Exploring Chinese EFL teachers' professional identity tensions in the senior high school context: A dissonance theory perspective

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ABSTRACT: Due to the great importance of professional identity in teachers' development and success, researchers' attention has recently been confined to the tensions that may challenge teachers' identities. Despite the importance of these tensions in the EFL context, only a few studies have addressed them by employing qualitative research methods. The present study aims to investigate the professional identity tensions of EFL teachers by a psychometric scale. Therefore, an instrument was developed and validated for measuring Chinese EFL teachers' professional identity tensions from the Dissonance Theory perspective by adopting the Professional Identity Tension Scale (PITS). To this end, based on the convenience sampling method, 452 Chinese EFL teachers from senior high schools participated in the study. Exploratory and SEM analyses were performed to identify and confirm the weight of the influencing factors respectively. The final instrument is a 5-point Likert-type item including 30 items measuring six different tensions related to professional identity. The findings were an indication of the applicability of PITS in the EFL context with six contributive factors. Implications of the study and suggestions for further research are discussed.

Keywords: professional identity, identity tension, dissonance theory, teachers' identity, EFL teachers

Una investigación sobre la tensión de la identidad profesional de los profesores de EFL de la escuela secundaria en China desde la perspectiva de la teoría de la disonancia

RESUMEN: Debido a la importancia de la identidad profesional en el desarrollo y el éxito de los docentes, los investigadores se han centrado recientemente en las tensiones que pueden desafiar la identidad docente. Aunque estas tensiones son muy importantes en el entorno de EFL, solo unos pocos estudios han resuelto estos problemas a través de métodos de investigación cualitativos. El objetivo de este estudio es investigar la tensión de identidad profesional de los profesores de EFL mediante una escala psicométrica. Por lo tanto, se utilizó la escala de tensión de identidad profesional (PITS) para desarrollar y verificar una herramienta para medir la tensión de identidad profesional de los profesores chinos de inglés desde una perspectiva de la teoría de la disonancia. Con este fin, 452 profesores chinos de EFL de la escuela secundaria participaron en el estudio basado en el método de muestreo de conveniencia. Se realizaron análisis exploratorios y SEM para determinar y confirmar el peso de

los factores de influencia, respectivamente. La última herramienta fue una escala Likert de 5 puntos que incluyó 30 elementos para medir seis tensiones diferentes relacionadas con la identidad profesional. Los resultados del estudio muestran que la aplicabilidad de los PITS en el entorno de EFL tiene seis factores contribuyentes. Se discutieron las implicaciones del estudio y las sugerencias para futuras investigaciones.
Palabras clave: identidad profesional, tensión de identidad, teoría de la disonancia, identidad docente, profesores de EFL

1. INTRODUCTION

Teachers' professional identity has received momentum in recent years (Derakhshan *et al.*, 2023a, b; Mehdizadeh *et al.*, 2023) and professional identity tensions have attracted researchers' attention concerning their manner of interacting with students and teachers' views of their status in the educational context (e.g., Anspal *et al.*, 2018, Kudaibergenov & Lee, 2022; Nickel & Crosby, 2021, Pérez Gracia *et al.*, 2022). This interest is more relevant to preservice teachers since one of the central aspects of teacher education is to focus on the self indicating the influence of who I am on who I want to be in the future (González-Calvo, *et al.*, 2020). When an inconsistency is felt between the present self and the assumed future self, professional identity tension is observed.

According to Warner (2016), professional identity tensions pertain to a sense of lack of consonance between supposed presumptions and expectations and the real involvement in fieldwork. Güngör (2017) argues that if teachers do not properly manage their professional identity tensions, their performance will be limited regarding their learning and occupational enthusiasm. In addition, these conflicts and anxieties can bring about negative emotions such as exhaustion and insecurity (Pillen *et al.*, 2013). Previous research shows that knowledge and experience of professional identity tensions are inseparably bound up by the developmental procedure of being a teacher (Derakhshan & Nazari, 2022). Professional identity tension encourages them to reevaluate their changing and developmental role and reflect on issues like their identity and occupation by answering questions such as "Who am I?" and "What is my professional role?" (Warner, 2016). These reflections, attitudes, and internalizations, recently, have been studied from the dissonance theory perspective.

The cognitive dissonance theory was introduced by Festinger (1957). According to this theory, dissonance occurs when individuals are faced with facts that conflict with their values, ideas, and beliefs. These individuals try to find a method to resolve the observed contradiction to lessen their discomfort and irritation. The theory can be applied to all social contexts that involve decision-making, problem-solving processes, and the formation and changes of human attitudes. One of these contexts is education, particularly EFL education which EFL teachers face different cultures and situations conflicting with their values and beliefs.

