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## An investigation into Iranian EFL teachers' knowledge sharing on Google Meet and self-efficacy: The mediating role of professional development

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### Abstract

Given the complex and multi-faceted nature of teaching and learning English in general and in English as a Foreign Language (EFL) contexts in particular and the ever-increasing integration of technology into second language curricula, it is incumbent upon EFL teachers to reflect on their teaching processes to incorporate new technological software and applications into their classrooms. In addition, a dearth of empirical and conceptual studies can be found in the literature on knowledge sharing and its relationship with teachers' professional development and self-efficacy. Accordingly, the study investigated a structural model of EFL teachers' knowledge sharing, professional development, and self-efficacy. About 83 EFL teachers in ten language schools were selected based on convenience sampling as the study's participants. Three questionnaires were used to collect the quantitative data, which were analyzed through descriptive statistics, Pearson's correlation coefficient test, multiple regression, and path analysis. The findings revealed a significant relationship between EFL teachers' knowledge sharing on Google Meet and their professional development. A significant relationship was found between EFL teachers' professional development and their self-efficacy. It was also confirmed that EFL teachers' professional development mediates the relationship between knowledge sharing and their self-efficacy. The effectiveness of training teachers to use online technology is discussed.

#### Keywords:

EFL Teachers,  
Knowledge  
Sharing,  
Google Meet,  
Self-Efficacy;  
Professional  
Development,  
Quantitative  
Method

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## Introduction

On the implementation side of almost every pedagogical enterprise within a global perspective, teachers have been considered as a critical cornerstone. To adequately serve such a decisive role, teachers in general and language teachers, in particular, must possess both individually-oriented cognitive and affective characteristics such as high levels of motivation and self-efficacy as well career-related and professional skills such as class management and knowledge-sharing strategies. To this end, many innovative ideas and empowering techniques have been proposed from the mid-1980s onwards to assist prospective and in-service teachers in their inspiring profession. These ideas were later reconciled through teacher development and teacher education programs.

Such programs aim to prepare EFL teachers through instruction/training to get them acquainted with basic and professional teaching skills and strategies to enhance students' language learning. Teachers' professional development appears to be more of a process than a product in that teaching is dynamic, challenging, and, more importantly, ongoing. As Shaver (2010) notes, professional development is posterior to teacher education courses, where development goes on a slower, steady pace as teachers find themselves in the real classroom with all its dynamism, diversity, and particularity. Continual professional development is deemed as a process through which language teachers become capable of cultivating fresh working solutions and demystifying their hoary illusions for the ever-dynamic exigencies of their profession by constant exposure to professional update plans (Drossel & Eickelmann, 2017; Jakhaia, 2018; Miefa, 2004).

In practice, general learning problems occur more frequently and more specific ones less frequently in an ordinary classroom, so the teacher needs to react spontaneously and adequately. Depending on their type, severity, and frequency, teachers may adopt various strategies to tackle such problems. Such a state of affairs entails an unequivocal commitment of EFL teachers to seek opportunities for continual development.

The existing literature on teacher professional development reveals that several effective professional development strategies and initiatives depend heavily on the teachers' technology, computer, and internet skills. Such strategies include online workshops, teaching (e-)portfolios, peer knowledge sharing, and teacher support groups (Alimirzaii & Ashraf, 2016; Bhatt, 2021; Daniel, 2010; Richards & Farrell, 2005). Research on technology training for teachers brings two significant approaches to the fore: A one-course approach prioritizing the teaching of technology, which seems to be inadequate and too technical (Desjardins & Peters, 2007; Lambert et al., 2008) and the technology infusion during teacher education courses the primary concern of which is exposing teachers to technology continuously (Kiliçkaya & Seferoğlu, 2013). It stands to reason that technology and CALL applications empower teachers to integrate them into their classrooms and advance their professional development. The use of CALL applications by language teachers has also been echoed in reports by the British Council

(2016, 2019). In a nutshell, CALL applications can significantly contribute to the professional development of EFL teachers by enabling them to personalize learning; that is, CALL apps often offer adaptive learning features, enabling teachers to experience personalized learning which they can apply in their subsequent professional development endeavors (Tafazoli & Meihami, 2023).

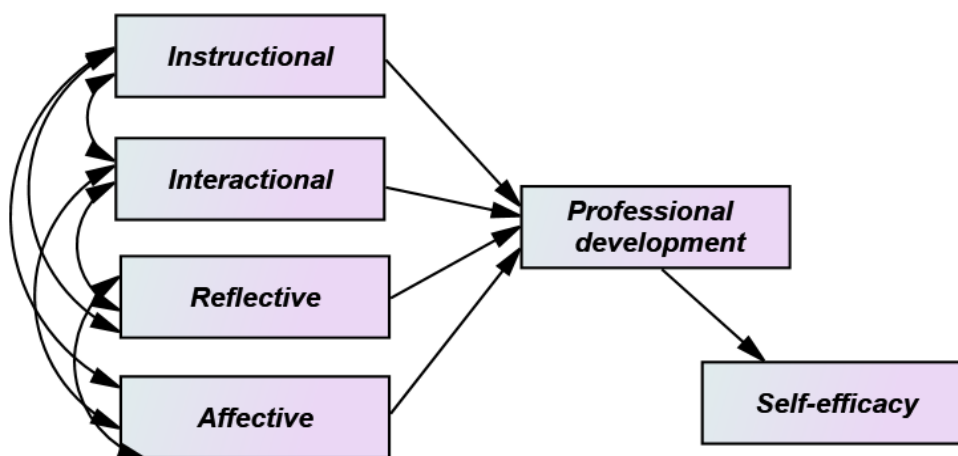
Additionally, professional development entails teachers to create content now and then. Many CALL apps permit teachers to create customized content. Getting familiar with developing second language materials on these platforms can enrich their curriculum design and content creation abilities. Moreover, most CALL apps benefit from assessment and feedback add-ins, helping teachers envisage their professional progress. More specifically, certain CALL apps facilitate the formation of online communities or forums where teachers can exchange ideas and resources (Haleem et al., 2022), fostering professional networking and collaboration. Finally, using CALL apps maximizes research opportunities where language teachers can use them for action research, experimenting with new approaches, and measuring their effectiveness in real classroom settings.

