schools, and eventually develop the learning process and student achievements (Borko & Putnam, 1995; Doyle, 1990; Guskey, 2000). To use Evans' (2011) term, the very aim of professional development is to change teachers' professional thinking, knowing, feeling, and doing. Teacher professional development has been described by Guskey (2002) as organized attempts to incur changes in teachers' classroom practices, their attitude and perceptions, and learners' learning outcomes. It is essential to teachers' ability to cope with educational innovation and manage various socioeconomic affairs internal and external to the school (Omar, 2014).

Teacher Professional Development (TPD) is a building block of every successful education system. As the main mission of No Child Left Behind Act (NCLB) and as represented in Dewey's (1902) study, professional development has been suggested to ensure teachers' awareness, knowledge, skills, pedagogical practices, and qualities and support their personal and socio-emotional growth (Rodriguez et al., 2020). Professional development is an on-going and context-sensitive attempt (Schlager & Fusco, 2003), which concentrates on the teachers' growth to present high-quality instruction to the students (Avalos, 2011).

Hence, such a development can be gained through different activities by which the teachers can direct the students to high levels of academic success; the penultimate aim of education. Although in many educational milieus this concept has been dealt with limitedly, insufficiently, simplistically, and with a bad reputation (DeMonte, 2013), it is still the core of

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education as many teacher-related characteristics like teachers' effectiveness, autonomy, agency, and so forth are contingent upon their proper professional development. Likewise, as the values, knowledge, notions, and assumptions of teachers' professional development are different across contexts, more should be known about the elements and various dimensions of professional development. Despite its potential role in enhancing both pre-service and in-service teachers' quality, professional development in education has a bad reputation. Stakeholders contend that what the majority of teachers take as professional chances to learn are "thin, sporadic, and of little use with regard to developing teaching" (DeMonte, 2013, p. 1). Up against this claim, many researchers believe that if rich and inclusive professional development programs that cover different aspects of education are offered to teachers, the results (students' achievement) will be astonishing and eye-catching (e.g., Abell & Lee, 2008; Avalos, 2011; Harris & Sass, 2007; Vogt & Rogalla, 2009). Hence, professional development is by nature valuable and helpful for different stakeholders, provided that its pre-requirements are met.

Admitting its crucial role, numerous research studies in different parts of the world have been conducted in this area, the results of which point to different perceptions and beliefs of various stakeholders regarding professional development and its magnificent impact on diverse academic zones (e.g., Angrist & Lavy, 2001; Griffin et al., 2018; Gutierrez-Cobo et al., 2019; Kurtovic et al., 2019; Payne & Wolfson, 2000; Torff & Sessions, 2009, to cite a few). Despite the large number of PD studies being conducted worldwide, there is still a dearth of research in this domain to determine those dimensions and components of TPD that represent the recent changes and developments in the curriculum, norms and standards, and evaluation and assessment. The education context of Iran has not been an exception in this area, too, and over the past couple of decades, many studies have been done in this domain, utilizing diverse research tools to disclose the stakeholders' beliefs about professional development and its multiple effects on education (Ayyoobi et al., 2016; Kashani & Rostampoor, 2013). However, most of such studies have utilized questionnaires developed by the researchers of similar studies without focusing, specifically, on the sources, hindrances, features, representations, and beneficiaries of an effective professional development program, which are all critical aspects of TPD. Moreover, a limited number of studies have scrutinized EFL teachers' professional development in spite of the swift progression in the number of EFL teachers in Iran.

As stated previously, professional development takes various forms and can be achieved through different activities and practices within a discipline. Various theoretical models and conceptual frameworks have been proposed to present the focus and components of TPD, like the one suggested by Desimone and Garet (2015) considering the content, active learning, coherence, sustained duration, and collective participation as various dimensions of TPD or the one introduced by Buysse et al. (2009) with the three elements of the who, what, and how of PD. However, other researchers, who have used the models, have not found them comprehensive in terms of the theoretical foundation, underlying mechanisms, needs, and situational and contextual variations (McElearney et al., 2018; Siraj et al., 2019). What is crucial in this regard is, first, the development of a research-based and validated tool to assess teachers' professional development level with the aim of identifying their strengths and weaknesses and then offering them appropriate activities to be used in training courses to develop professionally. In other words, conducting focused studies in this area can facilitate the ground for the development of a concise and contextualized instrument to gauge the construct of EFL teachers' professional development. Motivated by such a gap in the present study, the researchers made an attempt to develop and validate a questionnaire, which could be used to inspect the perceptions of Iranian EFL teachers with varying experiences with respect to their professional development and its characteristics, forms, barriers, and realizations and enrich the available scales in this domain.

Literature Review

Professional development is concerned with numerous sorts of educational experiences related to one's work (Mizell, 2010). It may take different formats from formal processes (e.g., conferences, seminars, workshops, collaborative learning among members of a work team, and a course at university) to informal ones (e.g., discussions among work colleagues, independent reading and research, observations of a colleague's work, or other learning from a peer) (Arthur, 2016; Mizell, 2010; Petty et al., 2016). Teachers' professional development is of value in that, in any education context, there will be competent students if the teachers who are at the forefront are provided with the required education and training for teaching effectively. This echoes the idea that the accomplishment of any aspiring education reform initiative relies, mostly, on teachers' effectiveness and qualifications (Garet et al., 2001). Put it more tellingly, teachers' professional development, in general, is

concerned with instructors' learning, their ability to organize their learning, and change knowledge into practice to shape students' achievement (Avalos, 2011). It can help teachers not only to improve their knowledge about how to be more effective teachers but also it provides a forum through which they can share their concerns and their experiences (Creese et al., 2013).