Until now, the conducted studies in the literature have considered mostly beginning teachers in fields other than the EFL context by applying qualitative methods of inquiry such as interviews and narratives (e.g., Eslamdoost *et al.*, 2019; Parks 2015). Only a few studies have been done on identifying professional identity tensions using quantitative methods (Hanna *et al.*, 2019; Hanna *et al.*, 2020; Hanna *et al.*, 2022; He, *et al.*, 2022; Pillen *et al.*, 2013). Bearing in mind the inherent dynamicity of the EFL teaching process, and the nature of second/foreign language teaching as one of the most emotional professions (Wang, *et al.*,

2022), it is likely that language teachers come across unanticipated events which conflict with their beliefs, emotions, and personality causing serious tensions. To our knowledge, no research has been done on professional identity tensions in the EFL context particularly using quantitative methods and questionnaires to identify EFL teachers' identity tensions. For example, Yang *et al.*, (2021) investigated the professional tensions of Chinese EFL using qualitative methods of study, i.e., narratives and interviews.

In line with the studies on this new area of the teaching profession, and to disclose the possible professional identity tensions among EFL teachers, the present research tried to adopt a psychometric scale (Hanna *et al.*, 2019), i.e., Professional Identity Tension Scale (PITS) for measuring and defining the influencing factors in professional identity tensions of EFL teachers. In this study, the features and factors of professional tensions were broken down based on the dissonance theory framework. This application of PITS in the Chinese context can be a new and constructive step for more research, whereby insight can be gained into the cognitive dissonances experienced by teachers while becoming EFL teachers. Accordingly, this study attempted to develop and examine the applicability of the Professional Identity Tension Scale (PITS) in the Chinese EFL context and to explore what factors can play a role in the Chinese EFL teachers' professional identity tensions. Therefore, the following research questions have been proposed:

1. Is the Professional Identity Tension Scale (PITS) applicable in the Chinese EFL context?
2. What factors influence the Chinese EFL teachers' professional identity tensions?

2. REVIEW OF LITERATURE

2.1. Professional identity

As a long-standing topic, identity has gained great debate in higher education studies. The three distinguished complementary perspectives for identity include psychological, social, and post-structural ones (Kreber, 2010). Kaplan and Garner (2017) consider the psychological stance especially important due to its particular identity contents such as beliefs, values, and self-awareness. The sociocultural perspective relates to the contextualized nature of identity and the contribution of structural features to one's overall identity (Gee, 2000). Finally, the post-structuralist stance, emphasizing individuals' manifold and changeable identities and orientations, favors the 'notion subjectivities' (Yang *et al.*, 2021). According to this stance, identity is continually transforming and consequently, the academics and teachers' identities cannot be analyzed in association with experience.

Kaplan and Garner (2017) theorize identity as a complicated dynamic structure that is in a strong connection with an individual's self-conception, goals, beliefs, and perception of activities supposed to be done in one's role. From an integrative perspective, the attributed nature to the identity as well as its development provides the possibility of considering teacher identity as a part of academics. Therefore, teachers' professional identity can be studied by adopting a holistic perspective (Trautwein, 2018). This kind of integration in sub-identities can result in well-being, high commitment, and personal coherence, while

the absence of integration will prompt negative feelings, declined motivation, and personal dilemmas (Garner & Kaplan, 2019).

Taking an action-oriented approach to conceptualizing identity, Wenger (1998) proposes five major dimensions for identity. The first one is negotiated experiences which refers to the question of 'Who are we?' in terms of the way we experience and perceive ourselves through involvement in social activities. The second dimension is identity as community membership which concerns describing ourselves by indicating forms of capacity that a special community demands, whereby one can be considered as that community' membership. Identity as learning trajectory, the third aspect, involves answering the questions of 'Where have we been?' and 'Where are we going?' The other dimension is Identity as the nexus of multimembership. It is how we define ourselves by combining our different forms of identity to form a whole one. Finally, Wenger's last dimension is identity as a relation between the local and the global which is the interplay between the local and global. To put it in a nutshell, Wenger's identity construction theory, which is an identity-in-practice one, suggests a powerful framework to study the formation of teachers' professional identity through lived involvement with the possibility of including different tensions regarding the encountered inconsistencies between teachers' values and expectations and results in dissonances.