Among most techniques and procedures conducive to professional development, EFL teachers' self-efficacy beliefs and knowledge-sharing behavior seem to correlate with their professional development (Barabadi et al., 2018).

Overall, not unlike the broader education sphere, the teaching profession is commonly characterized as inconstant, challenging, and unpredictable since the inherent variations associated with students' needs, interests, and differences are taken into account. Hence, EFL teachers must engage in activities that enhance their teaching skills and expertise (Farhady & Tavassoli, 2021). Therefore, exploring factors that have ties to their professional development appears to be of high priority (Oyedele & Chikwature, 2016). Nonetheless, previous research on the relationship between/among variables such as EFL teachers' self-efficacy, knowledge sharing through computer-assisted language learning (CALL) applications, and professional development is scarce in number (e.g., Al-Seghayer, 2022). Thus, the main impetus behind this study is to examine the relationship between Iranian EFL teachers' knowledge sharing on Google Meet, their professional development, and self-efficacy.

Many studies have been conducted on the role of self-efficacy in the language teaching process in Iran (e.g., Bakhshi et al., 2020; Gholami, 2018). In addition, it has been found that professional development programs that emphasize active learning, participation, and teacher communication have a more significant impact on improving knowledge and skills (Garet, 2001). According to past research, community practice is one of the most important pathways for successful career advancement (Schlager & Fusco, 2003). The community members share their expertise and work together to develop an effective learning atmosphere that is collaborative and dynamic. Techniques and activities in the community of practice "facilitate learning from and with each other . This includes learning through formal as well as informal activities, and learning from

sources outside as well as inside the community” (Mai et al., 2020, p. 141). Moreover, it has been found that professional development programs promote university instructors’ self-efficacy (Ibrahim et al., 2020; Pekkarinen & Hirsto, 2017; Tenzin et al., 2019). However, a dearth of empirical and conceptual studies can be found in the literature on knowledge sharing and its relationship with teachers’ professional development and self-efficacy. Given the increasing population of students studying EFL in Iran, it is unsurprising that EFL teaching is a growing field in this country, and it is essential to reflect on teachers’ teaching processes. With this in mind, the primary purpose of this study is to examine the correlation among teachers’ knowledge sharing, professional development, and self-efficacy (see Figure 1). This investigation seems necessary for developing more effective teaching and learning contexts. As such, the following research questions were stated:



**Figure 1. Conceptual model**

- Is there a significant relationship between EFL teachers’ knowledge sharing on Google Meet and their professional development?
- Is there a significant relationship between EFL teachers’ knowledge sharing on Google Meet and their self-efficacy?
- Is there a significant relationship between EFL teachers’ professional development and their self-efficacy?
- Does EFL teachers’ professional development significantly mediate the relationship between knowledge sharing and their self-efficacy?

## Literature review

The following section underlines concepts and the current study's relevant theoretical perspectives. Since the present study sought to explore whether EFL teachers' professional development significantly mediates the relationship between knowledge sharing and their self-efficacy, it seems necessary to elaborate the concepts relevant to the study, namely: EFL Teachers' professional development, EFL teachers' professional development and their self-efficacy, EFL Teachers' professional development and their knowledge-sharing, and technology in EFL context.

### EFL Teachers' Professional Development

In English language teaching, teachers' professional development takes several forms, from participating in workshops and in-service training courses to implementing new interactive technologies such as online meetings and wikis (Morris, 2010; Rose & Reynolds, 2017). Planned professional development procedures can potentially enhance teachers' knowledge and competence and are conducive to student achievement and learning (Alexandrou et al., 2005). Professional development refers to the naturally occurring learning/ teaching experiences and also deliberate and preordained activities whose ultimate function is to benefit the individual (teacher) directly or indirectly, which enhance the efficiency and quality of education in the classroom (Day, 1999, Uştuk & Çomoğlu, 2019). Language teachers' professional development draws upon two significant drives, i.e., external and internal. On the external drive, institutional authorities incorporate certain planned professional development courses/workshops into their curricula to keep teachers updated regarding knowledge and skills. On the internal drive, teachers are intrinsically motivated to base their professional development on their teaching context, where they reflect upon their practice and experience to enhance their teaching.

The very social nature of teaching entails teachers being vigilant of accountability, i.e., constantly attentive to all expectations to find novel methods and techniques to advance students' learning. Teachers' professional development is viewed as a continual sequence of teacher education that usually commences with primary training and lasts until the teacher's career (Alibakhsh & Dehviri, 2015). Among the purposes teachers commonly pursue to develop professionally are to acquire new skills, competencies, and knowledge that make them more adept at being responsive to societal expectations in the long term and to adopt the most productive instructional approaches for the enhancement of students' learning processes (Bailey et al., 2001; Mizell, 2010).