As a growing research strand, professional development has witnessed a great surge of interest over the past few decades. Numerous studies have addressed the issue from the perspectives of different stakeholders, including the attitudes of teachers toward professional development, which were found to be dissimilar in different contexts (Silane Ruberto, 2003; Torff & Sessions, 2008, 2009), the characteristics of a successful professional development program (Smylie, 1988), the impacts of professional development on students' achievement (Angrist & Lavy, 2001; Avalos, 2011; Supovitz & Turner, 2000), in-service training, professional learning, and continuing education (Behzadi et al., 2019; Topolinski, 2014). Concerning the purposes which professional development programs wish to achieve, Payne and Wolfson (2000) maintained that the goal of professional development is to provide instructors with the required knowledge and expertise and increase students' attainment. Those involved in professions such as education, in general, and language teaching, in particular, intensively need to professionalize themselves and keep themselves updated considering the latest development happening in their discipline if they are to survive in the field. They should constantly amplify their knowledge and skills to implement the best educational practices. As pinpointed by Ingersoll (2003), referring to the data of the nationally representative Schools and Staffing Survey (SASS) and the Teacher Follow-up Survey (TFS), the intricacy of teaching is abundant that nearly one-third of teachers quit their job during three years and 50% in five years. The challenge is by no means limited to novice teachers; experienced teachers also face numerous challenges in their teaching profession.

Like other teacher education cores, teacher's professional development is of different underlying layers and elements, making it the basis of successful education. In this regard, Guskey and Yoon (2009) examined the result of nine well-designed research studies on professional development and argued that it has three common elements, namely workshops, outside experts, and time. They maintained that teachers need time and appropriate practices to engage in a high-quality professional development,

deepen their understanding, and develop innovative approaches to teaching. As stated previously, professional development is a multi-faceted and complicated construct in teacher education with many factors affecting its formation and efficacy (Guskey, 2000; Yurtsever, 2013). It is just like a nested system inside which systems evolve from the other related (sub)systems (Stollar et al., 2006), which are all indicators of the interconnections and complexity of TPD components. In line with such an argument, Ninlawn (2015) ran a study on factors influencing professional development, and in the end, the researcher contended that factors such as innovative skills, communication and media awareness, computer, and Information Technology (IT) have a positive effect on teachers' level of professional development.

Similarly, in their recent study, Evers, Kreijns, and Van der Heijden (2016) argued that among the factors that can have an impact on teachers' professional development, organizational factors like learning climate and social support obtained from colleagues could operate as a positive resource for professional growth. Going further, Richards (2011) explored ten fundamental dimensions of language teaching expertise to plan for the professional development of English language teachers. More specifically, in his influential study, he emphasized the teachers' language proficiency, content knowledge and contextual knowledge, teaching skills, learner–centeredness, constructing a personal system of knowledge, beliefs, and understandings, being an active member of the professional community, and finally pedagogical reasoning skills.

Moreover, in their seminal study, Visser et al. (2010) figured out the crucial components of a professional development program to train teachers to apply curriculum innovation. They argued that teachers must be afforded sufficient chances to advance science content, instructional approaches, and assessment techniques. They also need chances to collaborate with other teachers and team up in a systematized network. They should talk over teaching and learning troubles and challenges, exchange features of good instructional practice, and address how to attain equipment and materials. In the same vein, conducting a meta-analysis on professional development programs, Capps et al. (2012) proposed a list of features of effective professional development programs that aim to promote scientific and inquiry-based teaching. The features encompassed offering prolonged time and support for the program, presenting real-life experiences to teachers, acting in accordance with standards, lesson development,

inquiry modeling, reflection, transference, and content knowledge (Yarema, 2015). In another study in Asia, Badri et al. (2016) conducted a research in Abu Dhabi to explore the teachers' perceptions of teaching and learning with a focus on teacher's professional development. They aimed to identify the perceptions of professional development needs, impacts, and the barriers confronted by teachers in secondary schools. In the results, they found professional development needs, barriers, activities, and forms of development as the factors underlying the teacher's professional development.

All these studies signify the fact that teachers' professional development as a path for invigorating teachers' knowledge and expertise is of crucial significance in the field of language education since language teachers (i.e., EFL teachers) work in a context wherein the means of instruction is the subject of instruction at the same time. The reviewed studies are also invaluable in that they pinpoint some of the constituting components of the construct of professional development in their findings, which helped the researchers during the construction of the questionnaire. Nevertheless, sparse opportunities have been provided for EFL teachers to develop their professional knowledge, and there is a shortage of investigation on EFL teachers' professional development within the educational context of Iran. The primary step in investigating EFL teachers' perceived level of professional development is designing, validating, and developing an exact and contextualized research instrument to assess the construct of concern accurately.

Yet, few studies in Iran have tried to develop a scale in this area, and that the development of such a scale can assist in identifying the ways by which teachers can strengthen and improve their teaching skills. As a case in point, Khany and Azimi (2016) validated a scale to measure teachers' PD. They began with an initial tentative model with 130 items and ran exploratory and confirmatory data analyses on a sample of 400 EFL teachers. In the end, 28 items were removed which left the scale 102 items to measure TPD by three components of knowledge, skill, and TPD programs. Likewise, Ayyoobi et al. (2016) conducted a descriptive-survey study in Iran and examined 400 high school teachers in Birjand to identify the components of teacher's professional development. Taking advantage of EFA and CFA, the researchers came across eight components for the construct of TPD, including thematic knowledge, learning environment, cooperation, educational technology, research base, educational designing, evaluation, and human resource development.

All in all, designing a research tool that can measure EFL teacher's beliefs about the influential factors, hindrances, realizations, features, and sources of professional development has been less examined in Iran. Consequently, the importance considered for knowing the strengths and weaknesses of EFL teachers' professional development and a lack of an inclusive instrument to measure professional development among Iranian novice and experienced EFL teachers urged the researchers to design and validate a new tool and enrich the relevant literature in this domain.

Methodology

Participants

The target participants of this study were 242 Iranian teachers, who were selected from the initial 400 participants, among which the questionnaire was distributed. As for their background, they were both TEFL, those who have formally studied Teaching English as a Foreign Language (TEFL), and non-TEFL, those who have studied other majors or have had English related university degrees, teacher participants. Moreover, they were teaching English at different language institutes in Tehran and Mashhad. Regarding their teaching experience, there were 58 novice and 184 experienced EFL teachers who were chosen from different English language institutes in Tehran and Khorasan province. They were all Persian speakers, including both male and female instructors, who had different academic degrees including BA, MA, and PhD. They had different levels of teaching experience, and their age ranged from 18 to 58 with a mean of 32.92. The participants of this study were chosen non–randomly using convenience sampling and based on their readiness to join in the study via online links and face-to-face meetings.