2.2. Dissonance theory

There is extensive literature on dissonance theory; however, we consider it in brief. According to this theory, cognitive dissonance is experienced when an individual completes an activity that contradicts his/her cognitive elements including personal ideas, beliefs or values, and emotions (Cooper, 2007). The caused mental discomfort leads to a displeasing state of psychological tension (Festinger, 1957). The resulting state, inherently, generates some behavioral or mental activities to avoid or decrease the unpleasant state. In other words, this state is unpleasant and drive-like motivating individuals to change their conditions to decrease their dissonance experience. The caused dissonant state remains for a short period or a few minutes; however, its effect can continue for a couple of weeks and can return by bringing back the inconsistency (Draycott & Dabbs, 1998). In addition, dissonance or conflict can also happen between distinctive internal factors like emotions or personal beliefs. Going under cognitive dissonance is regarded as a personal and subjective process due to its dependence on the attached meaning by an individual to the experienced mental discomfort. The process of assigning meaning is also affected by an elaborate combination of personal and environmental factors (Hanna *et al.*, 2019). According to Simon *et al.* (1995), the dissonance can be reduced by changing the dissonant element i.e., changing the attitude, increasing the weight of a consonant element, and subtracting the inconsistent one, and finally, by trivialization, i.e., reduction of the significance of the dissonant element.

2.3. Professional identity tensions

Tensions in identity can be seen while teachers are engaging in the integration of different aspects of their job to be able to act effectively in the dynamic atmosphere of their workplace with distinctive expectations (Siekkinen *et al.*, 2020). Van Winkel *et al.* (2018)

argue that complex and flexible identities such as teachers' identities are liable to come apart and conflict with each other. Anspal *et al.* (2018) identified three identity tensions including 'role expectations vs. university training', 'conception of self vs. professional role', and 'multiple professional role expectations. Most researchers have explained professional identity tensions in teachers concerning internal conflicts (e.g.; Delaney, 2015; Warner, 2016). Accordingly, professional identity tensions are described in terms of cognitive dissonances due to the constant accompaniment of unpleasant and irritating emotions.

Cognitive dissonance considers internal struggles as a type of dissonance between the teacher as a professional and the expectations of the teacher as a person (Hanna *et al.*, 2019). Depending on its weight and density, the experience of professional identity tension inherently needs to be resolved, reduced, or avoided. According to the dissonance theory, the attributed weight to the experienced identity tension is highly under the influence of environmental factors such as cultural influences, educational demands, and personal factors including teachers' motivation, self-esteem, and self-efficacy (Hanna *et al.*, 2019).

Previous studies have made out different professional identity tensions influencing new teachers (Pillen *et al.*, 2013a). For example, Alsup (2006) recognized three identity tensions including the tensions between being a student at the university and being a teacher at the school, tension caused by the difference between what is indoctrinated in teacher education programs about teaching and what is experienced in the real context of teaching, and finally, the tension between personal beliefs and skills and professional role expectation. Gee (2000) believes that these tensions can be caused by a mismatch of several factors like institution, nature, and society guiding a particular identity perspective. Although experiencing tensions has been considered essential for professional identity development in beginning teachers (Alsup, 2006), some tensions may be too complicated to be managed and adapt. These types of complex and unresolved tensions can lead to quitting the teaching profession (Smagorinsky, *et al.*, 2004). The broadly considered tensions in the literature are related to competence gaps, experienced conflicts by student teachers, contradictions, and worries. In other words, conflicts, tensions, and gaps all play roles in the development of teacher identity (Schatz-Oppenheimer & Dvir, 2014). Despite recent extensive studies on teacher identity, research on the tensions relevant to teachers' professional identity is a relatively new area, particularly in the EFL context.

2.4. Professional identity of EFL teachers

Today, studying EFL teachers' identities has attracted growing attention (Zhang, 2017). The literature uncovered three main areas regarding the basic characteristics of teacher identity. The first one concerns the multifaceted nature of professional identity. The second is related to the relationship between social (e.g., professional context) and personal dimensions (e.g., emotions) in the process of identity formation. The last one refers to the connection between structure and agency in identity formation (Beijaard *et al.*, 2013). As with other identity formations, teacher identity is also constructed through a dynamic process by the mediation of different explicit and implicit mandates including social, cultural, and political mandates in societies and schools (Datnow *et al.*, 2002). Studying the manner of English language teachers regarding their pedagogical adaptations, Scotland (2014, p. 41) points

out that "individual sites of agency" intervene between institutional contexts and teachers' identities. Reviewing the literature over the past two decades, we witnessed that research on teacher identity has focused on the factors influencing teachers' professional identity formation including sociocultural factors (Shabani, 2016), the culture of the local classroom, institutional culture, teachers' previous experiences as well as the textbooks (Powell, 1994). Kelchtermans (2005, p.997) argues that the strong reaction of teachers when their "professional identity and moral integrity, as part of being a 'proper teacher" goes under question.