Many investigations (Drossel & Eickelmann, 2017; Mostofi & Mohseni, 2018; Novozhenina & López Pinzón, 2018; Ravandpour, 2019; Safari et al., 2020; Uştuk & Çomoğlu, 2019) have been recently conducted with a primary focus on English language teachers' professional development and its ties with their self-efficacy, classroom

management, critical thinking, and performance among other aspects. The results of these studies pointed to the dynamic interaction of professional development procedures and EFL teachers' characteristics, such as their self-efficacy, classroom management, and reflectivity.

### **EFL Teachers' Professional Development and Their Self-Efficacy**

In the social cognitive theory of Bandura (1977, 1997), self-efficacy is introduced as a socio-affective factor and generally refers to a person's picture of and belief about their potential capacity to perform specific actions at certain levels of accomplishment. The concept additionally denotes how individuals cope with challenges and complexities and manage their actions (Bandura, 1997). Teacher self-efficacy has been abundantly studied concerning factors such as professional development (Jakhaia, 2018; Karimi, 2011), performance (Mustafa et al., 2019), job resources and job demands (Skaalvik & Skaalvik, 2019), creativity (Mohebi Amin & Rabiei, 2019; Shaari et al., 2014), and knowledge-sharing (Safdar et al., 2020).

Given the critical role of teachers' professional development in the process of teaching and learning, abundant research has been, as noted earlier, carried out principally within the teacher education domain of inquiry to examine the effectiveness of various techniques and interventions in promoting EFL teachers' professional development as well as to explore the relationship between professional development and more personal teacher characteristics such as self-efficacy (Muhammed Amanulla & Aruna, 2014; Pan & Franklin, 2011; Wyatt, 2018), philosophy of education (Ashraf, & Kafi, 2017), student achievement (Lu et al., 2017), classroom management (Mostofi & Mohseni, 2018), and to a lesser extent, knowledge sharing (Alimirzaii & Ashraf, 2016; Shagrir, 2010).

According to Shaalvik and Shaalvik (2007), teacher self-efficacy is a teacher's well-informed belief in their capability to manage and perform specific actions necessary to productively present, guide, and assess instruction in a given context. The findings from the previous investigations corroborate the fact that specific levels of teacher self-efficacy are substantially associated with professional development initiatives and practices (Drossel & Eickelmann, 2017; Jakhaia, 2018; Karimi, 2011).

Examining the effects of professional development initiatives on EFL teachers' degree of self-efficacy, Karimi (2011) found that specific professional development initiatives significantly enhanced teachers' beliefs in their ability. In their study on the effect of teacher efficacy on the professional development of higher secondary school teachers, Muhammed Amanulla and Aruna (2014) found that teachers' efficacy was positively correlated with their professional development. Investigating the effect of a 25-hour professional development course on EFL teachers' self-efficacy in writing instruction in Georgia, Jakhaia (2018) examined the relationship between teachers' beliefs about teaching writing, self-efficacies in instructional strategies, and professional development. The results revealed that EFL teachers participating in the 25-hour

professional development intervention phase had higher writing-specific instructional self-efficacy.

In her study, Ravandpour (2019) examined the correlation between Iranian EFL teachers' continuing professional development and their self-efficacy. The findings disclosed that the subscales of CPD, e.g., collaborating, decision-making, reflecting, and updating, significantly predicted positive self-efficacy. The results reported by Alibakhshi et al. (2020) revealed that highly self-efficacious teachers are constantly attempting to develop professionally to quench the probable inadequacies in their self-efficacy beliefs. Safari et al. (2020) investigated the effect of EFL teachers' self-efficacy, job satisfaction, and reflective thinking on their professional development. The findings revealed that self-efficacy and job satisfaction positively predicted professional development, with self-efficacy exerting more predictive power than job satisfaction. The results also showed that reflective thinking did not predict professional development, and it was conversely predicted by professional development to some extent.

### **EFL Teachers' Professional Development and their knowledge-sharing**

As noted in the preceding sections, professional development is a continual process through which EFL teachers engage in a constant process of advancing their skills and competencies via several resources, e.g., training workshops and conferences, pre-and in-service teacher education courses, the Internet, action research, and weblogging (Saeedan et al., 2015; Zandi et al., 2014). These resources reiterate the necessary means through which teachers find an opportunity to enhance their knowledge and develop professionally. Much of this knowledge base is attained through being disseminated and shared by different members, i.e., teachers, within professional development cycles. Therefore, Knowledge-sharing is necessary for EFL teachers' professional development (Alimirzaii & Ashraf, 2016; Chen, 2006).

From among different categories of teachers' knowledge base (e.g., content knowledge, general pedagogical knowledge, curriculum knowledge, pedagogical content knowledge, knowledge of learners, knowledge of educational contexts, and educational goals), pedagogical content knowledge embodies the interface where other categories interweave (Jansem, 2014; Liu, 2014). As noted earlier, professional development appears to result from the amalgamation of various skills and abilities gained in the process of knowledge-sharing. Within a primary language teaching formulization, knowledge sharing can assist EFL teachers in building upon knowledge-based sources disseminated and provided by teachers, teacher educators, materials, and other elements of knowledge cycles such as the ongoing educational and experiential discourse to apply them in developing professionally.

Exploring the impact of online peer knowledge sharing on Iranian EFL teachers' professional development, Alimirzaii and Ashraf (2016) found that online peer knowledge sharing significantly improved Iranian EFL teachers' professional

development. In another study, Saeedan et al. (2015) examined the impact of weblogging, as a knowledge-sharing medium, on Iranian English teachers' professional development. Their study indicated that weblogging significantly influenced participating teachers' professional development.