Instruments

The present study pursued two main stages in its process. First, a Teacher Professional Development questionnaire was developed, and then it was validated according to the collected data from 242 novice and experienced Iranian EFL teachers. The newly developed questionnaire included 76 items in a 5-point Likert scale with 1 signifying "strongly disagree" and 5 signifying "strongly agree" (Appendix A). In the following sections, the process of designing and validating the scale is explained comprehensively.

Data Collection Procedure

The first phase of this study began with an in-depth

review of the literature related to professional development to identify the related constructs of professional development. This was done to ensure the existence or absence of any models and instruments in the field of ELT. Concerning item generation, a mixture of both deductive and inductive approaches was utilized. In simple terms, the deductive approach to item generation includes a deep review of the literature, while an inductive approach depends on individual answers like requesting a sample from the target population to explain their emotions or behaviors (Cheng, 2017). Hence, the researchers not only had a thorough review of the literature on professional development but also had some semi-structured interviews with some expert EFL teachers to obtain more information. They were done for content selection and making an item pool for the questionnaire. It is essential to note that, following standard procedures is critical in developing a research instrument. Consequently, in this study, the standard procedures proposed by Dornyei (2003) were followed. Consequently, the comprehensive review of the relevant literature facilitated the ground for the researchers to design the first draft of the questionnaire, which included 80 items that dealt with the initial constructs and concepts related to teachers' professional development.

At the outset, the construct of professional development was defined theoretically as well as operationally. In simple words, the dimensionality of professional development was carefully identified as many constructs are multidimensional in the sense that they are comprised of several other related components. Hence, to assess such constructs, one may need to develop sub-scales to measure their different components. To this end, after defining the focal construct of the study, other sub-components were developed. Afterward, the questionnaire's format and the number of its comprising items were specified. Next, the content validity of the instrument was checked, and the degree of compatibility between the items identified in the literature and those represented in the focus group interviews was regarded as the content validity index of the scale. More specifically, to get the experts' opinion and assess the content validity of the questionnaire, five ELT experts were asked to peruse and evaluate the components and subcomponents of the newly developed questionnaire and give their recommendations for improving them. After checking the experts' views on the item's clarity and appropriateness, four items were deleted, and some were revised in both structure and the wording. Ultimately, 76 items remained for inclusion in the final version of the scale. The calculated content

validity, based on the Universal Agreement type of Scale-Level-Content Validity Index (S-CVI/UA), was found 0.87 revealing the relevance and clarity of the items.

In the second phase, to get some feedback on the structure of each of the items in the scale, check the component and sub-components, and ensure item redundancy, clarity, appropriateness, and readability, a pilot study was carried out on a sample of 50 Iranian EFL teachers with different experiences. Having the data collected in this phase, the researchers checked the reliability index of the questionnaire in order to ensure that the instrument brings about accurate data. The results of Cronbach's Alpha indicated that the newly developed questionnaire enjoyed a high level of reliability and internal consistency (α=.86). Finally, the developed questionnaire was analyzed through factor analysis (using Amos Software v.22) for weighing up the construct validity of the scale.

Data Analysis

The collected data of the current study were analyzed through EFA and CFA in order to determine the construct validity of the items by analyzing the strength of the relationship between the items. Using such analyses, the questionnaire items were categorized by the variables of the study in terms of fitness of the model to be evaluated. Likewise, the accuracy of the measurement of the structures is explored by the pertinent indices. In this stage, through CFA, it is determined whether or not the proposed and developed items can really measure what they purport to measure. It is also determined if the extracted factors are relevant to the other variables. In particular, CFA is run using Structural Equation Modeling (SEM) as a complementary to EFA to make sure the extracted pattern has both convergent/divergent validity, and the extracted model enjoys goodness of fit (Kline, 2016).

Results

Preliminary Analyses

Before analyzing the data, it was pre-processed for unengaged respondents. Thirty cases (17 constant answers and 2 cases with decreasing pattern in their answers, and 11 cases whose answers had standard deviations below 0.5) were omitted as unengaged responses as they had a decreasing pattern in their responses. Three missing responses were also replaced with the median of the nearby responses. The overall reliability was estimated in this phase, and the initial Cronbach's alpha turned out to be 0.92. The inspection

of item-total statistics to the reliability (Appendix B) showed that the deletion of five items (questions 1, 2, 22, 23, and 24) improves the reliability index. After discarding these items, the estimated reliability index became 0.93.

Exploratory Factor Analysis for the Designed Questionnaire

Construct-related validity refers to the degree to which the result of an instrument can "reflect the theory behind the psychological construct being measured" (Ary et al., 2010, p. 423). In simple words, the purpose is to indicate that the instruments do tap the psychological construct claimed to be measured by these instruments and nothing else. One of the common ways to establish the construct validity of an instrument is through the statistical procedure of factor analysis (exploratory and confirmatory) (Loehlin, 2004; Thompson, 2004). As the purpose of the study was to do path analysis, the EFA was run using Maximum Likelihood (ML) extraction and Promax rotation to find the existing pattern. The first output table, that is the Kaiser–Meyer–Olkin measure (Table 1), shows statistics on the sampling adequacy for the analysis of the questionnaire (KMO = .83) which is acceptable according to Field (2005). Bartlett's test of sphericity was also found significant, with a p-value equal to 0.00, indicating large enough correlations between items; therefore, this sample can be considered adequate for running EFA.

The inspection of the initial variances explained showed the existence of 19 factors, explaining 55.40% of the total variance. However, 12 of the identified factors had less than 3 items with loadings above 0.4. Therefore, the EFA was rerun with 7 fixed factors. According to Figure 1 and Table 2, the 7 main factors explain 38.11% of the variance.