Drawing attention to the nature of EFL teaching laden with political, cultural, and social factors, Pennycook (1994) highlights their critical role in the construction and shaping of EFL teachers' identity; although their effects and operation, depending on the context, vary and need more investigation. In a similar vein, Richards (2006) argues that EFL teaching is a productive field for the investigation of identity tensions and conflicts and their reconstruction. EFL teachers like other teachers are subject to tensions and dissonance due to the policies and mandates relating to language education and the culture of the context. However, these tensions and the caused dilemmas and how EFL teachers counter and respond to the positions have not been investigated particularly in countries with a centralized education system like China. To address this gap and take the first steps in examining the EFL teachers' professional identity tensions using a psychometric instrument, the present study aims to apply the Professional Identity Tensions Scale (PITS) for the first time in the EFL context in China. This scale firstly was designed by Pillen *et al.* (2013), and then developed and used by Hanna *et al.* (2019) to measure the identity tensions of student teachers.

3. METHODOLOGY

3.1. Design of the study

Given the aim of the present study and the proposed research questions, a cross-sectional quantitative design was adopted. A 5-point Likert-type item was used to gather the required data.

3.2. Participants

Following a non-random sampling, i.e., the convenience sampling method, a total of 452 Chinese EFL teachers from 4 senior high schools in Jiangsu province participated in the current study. In the present study, the convenience sampling method was adopted due to easiness of access to the participants. Of all filled questionnaires, 450 valid cases were obtained after gleaning the initial data. Amongst all those valid participants, 98 male teachers (21.78%) and 352 female teachers (78.22%) answered the questionnaires. Their age ranged from 22 to 65, with their average age being 41.79 and an SD of 2.013. Most of the teachers taught bachelor's and master's students, covering 83.78% and 18.44% respectively. Those Chinese EFL teachers had various education levels, with a bachelor's degree (N=131, 28.9 %), a Master's degree (N=302, 67 %), and a Ph.D. degree (N=17, 3%) respectively. All of the teachers have had teaching experience, ranging from 1 to 30 years with a mean of 12 years and an SD of 2.27. From the gleaned data, 200 cases were randomly selected for the

EFA and the remaining 250 were used for CFA.

Table 1. *Summary of participants' demographic information*

Demographic Information Category	N	%
Gender		
Male	97	21.78
Female	352	78.22
Total	450	100
Level of Education		
Bachelor of Arts	131	28.9
Master of Arts	302	67
Ph.D.	17	3
Total	450	100
Age Range	**Mean**	**SD**
22-65	41.79	2.103
Teaching Experience (year)	**Mean**	**SD**
1-30	12	2.27

3.3. Instruments

TTo understand the current status of college EFL teachers' identity tensions in China, a five-point scale including Likert-type items was used. The original Professional Identity Tension Scale (PITS) was developed by Hanna *et al.*, (2019) on the basis of the questionnaire designed by Pillen *et al.* (2013). In the present study, depending on the Chinese EFL context, the content of some statements was altered. It has also been translated into the Chinese language. In order to achieve validity, the translated scale was double-checked by two experts, and additionally, backward translation was carried out to ensure not including ambiguous points. It is mentionable that the name of the factors was chosen on the basis of the original model and also some of them were changed considering the included items and the context of the study. In the main scale, the factors were identified by using a sentence, however, in the present study, to be more convenient in referring to factors, we used phrases. The final questionnaire contained 41 statements including 11 items on demographic information and the remaining 30 items were on the identity tensions of English teachers (Appendix A). The participants were demanded to choose between strongly agree, slightly agree, neutral, slightly disagree, and strongly agree (1=Strongly disagree to 7=Strongly agree).

3.4. Data collection procedure

The data collection started on 7th, February 2022, and ended on 25th, March 2022. Before that, to pass the ethical consideration, the agreement of the affiliation and consent of the participants were taken. The participants, Chinese EFL teachers, were informed of the research purpose and they were assured that their information and the obtained data would

be kept confidential and used only for research purposes. They were also assured that they could withdraw their participation at any time without providing any reasons. The e-version questionnaires were distributed across different WeChat groups (a popular communication App in China) and emails in order to obtain a large sample of participants.

3.5. Data analysis procedure

In order to analyze data, firstly, Cronbach's coefficient was used to check the reliability of the questionnaire. In the next step, the normality and linearity of data were examined. Then, to find highly interconnected variables, 200 cases of collected data were randomly submitted to Exploratory Factor Analysis and 250 cases remained for Confirmatory Factor analysis. The whole analysis was performed using SPSS24.

4. RESULTS

4.1. Scale reliabilities

First, Cronbach's coefficient was used to check the reliability of the thirty items. A generally accepted rule is that α of 0.6-0.7 indicates an acceptable level of reliability, and 0.8 or greater is a very good level. However, values higher than 0.95 are not necessarily good, since they might indicate redundancy (Hulin *et al.*, 2001).