Teachers play determining roles as highly influential agents in the development and sustainability of societies. To this end, they need to constantly reflect on their teaching practices and the effects they may have on students' learning. Due to the unpredictability of the learning process and the problems that may arise, it is incumbent upon teachers to think of ways to develop their profession to satisfy the diverse and ever-changing learning needs and problems of the learners. English language teachers' self-efficacy and knowledge sharing are among the factors that are correlated positively with their professional development (Alimirzaii & Ashraf, 2016; Ravandpour, 2019; Safari, 2020).

### **Technology in the EFL Context**

Due to the importance of technology in language teaching, language teachers have been asked to use and coordinate their teaching with technological means and incorporate technology into their content knowledge. The application of technological means such as computers, cell phones, and the Internet has paved the way for information sharing among language teachers and learners. Moreover, the nature of teaching and learning EFL has changed so drastically that by placing text, audio, and video on the World Wide Web, there is a unique opportunity to use this multimedia system in teaching and learning. Due to the advantages of this method, the application of virtual teaching and learning is growing. Furthermore, what has hastened the use of virtual education has been the COVID-19 epidemic. To prevent the spread of COVID-19, as in many countries in the world, the Iranian government ordered the closure of all schools, colleges, and institutions. As a result, the Ministry of Education implemented online classes, which have replaced face-to-face sessions. Although many studies on distance education have been undertaken in the past, it has never been as popular as it was during the pandemic (Okyar, 2022). With the advent of technology in education and its role in language teaching, teachers have been able to communicate professionally and increase their professional development by sharing their information and experiences (EdSurge, 2014). One of these tools for teaching and learning is Google Meet.

As a video communication service, Google Meet is an interactive online learning platform that assists educators in employing the lecture technique. Students can benefit from interactive learning via Google Meet regarding information acquisition and learning outcomes (Roscoe, 2014). Through Google Meet, users can hold face-to-face meetings indirectly and effectively. Its management is easy, and many participants can join the meeting simultaneously (Singh & Soumya, 2020). It should be remembered that although technology integration appeared to be effective in enhancing learners' language



achievement during the COVID-19 pandemic, the role of teachers and their preparedness to use technology effectively in their classrooms remains critical and should be examined.

## Method

### Design

To address the research questions, we adopted a quantitative and correlational design. The quantitative data were collected through three questionnaires and were analyzed using descriptive and inferential statistics.

### Participants

A sample of 83 EFL teachers teaching English in five language schools was selected as the study's participants. Following Dörnyei (2007), we applied convenience sampling because of the participants' availability and willingness to participate. Regarding the demographic characteristics of the participants, it was found that 34 were males and 49 were females. Regarding educational qualifications, there were 51 bachelor's degrees, 28 master's degrees, and 4 doctoral degrees. The participants had four to twelve years of experience. They attended a teacher training course (TTC), so the study was part of the teacher training program. It should be added that language institutes in Iran offer similar kinds of professional development training opportunities, such as workshops and educational courses, for their teachers. As part of the teacher training course, the EFL teachers were required to attend 8 sessions of online courses using Google Meet. All participants were informed that their information would be kept confidential and that they had the right to withdraw from the study anytime they wished.

### Instrumentation

#### EFL Teachers' Knowledge Sharing on Google Meet

To assess EFL teachers' views towards knowledge sharing on Google Meet, a set of 23 statements was developed with a five-point Likert scale ranging from "strongly agree" to "strongly disagree," and three experts were invited to evaluate the items. Based on their suggestions, 3 items were removed. Subsequently, in a pilot study, nine participants filled in the questionnaire in face-to-face sessions with the first researcher. They identified 4 items as confusing and provided feedback on the initial draft of the scale. Cronbach's alpha, composite reliability (CR), Varimax rotated, and average variance extracted (AVE) were used to examine the construct reliability and validity. The result is displayed in Table 1.

Table 1. Construct reliability and validity of EFL teachers' knowledge sharing on Google Meet scale

Constructs	Items	Loadings	Cronbach's Alpha (>0.7)	CR (>0.7)	AVE (>0.5)
Instructional	INS1	.853	.733	.840	.640
	INS2	.666			
	INS3	.866			
Interactional	INT1	.865	.915	.933	.737
	INT2	.882			
	INT3	.855			
	INT4	.839			
	INT5	.852			
Reflective	REF1	.807	.855	.895	.631
	REF2	.785			
	REF3	.822			
	REF4	.757			
	REF5	.800			
Affective	AFF1	.885	.842	.897	.745
	AFF2	.827			
	AFF3	.877			

According to Table 1, we used the Varimax rotated to identify the correlation matrix between items and factors and categorize each item in each factor. The correlation matrix between items and factors extracted with an eigenvalue higher than (1) after rotation, whose correlation value between items and factors fluctuated between -1 and +1. Furthermore, in AVE, the degree of correlation of a structure with its indicators, the more this correlation is greater than 0.5, the better the fit. In this study, AVE is higher than 0.6. Cronbach's alpha and composite reliability were used. The results of Cronbach's alpha coefficient showed that four variables were above 0.07, indicating an acceptable level of reliability. Convergent validity exists when CR is greater than 0.7. In this study, CR is higher than 0.8.

### **EFL teacher professional development scale**

Soodmand Afshar and Ghasemi (2018) developed a scale to measure EFL instructors' professional development. The questionnaire includes 35 items with 5 subscales. Each item is followed by a five-point Likert scale ranging from 'very much' to 'not at all'. The authors report on the validation process.