Table 1

KMO and Bartlett's Test

Kaiser–Meyer–Olkin Measure of Sampling Adequacy.		*.83*
Bartlett's Test of Sphericity	Approx. Chi-Square	8466.51
	Df	2850
	Sig.	.00

Figure 1

Scree Plot for the Professional Development Questionnaire
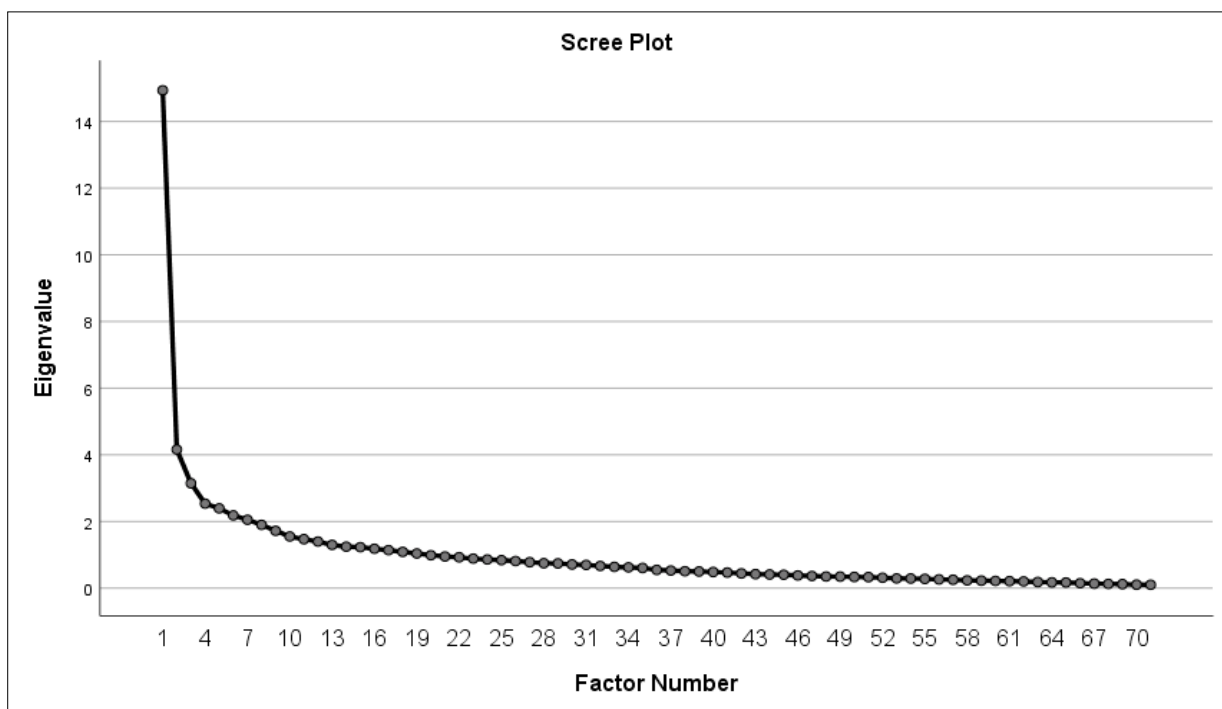
Table 2

Total Variance Explained

Factor	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings[a]
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total
1	14.93	21.03	21.03	14.29	20.13	20.13	11.29
2	4.15	5.85	26.89	3.46	4.88	25.01	9.40
3	3.14	4.43	31.32	2.41	3.40	28.41	9.76
4	2.53	3.57	34.89	2.06	2.91	31.32	6.84
5	2.39	3.37	38.26	1.82	2.57	33.89	4.30
6	2.18	3.07	41.34	1.59	2.25	36.15	4.60
7	2.05	2.89	44.23	1.46	2.05	38.21	3.01
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.							
.							
71	.10	.14	100.00				

Extraction Method: Maximum Likelihood.

a. When factors are correlated, sums of squared loadings cannot be added to obtain a total variance.

Table 3 presents the pattern of the 7 factor loadings after Promax rotation. 22 questions did not have loadings above 0.4 (suppressed in the table); thus, they were excluded from the questionnaire leaving the final scale with 49 items. The eliminated items have been highlighted in the scale presented in Appendix A.

Table 3

Pattern Matrix[a]

	Factor 1	2	3	4	5	6	7		Factor 1	2	3	4	5	6	7		Factor 1	2	3	4	5	6	7
Q03								Q30			.42					Q54	.58						
Q04								Q31			.49					Q55	.69						
Q05								Q32			.44					Q56	.65						
Q06						.43		Q33			.57					Q57	.57						
Q07								Q34			.42					Q58	.69						
Q08					.52			Q35								Q59	.64						
Q09					.86			Q36			.43					Q60	.48						
Q10					.76			Q37								Q61	.73						
Q11				.69				Q38								Q62	.64						
Q12				.58				Q39								Q63	.40						
Q13				.61				Q40								Q64							
Q14				.69				Q41			.45					Q65	.43						
Q15								Q42			.65					Q66		.40					
Q16				.42				Q43			.51					Q67							
Q17								Q44								Q68		.43					
Q18						.64		Q45								Q69		.40					
Q19						.56		Q46								Q70							
Q20						.69		Q47								Q71							
Q21						.64		Q48								Q72		.70					
Q25			.54					Q49	.40							Q73		.70					
Q26			.89					Q50								Q74		.85					
Q27			.82					Q51								Q75		.66					
Q28			.66					Q52	.60							Q76		.53					
Q29			.45					Q53	.59														

Note. Extraction Method: Maximum Likelihood. Rotation Method: Promax with Kaiser Normalization. a. Rotation converged in 12 iterations.

Referring to the content of the questionnaire, it was evident that the obtained pattern kept the large proportion of the original categorization of the questionnaire with only a slight change: a factor (sixth factor) in the original questionnaire was omitted, as the loadings were lower than 0.4. Moreover, three questions from the seventh factor in the developed questionnaire showed loadings to the fifth one. The obtained factors from the analysis were, thus, named as follows: Factor 1: belief about development; Factor 2: means of development, Factor 3: needs of development; Factor 4: beneficiaries of development; Factor 5: motivators of development; Factor 6: methods of development; and Factor 7: obstacles of development.