Table 2. *Reliability statistics*

Cronbach's Alpha	N of Items
.886	30

As Table 2 presents, Cronbach's alpha is .88, which indicates an excellent level of internal consistency for the scale with this specific sample.

The main assumptions of normality, linearity, and homoscedasticity were assumed. None of the 30 items was substantially skewed ($< |2|$) or kurtosis ($< |7|$). Furthermore, the data did not consist of missing values. An explanatory factor analysis (EFA) was administered on the 30 items. The Kaiser-Meyer-Olkin (KMO) value was 0.88, indicating 'meritorious' sampling adequacy and Barlett's test of Sphericity was significant ($X2 (435) = 6829.11$, $p < .05$), indicating the variance-covariance matrix was appropriate for an EFA (Field, 2013).

EFA was used to find groups of variables that are highly intercorrelated. Each such group probably represents an underlying common factor. There are different mathematical approaches to accomplishing this, but the most common one is Principal Components Analysis (PCA). The questionnaire held among 452 teachers included 30 questions on the EFL teachers' Professional Identity Tension Scale (PITS). It is assumed that this measures a smaller number of underlying factors but there is no evidence of a model. Therefore, the following minor research questions are proposed for this analysis:
- How many factors are measured by the 30 questions?
- Which questions measure similar factors?

With 30 input variables, PCA initially extracts 7 factors (or components). Each component has a quality score called an Eigenvalue. Only components with high Eigenvalues are likely to represent a real underlying factor (Appendix Table B1).

A common rule of thumb is to select components whose Eigenvalue is at least 1(Field, 2013). Applying this simple rule to the preceding table answers the first minor research question: the 30 variables seem to measure 7 underlying factors. This is because only the first 7 components have an Eigenvalue of at least 1. The other components that have low-quality scores are not assumed to represent real traits underlying the 30 questions. Such components are considered "scree" as shown by the line in Figure A in the Appendix.

The Eigenvalues or quality scores are visualized in the scree plot. The first 7 components have Eigenvalues over 1. These are considered strong factors. After that, components 8 and onwards- the Eigenvalues drop off dramatically. The sharp drop between components 1-7 and components 8-30 strongly suggests that 7 factors underlie our questions.

The 30 variables probably measure 7 underlying factors, but it is not clear which items measure each factor. The rotated component matrix shows the Pearson correlations between the items and the components (Table 3) and Figure 1 presents the first structural model of the underlying relationship between items and factors. These correlations are called factor loadings:

Table 3. *Rotated Component Matrix*

	Component						
	1	2	3	4	5	6	7
Q12: Teachers' work is very important in helping students' growth and development.	.328	**.719**	-.009	.041	.056	-.006	.061
Q13: The work of teachers is of great significance to social development.	.327	**.794**	-.033	-.013	-.022	-.005	.044
Q14:Teachers are the hope of revitalizing education and the nation.	.223	**.789**	.033	.044	.076	.076	-.040
Q15: I care about how others view the group of English teachers.	-.061	**.637**	.119	.082	.262	.144	.134
Q16: When I see or hear the words praising the teaching profession, I feel very gratified.	.018	**.729**	.150	-.080	.230	.019	.217
Q17: When introducing myself, I am glad to introduce myself as a college English teacher.	.181	**.591**	.189	.031	.317	-.064	.061
Q18: I am very confident in my English proficiency.	.312	.194	.076	.101	**.722**	-.096	.060
Q19: I have learned and mastered scientific teaching methods and skills.	.373	.137	.062	.112	**.737**	-.043	.115
Q20: I can skillfully use modern technology and the Internet in English teaching.	.166	.173	.049	.014	**.749**	.054	.113
Q21: My teaching is liked by my students.	.438	.258	.113	.029	**.630**	.070	.039
Q22: I think teaching is the most important for teachers.	**.443**	.183	.100	-.311	.180	.159	.102
Q23: Teaching makes me feel a lot of pressure.	.006	.037	-.013	.078	-.026	**.847**	-.034
Q24: It is reasonable for the university to set research requirements for college English teachers.	.116	.107	.217	**.764**	.024	-.063	.130
Q25: I can complete the scientific research task of the school.	.079	.015	.170	**.736**	.222	-.017	-.007
Q26: Scientific research puts me under a lot of pressure.	.060	.066	-.158	-.323	.012	**.637**	**.456**
Q27: I think scientific research is more important than teaching College English teachers.	-.019	-.073	.083	**.769**	.004	.176	.052
Q28: I think college English teachers should attach equal importance to teaching and scientific research.	.178	.069	.127	**.752**	.001	-.071	.105
Q29: I am enthusiastic about my work.	**.760**	.173	.156	.260	.152	-.074	.055
Q30: I actively undertake teaching tasks.	**.723**	.198	.162	.055	.123	.055	.084
Q31: I feel very happy at work.	**.746**	.141	.181	.167	.142	-.121	.018
Q32: I have a good ability to manage students.	**.670**	.134	.018	.123	.352	-.068	.166
Q33: I take the initiative to create a harmonious colleagueship.	**.627**	.139	.127	.003	.187	.123	.281
Q34: I can maintain a good relationship with students.	**.701**	.150	.109	-.013	.298	.083	.179
Q35: English teaching reform is the general trend.	.270	.157	.098	.132	.161	.041	**.870**
Q36: I support the reform of English teaching.	.279	.171	.110	.148	.128	.011	**.854**
Q37: Teaching reform puts me under pressure.	-.005	.031	.116	.108	.002	**.772**	**.421**
Q38: I'm happy with the current salary.	.168	-.031	**.634**	.112	.051	.050	-.008
Q39: When I am in trouble, the school organization will help me.	.143	.112	**.852**	.095	.040	-.003	.038
Q40: I can have an equal dialogue with my school.	.131	.120	**.824**	.184	.121	-.015	.070
Q41: My school authority is concerned with teachers' development.	.094	.123	**.810**	.175	.039	-.039	.127