### **Teachers' self-efficacy questionnaire**

The most frequently used scale to assess teachers' sense of efficacy is TSES, developed by Tschannen-Moran and Hoy (2001). There are 12 items in the short form of the questionnaire and 24 items in its long form. A nine-point Likert scale follows each item

with five notations, i.e., nothing, very little, some influence, quite a bit, and a great deal. The questionnaire has three dimensions: instructional strategies, student engagement, and classroom management. The long scale with a reliability of 0.94 was used in the present study. The authors have reported the validation process.

### Procedure

The present study examined the relationship between EFL teachers' knowledge sharing on Google Meet, professional development, and self-efficacy. Drawing on Slavin's (1990) cooperative learning theory, Vygotsky's theory of constructivism (Galloway, 2001), and Ahmed et al.'s (2022) model of knowledge management as the framework and following Farahian and Parhamnia (2021), the first researcher who was the teacher in the language schools followed some steps in online courses in order to encourage the teachers to share knowledge (see Table, 2). It was believed that the instruction may offer the chance to encourage the teachers to find a relationship between theory and practice and cultivate self-directedness and self-awareness among teachers.

Notably, at the outset of the study, the teachers were required to form groups of three or more and sign up individually to attend the meetings on Google Meet. The participants were free to choose their group members based on preference and convenience. We thought it was necessary to have a valid reason for the teachers to work together so that they share problems and interests that need joint effort (Lave & Wenger, 1991). Therefore, the teachers came together outside the course before and after each TTC course and were required to prepare the major part of the assignments in groups.

Table 2. *The implementation of knowledge sharing among EFL teachers*

Phases		Descriptions
1	Phase	<ol style="list-style-type: none"> <li>1. Some recent theories in TEFL were discussed in the online classroom.</li> <li>2. All EFL teachers were asked to study articles or books related to the classroom discussion.</li> <li>3. EFL teachers were asked to raise a thought-provoking question.</li> <li>4. The teachers who had formed groups of three or four were required to share ideas and answer the questions.</li> <li>5. Appropriate feedback was given on the content of the answers by the researcher</li> </ol>
2	Phase	<ol style="list-style-type: none"> <li>1. The participants were required to describe a specific event or a problem</li> </ol>

that draw their attention or cause a problem and describe it in the joint group.

2. Other participants were free to share ideas and then took turns commenting on the experience or asking questions.

3. The participant/participants was/were asked If they could apply the theories they had already studied in the new context.

4. The participant(s) was/were asked to talk about how she could act differently the next time.

After eight weeks of instruction, data collection for this study took place in January and February 2020. The study collected the quantitative data through three questionnaires of knowledge sharing on Google Meet, professional development, and self-efficacy. Because of the COVID-19 lockdown, the teachers received the questionnaires via e-mail. All teachers gave informed consent to participate in the study. They were also reassured that their information would remain confidential. For this purpose, data analysis was done using descriptive statistics, Pearson's correlation coefficient test, simple linear regression, multiple regression, and path analysis, and SPSS 23 software and Amos were used.

## Results

Multiple regression was used to test the first research question. The results are illustrated in Table 3.

Table 3. *The results of multiple regression*

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Correlations		
	B	Std. Error	Beta			Zero-order	Partial	Part
	(Constant)	.201	.196					
1								
Instructional	.261	.059	.307	4.467	.000	.606	.451	.269
Interactional	.152	.052	.201	2.935	.004	.546	.315	.176
Reflective	.367	.056	.433	6.522	.000	.671	.594	.392

Affective	.211	.057	.244	3.69 1	.000	.539	.386	.222
R= .847	R2= .718	Adjusted R Square= .704	F=	Sig.= .000				
Durbin-Watson= 1.445								

Table 4, R= .847, and Adj. R<sup>2</sup> = 0.704 showed that 70% of the total changes in professional development among the participants are related to four variables: *instructional*, *interactional*, *reflective*, and *affective* in this equation. The F test is equal to 49.651, and P=<.05 shows that the regression model of the research is composed of four independent variables and P<.05. One dependent variable is a good model, and the set of independent variables has been able to explain the changes in professional development. The β standard correlation shows that the effective correlation of instructional (β=.307, t= 4.467), interactional (β=.201, t=2.935), reflective (β=.433, t=6.522), and affective (β= .244, t=3.691); so it can be inferred that these variables can explain the variance in *professional development*. In other words, by an increase of one standard deviation in instructional, interactional, reflective, and affective variables, the standard deviation of professional development will increase by 30%, 20%,43%, and 24%, respectively. The partial correlation coefficients showed that Instructional (20.34%), Interactional (9.92%), Reflective (35.28%), and Affective (14.89%) explain the variance of the dependent or mediated variable, that is, *professional development*.

Multiple regression was employed to answer the second research question. The results are illustrated in Table 4.

Table 4. *EFL teachers' Knowledge sharing on Google Meet with Teachers' self-efficacy*

Model	Standardized			t	Sig.	Correlations		
	Unstandardized Coefficients	Coefficients	nts			Zero-		
						B	Std. Error	Beta
(Constant)	1.226	.477		2.568	.012			
1 Instructional	.400	.143	.328	2.805	.006	.381	.303	.287
Interactional	.008	.126	.007	.063	.950	.195	.007	.006
Reflective	.251	.137	.207	1.835	.070	.300	.203	.188
Affective	-.056	.140	-.045	-.399	.691	.129	-.045	-.041

R= .428	R <sup>2</sup> = .183	Adjusted R Square= .141	F= 4.265	Sig.= .003
Durbin-Watson=1.757				

As Table 4 illustrates,  $R = .428$ , and  $\text{Adj. } R^2 = .141$  indicated that 14% of the total changes in self-efficacy among EFL teachers are related to four variables instructional, interactional, reflective, and affective in this equation. The F test is equal to 4.265, and  $P < .05$  shows that the regression model of the research is composed of four independent variables, and  $P < .05$ , one dependent variable, is a good model. The independent variables have been able to explain the changes in self-efficacy. The  $\beta$  standard correlation shows the compelling correlation of instructional ( $\beta = .328$ ,  $t = 2.805$ ) so it can be inferred that this variable can explain the variance in self-efficacy. In other words, by an increase of one standard deviation in instructional, interactional, reflective, and affective variables, the standard deviation of self-efficacy will increase by 32%. However, other variables, namely interactional, reflective, and affective, did not contribute to this study.