Confirmatory Factor Analysis for the Designed Questionnaire

In this study, as a supplement to EFA, CFA was utilized to provide evidence for the underlying structure of the designed questionnaire by using Amos software. Based on the CFA, first, the relationship between each item with its sub-factor and then the association between each sub-factor of the suggested model was analyzed. To check the model fit, the goodness of fit indices were used. The initial model based on the pattern matrix obtained above had $\chi 2/df$ of 1.77, Comparative Fit Index (CFI) of .85, the Root Mean Square Error of Approximation (RMSEA) of .05, the Standardized Root Mean Square Residual of .06, and PClose of .00. In order to improve the model fit, the modification proposed by the software which had a positive threshold of 10 were taken into account. Figure 2 shows the modified model based on standardized estimates (Appendix B for values of standardized and unstandardized estimates as well as the covariances). Table 4 also shows the model fit measure of the initial model and the cut-off criteria for each index based on Gaskin and Lim (2016).

Figure 2

The modified model
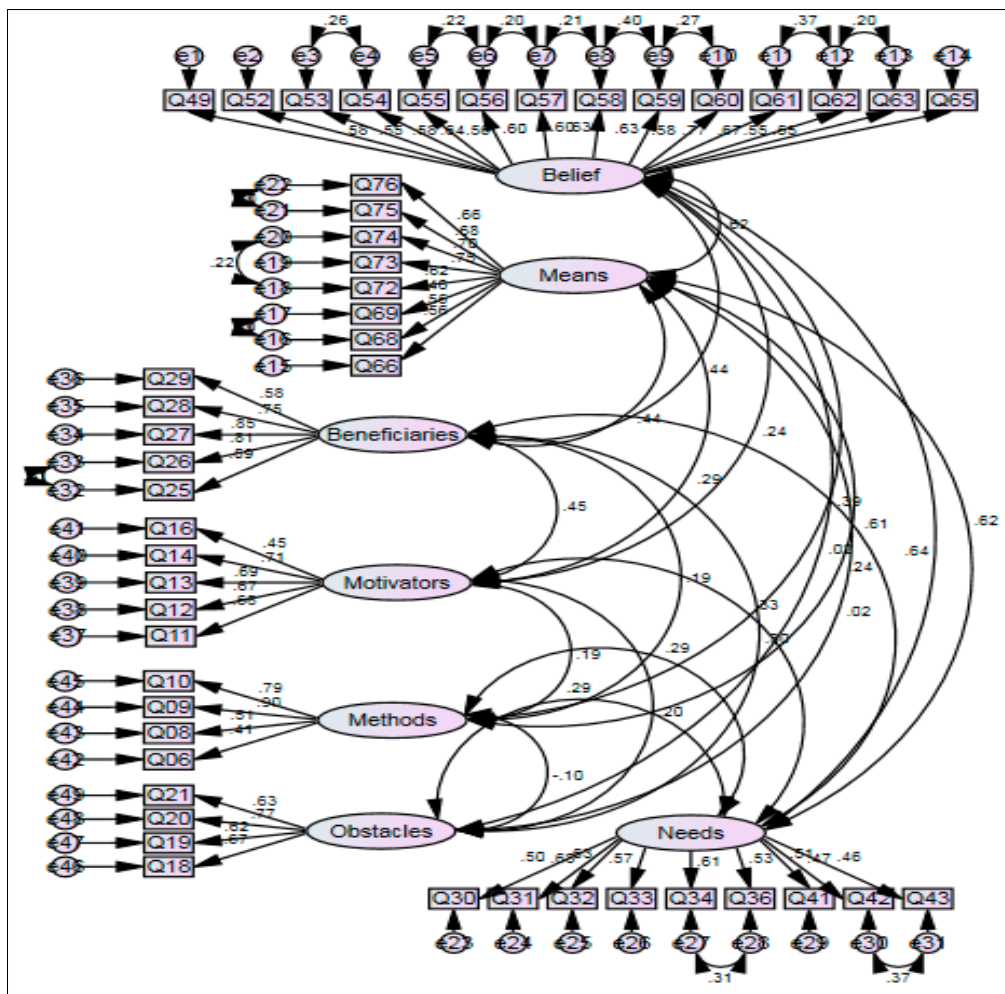
Based on the results reported above, the model can be considered as having excellent goodness of fit measures, according to Gasking and Lim (2016). Finally, the reliability and validity of the developed questionnaire were checked through composite reliability as well as Fornell and Larcker (1981) criterion.

According to Fornell and Larcker (1981), Composite Reliability (CR) is a measure of reliability with less bias than Cronbach's alpha and values above 0.7 are acceptable. As reported in Table 5, the reliability indices for all factors in the model were acceptable. Moreover, according to them, the discriminant validity of a model can be examined by comparing the amount of the variance captured by the construct and the shared variance with other constructs. As reported in the table, the square root of average variance explained by each factor (the bold values in the table) was larger than the shared variances (values in their respective rows and columns). Therefore, the validity of the model was also ensured.

Discussion

The present study was a bid to explicate the development and validation of a research instrument for gauging EFL teachers' professional development

with various teaching experience levels. To this aim, a model was created through CFA as a supplement to EFA. The model was utilized to inspect the construct validity of a proposed seven-factor model. As pinpointed previously, the hypothetical model was developed based on an in-depth review of the literature pertinent to teacher professional development and was then scrutinized on a sample of 242 EFL teachers using EFA and CFA. Using CFA, the fitting results of the model and its indicators demonstrated that all the factors were measured by the matching questions of that factor. To be more specific, the seven components proposed by the model were well−substantiated by the gleaned data.