Extraction Method: Principal Component Analysis.
Rotation Method: Varimax with Kaiser Normalization.
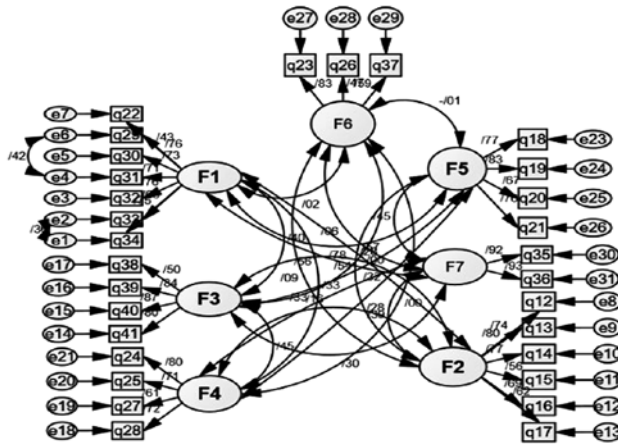a. Rotation converged in 7 iterations.

Figure 1. *The first SEM model of Chinese EFL teachers' professional identity tensions*
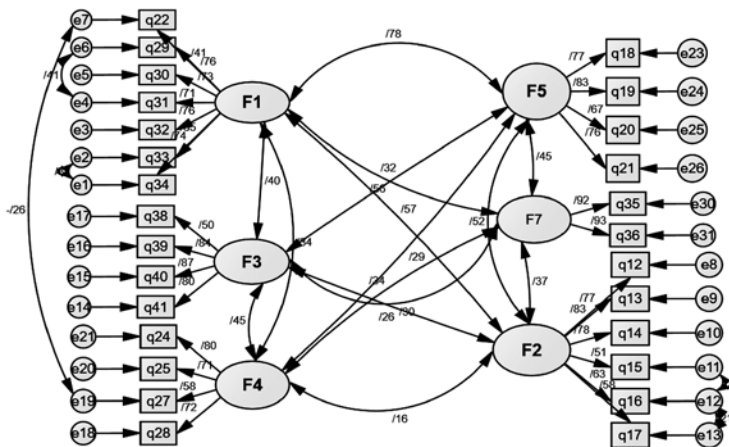

Figure 2. *The final full SEM model of Chinese EFL teachers' professional identity tensions*

Table 4. *Model fit indices*

Criteria		Threshold			Evaluation
		Terrible	Acceptable	Excellent	
CMIN/df	2.518	> 5	> 3	> 1	Excellent
RMSEA	.053	> 0.08	< 0.08	< 0.06	Excellent
CFI	.939	< 0.9	> 0.9	> 0.95	Acceptable
TLI	.929	< 0.9	> 0.9	> 0.95	Acceptable
SRMR	.044	> 0.1	> 0.08	< 0.08	Excellent

The results reported in Table 4 indicate acceptable to excellent goodness of fit. Next, the composite reliability (CR) and discriminant validity for each factor were examined (Table 5). As reported, all of the variables had CR values above 0.7, which reveals acceptable reliability. Moreover, the square root of average variance extracted (AVE) (the bold values in the table) was above the inter-correlations of the factors, indicating discriminant validity, according to Fornell and Larcker (1981).