The third research question investigated whether there is a significant relationship between EFL teachers' professional development and their self-efficacy. The results are shown in Table 5.

Table 5. *The results of multiple regression*

Model		Unstandardized Coefficients		Standardized Coefficients		Correlations			
		B	Std. Error	Beta	t	Sig.	Zero-order	Partial	Part
1	(Constant)	.998	.418		2.387	.019			
	professional development	.636	.143	.444	4.460	.000	.444	.444	.444
R= .444		R <sup>2</sup> = .197		Adjusted R Square= .187		F= 19.889		Sig.= .000	
Durbin-Watson= 1.787									

According to Table 5,  $R = .658$ , and  $\text{Adj. } R^2 = 0.426$ , 43% of the total changes in teachers' self-efficacy among faculty members are related to one variable of professional development in this equation. The F test is equal to 61.883, and  $P < .05$  reveals that the regression model of the research composed of one independent variable and  $P < .05$  one dependent variable is a good model, and the independent variable has been able to explain the changes in teacher self-efficacy. The  $\beta$  standard correlation shows the effective

correlation of professional development ( $\beta=.444, t=4.460$ ); so it can be inferred that this variable can explain the variance in teacher self-efficacy. In other words, with an increase of one standard deviation in variable professional development, the standard deviation of self-efficacy will increase by 44%. The partial correlation coefficients showed that professional development (19.71%) explains the variance of the dependent or mediated variable, that is, teacher' self-efficacy.

The last research question explored whether EFL teachers' professional development mediates the relationship between knowledge sharing and their self-efficacy. To answer this question, path analysis and bootstrap were employed.

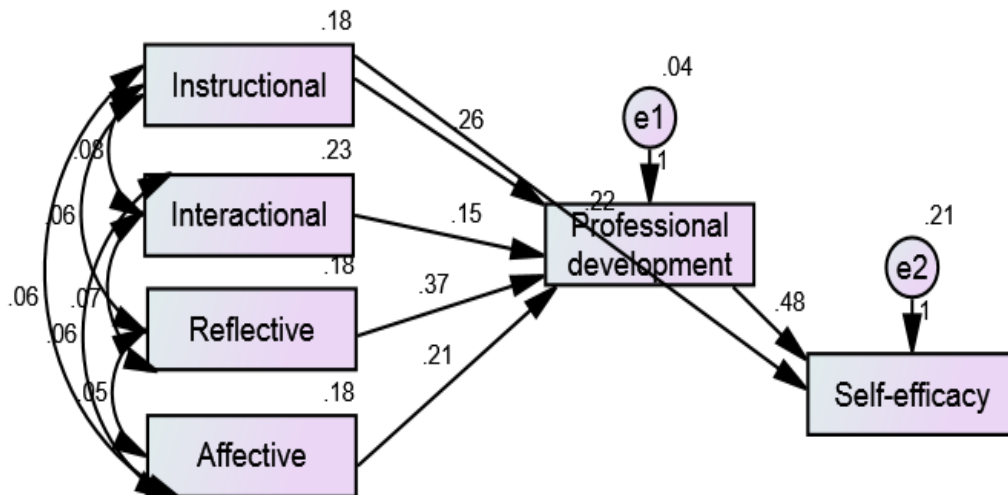


Figure 3. model

Figure 3 shows the direct effect of four educational, interactive, reflective, and emotional variables on professional development and the direct impact of the instructional variable on self-efficacy. Here, it is necessary to examine the output of the maximum likelihood estimation of the effect of independent variables on the mediator and the criterion-dependent variables. The results of this test are shown in Table 6.

Table 6. Regression Weights (Mediation effect)

		Regression Weights		Standardized Regression Weights		
		Estimate	Estimate	S.E.	C.R.	P
professional development	<- instructional	.261	.307	.057	4.580	***
professional development	<- interactional	.152	.201	.051	3.009	.003
professional development	<- reflective	.367	.433	.055	6.687	***

			Regression Weights	Standardized Regression Weights	S.E.	C.R.	P
			Estimate	Estimate			
professional development	<-	reflective	.211	.244	.056	3.785	***
Self-efficacy	<-	Professional development	.482	.336	.176	2.738	.006
Self-efficacy	<-	instructional	.217	.177	.150	1.444	.149

As Table 7 illustrates, based on the maximum likelihood estimation, the effect of the coefficient of variables, namely, instructional, interactional, reflective, and affective, on professional development is .261, 0.152, 367, and 211, respectively. In addition, considering that the P value is less than 0.05 and CR is equal to 4.580, 3.009, 6.687, and 3.758, respectively, they are more than the acceptable range of 1.96. Therefore, it can be claimed that these estimates are significant. Considering the P value, the coefficient of the effect of variable professional development (.482) on self-efficacy is less than 0.05, and CR (2.738) is more than 1.96. This estimation is also significant. However, the instructional variable (.217) was insignificant, with a P value of more than 0.05 and a critical value of less than 1.96. Thus, this parameter is considered unimportant in the model, so it was removed despite having a sufficient sample size. Therefore, the model was revised again, and the final model was developed based on Figure 4.