The seven components or factors of the instrument in this study include Beliefs, Means, Needs, Beneficiaries, Motivators, Methods, and Obstacles of teachers' professional development. The results are partially comparable to those of Badri et al. (2016), who explored teachers' perceptions of professional development and its underlying components in Abu Dhabi. The results of their study pointed to professional development needs, barriers, activities, and different forms of development as the underlying factors of teacher professional development. The findings can be attributed to the context of Iran and the background of the participants who might care about their immediate needs, motivators, obstacles,

Table 4

The Goodness of Fit criteria and obtained Indices

Measure	Cut-off Criteria			Obtained Results		
	Terrible	*Acceptable*	*Excellent*	*Initial Model*	*Modified Model*	*Evaluation*
χ2/df	>5	>3	>1	1.77	1.55	Excellent
CFI	<0.90	<0.95	>.095	0.85	0.09	Acceptable
SRMR	>0.1	>0.08	<0.08	0.06	0.06	Excellent
RMSEA	>0.08	<0.08	<0.06	0.05	0.04	Excellent
PClose	<0.01	<0.05	>0.05	0.00	0.78	Excellent

Table 5

Reliability and Validity of the Model

	Composite Reliability	*Fornell & Larcker Criterion*						
		Belief	*Means*	*Needs*	*Beneficiaries*	*Motivators*	*Methods*	*Obstacles*
Beliefs	0.89	**0.60**						
Means	0.83	0.62	**0.63**					
Needs	0.79	0.64	0.61	**0.65**				
Beneficiaries	0.84	0.43	0.43	0.60	**0.72**			
Motivators	0.77	0.24	0.28	0.32	0.45	**0.64**		
Methods	0.76	0.38	0.23	0.29	0.19	0.19	**0.68**	
Obstacles	0.77	0.01	0.02	0.29	0.29	0.19	-0.10	**0.67**

and methods to gain the desired level of professional development. In the present study, the two components of beneficiaries and motivators vary from those of Badri et al. (2016) which signifies the importance of factors that encourage teachers to partake in professional development courses and the stakeholders who can benefit from such courses. This means that EFL teachers in the context of Iran are concerned about the values and prompters of professional development programs, and that the beneficiaries of the programs play a part in the degree of participation in such courses.

The results are also relatively consistent with those of Ayyoobi et al. (2016), who conducted a descriptive-survey study in Iran and examined 400 high school teachers to identify the components of teacher's professional development. Applying EFA and CFA, they found eight components for the construct of teacher professional development, including thematic knowledge, learning environment, cooperation, educational technology, research base, educational designing, evaluation, and human resource development. Most of these factors resemble the "needs", "beliefs", and "methods" of promoting teachers' professionalism. This is again attributed to the context of Iran in which the teachers highlight needs analysis in all areas of education and the methods to fulfill such teachers' needs.

Quite differently, Khany and Azimi (2016) ran a study on validating a scale to measure teachers' professional development with an initial tentative scale of 130 items being distributed among a sample of 400 EFL teachers. The analyses led to the removal of 28 items in their sample, resulting in a final 102 teacher professional development inventory. Their proposed teacher's professional development scale comprised three components of knowledge, skill, and teacher's professional development programs, and all the items were categorized under such headings. What is fresh about the results of the current study is that the proposed scale goes beyond the three components of Khany and Azimi's (2016) inventory as teacher's professional development is a broad pedagogical domain which includes many sub-components that need to be examined. In examining the various components and dimensions of PD in relation to the teachers' perceptions and views, it is also crucial to consider Koellner and Jacobs' (2015) continuum with the specificity of PD activities at one end and adaptability at the other end. However, it is still unclear which dimensions or components of TPD are more or less adaptable.

As for the items in each of the extracted factors in the current research, the first component of teacher's professional development in this study included 14 items, each presenting a different view on what the definition of teacher's professional development is. The second component included 8 items concerning the means of development. The logic behind including various forms of instilling professional development in EFL teachers in the present scale is that the current teacher's professional development programs offered in many language education institutes, academies, or societies like Teaching English Language and Literature Society of Iran (TELLSI) are more concerned with theoretical issues rather than practical issues of what basically creates a professionally developed teacher in an EFL context. Put it more tellingly, such programs generally go for transferring theoretical rather than practical points. Nevertheless, EFL teachers need more practical ways or shortcuts to become familiar with different methods of teaching. Likewise, 9 items were related to the third component, which was on the needs for development. This component covered different areas in which the teachers might find themselves in need of development. This component and its items are consistent with Shabani et al.'s (2019) study in which the teachers expressed their needs for having in-service courses on management and communication skills, educational technology, assessment, and curriculum development. The fourth component, represented through 5 items, dealt with the implications of teacher's professional development for different parties or beneficiaries. The sixth component of the present scale was comprised of 4 items on teacher's professional development methods. Finally, the seventh component included 4 items dealing with different barriers or obstacles of teacher's professional development.

All in all, the present study calls for the need to develop EFL teachers professionally and design proper measures of professional development in light of EFL teachers' instant needs in non-native settings. Programs that cover the underpinning factors of professional development can develop our theoretical and practical understanding by presenting an evaluation of multi-competences involved in teacher professional development. By asking teachers' personal opinions about their desired professional development programs, the administrators can design courses, which are necessary for most EFL teachers. This scale sparks a light in Iranian EFL teachers and spurs them to grapple, constantly, with developing their professional level and have continuous progress in their career.

Conclusion

The current study aimed to give a vivid understanding of the various components of TPD by validating a scale in Iranian EFL context. The research results have suggested that there are 7 discrete components, encompassing the Beliefs, Means, Needs, Beneficiaries, Motivators, Methods, and Obstacles of teachers' professional development. In tune with the findings of the present study, which was prompted by an absence of a comprehensive scale for gauging EFL teachers' perception of professional development, it can be concluded that this scale can be used for the analysis of teachers' PD needs, their PD perceptions, and self-appraisal. Likewise, language and teacher training centers can take advantage of this validated research instrument to measure teachers' PD and get a clear image of their teachers' PD status. They need to assess the teachers' knowledge, skills, needs, competencies, and beliefs about PD programs to tailor such programs to the practical and immediate needs of the teachers. The components proposed in the developed scale are significant for the teachers, and they are expected to possess and translate them into their own daily teaching and learning practices in the classroom. Consequently, the results of the present study can be useful for EFL contexts both theoretically and practically. Theoretically, it can raise the stakeholders' knowledge of what constitutes a professional EFL teacher. Practically, the findings can improve and enrich the PD courses, which are mostly concerned with teaching language skills. As a case in point, researchers in the field of ELT can utilize this newly designed and validated questionnaire for EFL teachers' professional development to pinpoint the factors that lead to their professional growth. In the same manner, the questionnaire is of significance for language policymakers and materials developers in that they can consider its extracted factors, the concept, influential factors, preventive factors, beneficiaries, gaps, practices, perceptions, and techniques required to develop teachers' professional development, when they are developing ELT materials, syllabi, and curricula. Policymakers of education can also make macro-level plans and decisions in which all EFL teachers are expected to go through PD courses depending on their experience and needs. Finally, this study is beneficial for teacher education programs by demanding a shift in their conceptualizations of teacher training. Such programs can improve by incorporating effective issues related to teachers' professional development, which were presented in this study.