Table 5. *Composite reliability and discriminant validity*

Factors[1]	CR	AVE	Fornell Larcker Criterion					
			F1	F2	F3	F4	F5	F7
F1	0.769	0.476	**0.689**					
F2	0.787	0.481	0.109**	**0.693**				
F3	0.884	0.631	0.141**	0.085*	**0.794**			
F4	0.808	0.500	0.114**	0.05*	0.254**	**0.707**		
F5	0.856	0.577	0.194**	0.123**	0.135**	0.116**	**0.759**	
F7	0.943	0.856	0.166**	0.115**	0.166**	0.178**	0.181**	**0.925**

[1] F1: Self-Efficacy; F2: Job Satisfaction; F3: Care from the Institute; F4: Agreement with Doing Research; F5: Feeling Competent and Skillful; F7: Satisfaction with Reform
* Significant correlation at p < .05
** Significant correlation at p < .01

5. DISCUSSION

TThe current study was conducted to develop and validate PITS in the field of EFL context overall and China in particular and to explore what factors play a role in the formation of EFL teachers' professional identity tensions. As with the scale development methods, several steps were followed to validate and assess the psychometric quality of the PTIS among Chinese EFL teachers. In general, the satisfying reliability of the scale and its factor structure seemingly provided an initial verification for the psychometric quality of PITS. In the present research, we assessed the necessary validities. Particularly, we examined the content and face validity by asking experts to check the developed and translated versions regarding any problem in their rendering, spelling, and content, and then, we administered them to a small number of teachers similar to our sample to be assured of the scale's usefulness. In addition, by employing factor analysis, the factorial validity was assessed to see to what extent the final derived factors are consistent with the factors we defined in the initial theoretical framework.

Regarding the development and applicability of PITS for measuring EFL teachers' professional identity tensions, the findings showed that the developed PITS scale for measuring Chinese EFL teachers' professional identity tensions is grounded on the dissonance perspective and is appropriate and applicable to EFL contexts. As with the PTIS in the study of Hanna *et al.* (2019), this scale can be used for measuring different professional identity tensions of individuals including EFL teachers who may experience in a teaching context.

In the second step, we used exploratory factor analysis to answer the first proposed

minor question and recognize the influencing factors in EFL teachers' professional identity tensions, then employed Principal Components Analysis (PCA) to identify the underlying items resulting in six factors that refer to distinctive EFL teachers' professional identity tensions being in connection moderately or weakly. The structural model showed the relationship between the factors and subfactors. This is an indication of the relation existing among the tensions in spite of their separate origins. The identified tensions are dissonances related to EFL teachers' self-efficacy, job satisfaction, care from the institute, agreement with doing research, feeling competent and skillful, and satisfaction with reform. These tensions reflect a special activity of an EFL teacher including support in terms of instruction, classroom, and emotion. The identified tensions are dissonances related to EFL teachers' self-efficacy, job satisfaction, care from the institute, agreement with doing research, feeling competent and skillful, and satisfaction with reform. These tensions reflect a special activity of an EFL teacher including support in terms of instruction, classroom, and emotion. The findings are consistent with the findings of Liu *et al.*, (2022). According to their studies, being unfamiliar with the technology and online teaching process caused dissonances for EFL teachers, and as a result, destructive negative emotions i.e., anxiety unfolded. Therefore, it can be summed up that as teachers are trained and provided with the necessary skills to perform in online classes and cope with the challenges related to using technology and online class engagement, their anxiety is alleviated. In addition, their confidence, technological self-efficacy, and teaching quality are enhanced.

Of the six recognized constructs in this study, some are consistent with Pillen *et al.*'s (2013) instrument and some with Hanna *et al.*'s PITS (2019). A theoretical justification for the incongruity in the number of detected tensions might be ascribed to the contextual characteristics of EFL teachers which are characterized by their own challenges being different from other workplaces. All of these difficulties cause special tensions. The focus of the present research was on the Chinese EEL teachers who are working under different conditions influenced by cultural issues from the mother language and target language. Therefore, some items that were irrelevant for EFL teachers were removed. Furthermore, the identified tensions by Pillen *et al.* (2013) were not explored and confirmed by factor analysis. One of the tensions in the PITS of Hanna *et al.* (2019) was 'teaching in urban classrooms' being unrelated to our participants in the present study.

In the present study, an item pool of 40 new items was formed depending on the characteristics of EFL contexts. Applying factor analysis in the pilot study and content validation facilitated the decision-making process on keeping the final 30 items matching six EFL teachers' professional identity tensions. As mentioned before, in our theoretical framework we included seven factors. However, the confirmatory analysis and SEM model showed that the effect of one of the factors is not significant. This factor is related to the pressure of doing research and being updated. The reason for this finding is found by Yang *et al.* (2021) in a narrative study of Chinese EFL teachers' tensions regarding doing research. According to that study, teachers can cope with this type of tension by integrating two sub-identities, teacher and researcher. As Xu (2014) argues, if teachers are both intrinsically and extrinsically driven to conduct research, they are likely to integrate daily practices of teaching with research. If academics perceive research as a promising strategy for professional growth and beneficial for better teaching practices, they are apt to be driven internally and accept doing

research as an integral part of their job and solve the tension.