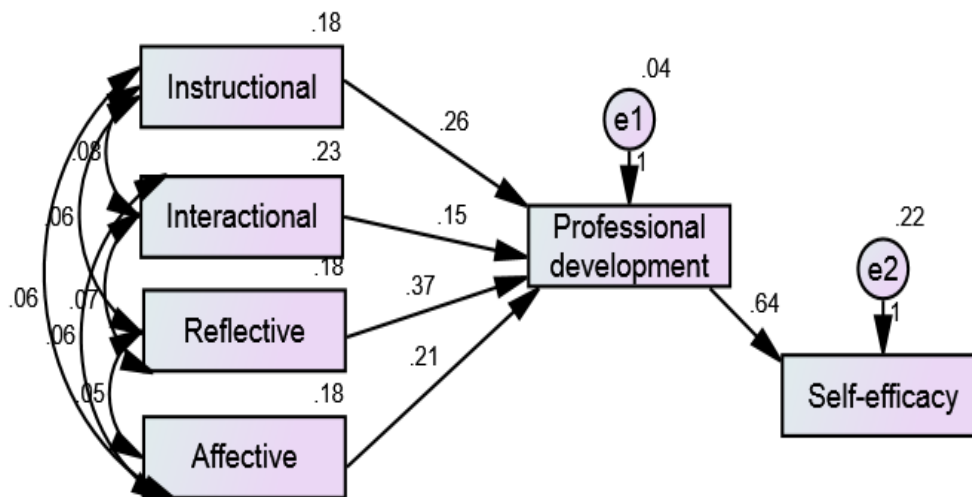


Figure 4. The final model



Figure 4 displays the effect of four variables, including instructional, interactional, reflective, and affective, on professional development and self-efficacy. Table 7 presents the results related to some of the most critical model fit indicators.

Table 7. *Index of fixed indices model*

Index name	Acceptable fit	Fitting Adequacy Value
$\chi^2/df$	<3	1.109
CMIN (P)		4.435 (.350)
Goodness of Fit Index (GFI)	>.90	.983
Adjusted Goodness of Fit Index (AGFI)	>.90	.909
Normed Fit Index (NFI)	>.90	.974
Comparative Fit Index (CFI)	>.90	.997
Incremental Fit Index (IFI)	>.90	.997
Root Mean square Residual (RMR)	<.05	.008
Root Mean Square Error of approximation (RMSEA)	<.05	.036

According to Table 7, the chi-square ( $\chi^2$ ) (CMIN) statistic is 1.109 concerning (P=.350<.05). This means that the chi-square scale is smaller than index 3. This represents a good fit for the model. Joreskog and Sorbom (1987) and Bentler (1992) have recommended not to use the chi-square value alone to judge the overall fit of the model because this statistic is sensitive to the sample size, and the larger the sample size, the more influential the test increases (cited in Meyers et al., 2006). As such, other indicators were examined in the following order. GFI measures the relative amount of variances and covariance jointly through the model. The GFI=.983 points to the optimal fit of the model. If the RMR is less than .05, the model fits very well. Here, RMR equals .008, which indicates the optimal fit of the model. The results revealed that the NFI is acceptable for values above .90, demonstrating a model fit. The index in the present model is .974. The CFI index is similar to the NFI because it is fined for the sample size. In the present model, this value is .997. The RMSEA is the mean of the residuals between the observed correlation/ covariance of the sample and the expected community model. In the present model, RMSEA=.036>.08, it can be assumed that this index is satisfactory. The result of checking the indicators in Table 10 shows that all the indicators are reported at the optimal level, and the model fits the data well.

Here, the question arises: What is the significant effect of four variables instructional, interactional, reflective, and affective through professional development on self-efficacy as a dependent variable of the criterion? The results are displayed in Table 8.

Table 8. *Standardized loadings for direct, indirect, and total effects*

<b>Predictor</b>	<b>Criterion</b>	<b>Direct effects</b>	<b>Indirect Effect</b>	<b>Total Effect</b>
Instructional	Professional	.261	.000	.261
Interactional	Professional	.152	.000	.152
Reflective	Professional	.367	.000	.367
Affective	Professional	.211	.000	.211
Professional	Teacher' self-efficacy	.636	.000	.636

A bootstrap approach of the direct and indirect effects was applied to calculate mediating effects. Table 8 displays the effect of each predictor variable, including instructional, interactional, reflective, and affective, directly and indirectly on the intermediate dependent variables, including professional development and teacher self-efficacy.

## Discussion

The present study sought the relationship between EFL teachers' knowledge sharing on Google Meet and their professional development. The first question inquired if there is a significant relationship between EFL teachers' knowledge sharing on Google Meet and their professional development. The results showed that there is a relationship between the two variables. Furthermore, the multiple regression analysis found that the subscale of teachers' knowledge sharing, including instructional, interactional, reflective, and affective, could explain the changes in the variable of professional development. This aligns with the literature, which states that one of the most significant pathways to successful career growth is through a community of practice (Schlager & Fusco, 2003). A reason for the study's findings may be attributed to the fact that members of the community contribute their knowledge and collaborate to create a collaborative and dynamic learning environment. In this regard, Gairín-Sallán and Rodríguez-Gómez (2010) state that the process of knowledge sharing contributes to the "development of continuous training in organizations as opposed to the simple sum of occasional training actions" (p.3).