To bring the study to an end, it is worth noting that owing to the particularities and idiosyncrasies of every context, the application of the proposed questionnaire in the current study in other settings may need more contemplation, operationalization, and replication studies. However, the developed and validated instrument in this study can be a suitable tool for supervisors, coordinators, teacher educators, and researchers, determining the teachers' level of professional development in a similar EFL context.

Declaration of Competing Interest

None declared.

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Appendix A

Teacher's Professional Development Questionnaire

Please answer each item by ticking the box corresponding to the option that best describes you.

1: Strongly Disagree 2: Disagree 3: Undecided 4: Agree 5: Strongly agree

Items	*1 Strongly Disagree*	*2 Disagree*	*3 Undecided*	*4 Agree*	*5 Strongly agree*
Professional development refers to 1. Training programs organized by the Ministry of Education 2. Training programs organized by schools. 3. Reading scholarly journal articles about language teaching. 4. Observing classes of other teachers. 5. Being observed by other teachers or supervisors 6. Searching for new teaching ideas and techniques in books or online through internet resources. 7. Attending workshops and conferences organized by other teachers. 8. Reflective teaching. 9. Teacher research engagement. 10. Teacher action research.					
Features which encourage you to pursue professional development 11. Career advancement. 12. Students' progress. 13. Getting a raise. 14. Self-fulfilment and job satisfaction. 15. A desire to learn new things about language teaching. 16. Social prestige or organizational acknowledgment.					
Factors which hinder you from pursuing professional development 17. Lack of time and a busy schedule 18. Lack of resources 19. Expenses of professional development activities 20. Unavailability of professional development programs. 21. The location the professional development programs are taking place in. 22. Not feeling the need, feeling these programs cannot help or you already know what you need to know 23. Not being required or mandated by the system 24. Not being motivated or encouraged enough to do so					
Those who would benefit most from teacher professional development 25. The teacher 26. The students 27. The school or institution 28. The community 29. Administrators and those who set up these programs					
Areas of teaching which need more training and development in 30. Subject matter or content knowledge 31. Teaching methods 32. Materials development 33. Classroom management 34. Assessment and evaluation 35. Technology 36. Psychology of teaching and professional behaviour					

Items	1 Strongly Disagree	2 Disagree	3 Undecided	4 Agree	5 Strongly agree
The selection of professional development activities or programs should be done by					
37. You select them yourself					
38. The school administrator					
39. The supervisor					
40. Language policy makers					
Beliefs about Professional Development					
41. Teachers should plan for their future professional development.					
42. The opportunities and experiences we have had for professional development in the past would help us in our teaching.					
43. Our school needs to support and encourage teachers' professional development and training.					
44. Our school or institution needs to organize continuous training and professional development courses for us.					
45. Teachers need to take the initiative to develop professionally.					
46. Teachers' annual appraisals need to take professional development into consideration.					
47. Teachers need to have more training and professional development opportunities.					
48. What we learn in training and professional development programs can be applied in our classrooms.					
49. Training and professional development programs are great investments in time, money, and teaching efforts.					
50. Professional development and in-service training programs are useful for both novice and experienced teachers,					
51. Training on how to use technology is effective professional development.					
52. Training on social media tools (i.e. Facebook, Twitter, Blogging, Glogster, Skype, etc.) is effective professional development.					
53. Professional development on addressing teacher beliefs and attitudes about instruction and pedagogy is effective professional development.					
54. Training on effective Instructional Strategies for use in the 21st Century classroom is effective professional development.					
55. Training on Problem-Based Learning strategies is effective professional development.					
56. Professional development on Project-Based Learning strategies is effective professional development.					
57. Professional development activities provide ideas and strategies that are helpful with classroom management.					
58. Professional development provided adequately addresses the need for strong teacher-student relationships.					
59. Ongoing professional development activities improve school climate and discipline.					
60. Professional development activities should be relevant to the teachers' needs to improve school climate and discipline.					
61. Professional development activities should provide adequate practice of the strategies and ideas introduced.					
62. Teachers should be provided with adequate follow-up to the professional development activities.					
63. Teachers should be given the opportunity to provide feedback on the professional development activities.					
64. University courses should provide teachers adequate training to promote professional development.					
65. Training for using Inquiry-Based Instruction strategies in the classroom is effective professional development.					

Items	1 Strongly Disagree	2 Disagree	3 Undecided	4 Agree	5 Strongly agree
Professional Development happens through 66. Learning new material/strategies in collaborative teams 67. Learning new material/strategies individually 68. Using online resources (training manuals, videos, professional development websites, etc.) to learn new material/strategies 69. Learning new material from an individual, face to face interaction 70. Short, one-time workshops 71. Ongoing learning on a topic 72. Learning from other teachers 73. Learning from an expert in the field 74. Observing other classrooms 75. Attending training courses 76. Learning from a professional development program					

Appendix B

Item Total Statistics and Standardized and Unstandardized Regression Weights and Covariances

	Item total statistics to the initial reliability		Latent variable	Standardized Estimates	Unstandardized Estimates		
	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted		Estimate	Estimate	C.R	Sig.
Q01	.172	.93					
Q02	.137	.93					
Q03	.289	.92					
Q04	.228	.92					
Q05	.253	.92					
Q06	.312	.92	Methods	.41	1.00		
Q07	.282	.92					
Q08	.294	.92	Methods	.51	1.21	5.19	.000
Q09	.317	.92	Methods	.90	2.28	6.10	.000
Q10	.312	.92	Methods	.79	1.95	6.11	.000
Q11	.268	.92	Motivators	.67	1.00		
Q12	.348	.92	Motivators	.66	1.02	8.38	.000
Q13	.294	.92	Motivators	.68	1.12	8.52	.000
Q14	.433	.92	Motivators	.71	.96	8.73	.000
Q15	.349	.92					
Q16	.267	.92	Motivators	.45	.73	5.98	.000
Q17	.271	.92					
Q18	.170	.92	Obstacles	.67	1.00		
Q19	.189	.92	Obstacles	.61	.80	7.75	.000
Q20	.177	.92	Obstacles	.77	1.13	8.80	.000
Q21	.223	.92	Obstacles	.63	.90	7.87	.000
Q22	.032	.93					
Q23	.140	.93					
Q24	-.006	.93					
Q25	.492	.92	Beneficiaries	.59	1.00		
Q26	.491	.92	Beneficiaries	.80	1.12	10.68	.000
Q27	.517	.92	Beneficiaries	.85	1.22	9.22	.000
Q28	.540	.92	Beneficiaries	.75	1.17	8.68	.000
Q29	.431	.92	Beneficiaries	.58	1.03	7.29	.000
Q30	.398	.92	Needs	.50	1.00		
Q31	.517	.92	Needs	.68	1.25	6.84	.000
Q32	.480	.92	Needs	.63	1.17	6.57	.000
Q33	.408	.92	Needs	.56	1.26	6.21	.000
Q34	.518	.92	Needs	.60	1.19	6.42	.000
Q35	.450	.92					
Q36	.425	.92	Needs	.53	.93	5.93	.000
Q37	.281	.92					
Q38	.198	.92					
Q39	.183	.92					
Q40	.287	.92					

	Item total statistics to the initial reliability		Latent variable	Standardized Estimates	Unstandardized Estimates		
	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted		Estimate	Estimate	C.R	Sig.
Q41	.474	.92	Needs	.51	.96	5.82	.000
Q42	.438	.92	Needs	.47	.86	5.50	.000
Q43	.483	.92	Needs	.46	.77	5.44	.000
Q44	.537	.92					
Q45	.533	.92					
Q46	.572	.92					
Q47	.524	.92					
Q48	.471	.92					
Q49	.497	.92	Belief	.58	1.00		
Q50	.468	.92					
Q51	.462	.92					
Q52	.469	.92	Belief	.54	.93	7.02	.000
Q53	.455	.92	Belief	.58	.95	7.35	.000
Q54	.524	.92	Belief	.64	1.01	7.85	.000
Q55	.385	.92	Belief	.56	.88	7.17	.000
Q56	.440	.92	Belief	.60	.93	7.49	.000
Q57	.476	.92	Belief	.60	.91	7.51	.000
Q58	.522	.92	Belief	.63	1.10	7.78	.000
Q59	.477	.92	Belief	.63	1.08	7.76	.000
Q60	.464	.92	Belief	.57	.92	7.28	.000
Q61	.613	.92	Belief	.76	1.14	8.86	.000
Q62	.553	.92	Belief	.66	.99	8.06	.000
Q63	.519	.92	Belief	.54	.76	7.02	.000
Q64	.430	.92					
Q65	.468	.92	Belief	.54	.85	7.00	.000
Q66	.463	.92	Means	.56	1.00		
Q67	.327	.92					
Q68	.510	.92	Means	.54	.88	6.64	.000
Q69	.427	.92	Means	.48	.91	6.05	.000
Q70	.292	.92					
Q71	.339	.92					
Q72	.429	.92	Means	.62	1.05	7.25	.000
Q73	.511	.92	Means	.74	1.18	8.15	.000
Q74	.451	.92	Means	.70	1.10	7.83	.000
Q75	.525	.92	Means	.67	1.05	7.67	.000
Q76	.546	.92	Means	.65	1.10	7.50	.000

Covariances

			Estimate	S.E.	C.R.	P
Belief	<-->	Means	.16	.03	5.17	.000
Belief	<-->	Needs	.15	.03	4.92	.000
Belief	<-->	Beneficiaries	.13	.03	4.46	.000
Belief	<-->	Motivators	.07	.02	2.89	.004
Belief	<-->	Methods	.07	.02	3.69	.000
Belief	<-->	Obstacles	.00	.03	.213	.831
Means	<-->	Needs	.13	.02	4.74	.000
Means	<-->	Beneficiaries	.12	.02	4.34	.000
Means	<-->	Motivators	.07	.02	3.21	.001
Means	<-->	Methods	.04	.01	2.67	.007
Means	<-->	Obstacles	.01	.03	.30	.758
Needs	<-->	Beneficiaries	.15	.03	4.82	.000
Needs	<-->	Motivators	.08	.02	3.42	.000
Needs	<-->	Methods	.04	.01	2.98	.003
Needs	<-->	Obstacles	.10	.03	3.12	.002
Beneficiaries	<-->	Motivators	.14	.03	4.59	.000
Beneficiaries	<-->	Methods	.03	.01	2.32	.020
Beneficiaries	<-->	Obstacles	.13	.04	3.39	.000
Motivators	<-->	Methods	.03	.01	2.27	.023
Motivators	<-->	Obstacles	.09	.04	2.31	.021
Methods	<-->	Obstacles	-.03	.02	-1.29	.197
e32	<-->	e33	.11	.03	3.54	.000
e30	<-->	e31	.18	.03	5.03	.000
e27	<-->	e28	.14	.03	4.08	.000
e21	<-->	e22	.10	.02	3.62	.000
e18	<-->	e20	.07	.02	2.70	.007
e16	<-->	e17	.10	.03	2.87	.004
e12	<-->	e13	.07	.02	3.06	.002
e11	<-->	e12	.11	.02	4.57	.000
e9	<-->	e10	.14	.03	4.04	.000
e8	<-->	e9	.21	.03	5.58	.000
e7	<-->	e8	.10	.03	3.39	.000
e6	<-->	e7	.09	.03	3.05	.002
e5	<-->	e6	.10	.03	3.18	.001
e3	<-->	e4	.12	.03	3.50	.000