Another reason for such a finding is perhaps the use of technology. New technologies and online resources for educational purposes may encourage teachers to approach professional development from a different perspective. Using communities of practice and encouraging knowledge sharing via Google Meet improves teachers' professional development by creating opportunities for teachers to interact and exchange good practices. To discuss the findings more, we can refer to the view that "professional training methods through web technologies offer a variety of alternative learning opportunities and are an inexhaustible source of information supporting professionals" (Kosmas, 2017, p. 162). The second question explored if there is a significant relationship

between EFL teachers' knowledge sharing on Google Meet and their self-efficacy. The results of Pearson's test showed that only two subscales of teachers' knowledge sharing, including instructional and reflective, had a significant relationship with self-efficacy. Furthermore, regression analysis results showed that only the instructional variable could explain self-efficacy. Such a result is partially in line with the literature (Bandura, 1997; Hsu et al., 2007; Parhamnia et al., 2021), which recognizes self-efficacy as one of the factors impacting knowledge sharing. In this regard, Bandura (2021) states that social interactions can help the individual's self-efficacy. Similarly, Shen (2015) argues that self-efficacy is the psychological manifestation of members' willingness to participate in community activity in the virtual learning community.

The third research question investigated the relationship between EFL teachers' professional development and their self-efficacy. As the findings indicate, there is a significant relationship between the two variables. The present study's findings support Karimi (2011), who investigated the potential of professional development in promoting teachers' beliefs about their teaching ability. The results showed that the teachers in the experimental group with opportunities for professional development outperformed the control group. Similarly, Yoo (2016) investigated the effect of professional development on teacher efficacy. As the researcher reported, it was revealed that the teachers' online professional development experience increased teachers' efficacy. In the same line, Zambo and Zambo (2008) explored the influence of professional development in mathematics-on-mathematics teachers' collective and individual efficacy. Based on the findings, as a result of participating in professional development programs, there was a significant increase in teachers' individual and collective efficacy. The positive impact of teachers' professional development on their efficacy comes as no surprise since effective teacher training programs have been reported to have a positive association with teacher efficacy (Kazempour & Sadler, 2015; Tuchman & Isaacs, 2011).

The fourth research question sought whether EFL teachers' professional development mediates the relationship between knowledge sharing and their self-efficacy. Path analysis and bootstrapping results indicated that four subscales of teachers' knowledge sharing variable, including instructional, interactional, reflective, and affective, could significantly affect self-efficacy through the mediation of professional development. Regarding the mediating role of EFL teachers' professional development, results indicated that the relationship between knowledge sharing and self-efficacy through professional development was positively significant. In other words, professional development had a mediating role in the relationship between knowledge sharing and self-efficacy. Teachers who share knowledge and experience in professional development tend to have high self-efficacy. This is viewed as logical because if teachers do not engage in knowledge sharing, sources of receiving innovative ideas necessary for professional development would be minimized, and consequently, teachers' self-concept may be influenced negatively. Although, to our knowledge, no studies have directly probed the

specific relationship between teachers' knowledge sharing and their self-efficacy through professional development, studies are showing a positive relationship between teachers' knowledge sharing and their professional development (e.g., Schlager & Fusco, 2003) and teachers' professional development and their self-efficacy (Karimi, 2011; Yoo, 2016; Zambo & Zambo, 2008).

## Conclusion

The present study examined the relationship between EFL teachers' knowledge sharing on Google Meet and their professional development, the relationship between EFL teachers' professional development and their self-efficacy, and the mediating role of EFL teachers' professional development in the relationship between knowledge sharing and self-efficacy. The results indicated a significant relationship between EFL teachers' knowledge sharing on Google Meet and their professional development. It was also found that there is a significant relationship between EFL teachers' professional development and their self-efficacy. Also, based on the findings, professional development mediates the relationship between knowledge sharing and self-efficacy. EFL teachers share knowledge on Google Docs and give and receive feedback on their professional development. This by itself affected the promotion of their self-efficacy. Overall, Google Meet is both convenient and less costly as teachers can get involved in sharing knowledge, constructing knowledge, and receiving comments and feedback from their colleagues.

The findings have some implications. They offer insights and guidance for educational organizations trying to promote EFL teachers' professional development. Since knowledge sharing is an essential source of information, it may contribute to teachers' self-efficacy. This means the more qualified knowledge received through interaction with other teachers, the more EFL teachers' professional development was promoted. This implies that teacher training courses can encourage EFL teachers to develop teacher-learning communities and raise teachers' awareness regarding the positive impact of knowledge sharing.

Another potential implication of the study is creating a positive atmosphere in the educational context that fosters knowledge sharing. This means that administrators must show teachers that developing a culture that fosters social trust and interaction is necessary. This can be done by encouraging formal or informal practice communities among EFL teachers. If informal knowledge-sharing communities of practice are developed, teachers would have a friendlier atmosphere, and the negative impact of power relations among colleagues would be diminished.

Similar to other studies, this study has some limitations. One of the main limitations was that the present study was conducted by recruiting EFL teachers from language institutes. Thus, the result cannot be generalized to Iranian high schools since, based on Moradkhani and Shirazizadeh (2017), these two Iranian educational settings are,

to a great extent, different in terms of learners' motivation, proficiency of teachers, and the type of curriculum. Future studies could recruit teachers from both systems of teaching. Another limitation is that the sample recruited in the study was not large enough. Accordingly, the findings are not generalizable. Further studies could employ larger samples to investigate the relationship among the variables.

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