6. CONCLUSION

Language teacher identity is a crucial construct reflecting teachers' notion of "how to be", "how to act" and "how to understand" the work and their place in society as well as being a pedagogical resource for teaching practices. (Sachs, 2005, p. 15). EFL teachers need to understand their own social group's culture as well as other social groups' cultures leading to dissonance when these cultures differ from each other, particularly when they are diametrically opposed. To cope with this challenge, teachers need a skill or ability to acquire and make sense of and relate other cultures to their own culture which requires skills of interaction with others, listening, and evaluating (Porto, 2019). According to Baker and Fang (2021), teaching intercultural communicative competence poses a considerable challenge for many EFL teachers due to some cognitive, affective, and instructional factors. Looking from the dissonance theory perspective, to overcome these challenges, as Kegan (1994, p. 227) points out, changing teaching practice requires teachers to develop a new world by passing a "whole way to understand themselves, their world, and the relationship between two". Hence, understanding the role of teacher identity in mediating EFL teachers is critical (Gong *et al.*, 2018).

As findings by Gong *et al.*, (2021) showed EFL teacher identity is a dynamic construct including various sub-identities and aspects. Sachs (2005) believes that this dynamic construct is negotiated and made through experience. Dissonance theory holds that the challenges related to identity can be reduced by altering the dissonance element or changing the attitude. As the characteristics of the EFL context cannot be changed or removed, it is the EFL attitudes that should be altered. Having a fixed and stable body of cultural, and instructional facts can increase dissonance, therefore teacher trainers should help teachers to become more familiar with their identities in the EFL context, be flexible, and promote their skills and strategies for re/building dynamic professional identities. This requires teacher educators to be familiar with the context and have the capacity to recognize tensions among different identity aspects and the impact of those tensions.

The present study offers a quantitative scale i.e., PITS for assessing EFL teachers' identity tensions experienced in the workplace. The findings imply that the PITS can be employed by teaching practitioners and researchers in the teacher education field. Teacher education institutions can benefit from this scale to understand the identity tensions the teachers go through and make teachers aware of the dual responsibilities of an EFL teacher, helping them to develop and promote both sub-identities. By providing awareness of the difference between what teachers' thoughts and being and what they are expected to be and to do, the educational institutes can help teachers, particularly the new teachers to cope with the tensions caused by their professional identity. Up to now, professional identity tensions have mostly concentrated on primary teachers in fields other than the EFL context. Applying the PITS of EFL teachers, which was developed specifically for EFL education contexts, might assist EFL teacher education programmers in adjusting their training program to EFL teachers' needs.

The present study, as with other studies, suffered from limitations. One of them was related to the online data collection procedure which may affect the answers of the partici-

pants. Another limitation is related to the participants and generalizations. The present study has been done in the Chinese EFL context. Also, we collected data from EFL teachers in the big cities.

Future research can replicate the present study by collecting data on paper and in person and repeating the analysis to check the difference. It is proposed that the developed scale be employed in another country with a different educational culture. In addition, future research can use it for EFL teachers in the urban context to investigate urban-related tensions. Finally, the present scale is in its infancy and the response quality of the PITS of EFL teachers needs to be enhanced through further research.

7. REFERENCES

Alsup, J. (2006). *Teacher identity discourses*. Lawrence Erlbaum Associates.

Anspal, T., Leijen, A., & Lofstrom, E. (2018). Tensions and the teacher's role in student-teacher identity development in primary and subject teacher curricula. *Scandinavian Journal of Educational Research,* 1–17. https://doi.org/10.1080/00313831.2017.1420688.

Beijaard, D., Meijer, P. C., &Verloop, N. (2013). The emergence of research on teachers' professional identity: A review of literature from 1988 to 2000. In C. J. Craig, P. C. Meijer, & J. Broeckmans (Eds.), *From teacher thinking to teachers and teaching: The evolution of a research community* (pp. 205–222). Emerald Group Publishing.

Cooper, J. (2007). *Cognitive dissonance: 50 years of a classic theory.* Sage.

Datnow, A., Hubbard, L., &Mehen, H. (2002). *Educational reform implementation: A co-constructed process*. Routledge.

Delaney, K. K. (2015). Dissonance for understanding: Exploring a new theoretical lens for understanding teacher identity formation in borderlands of practice. *Contemporary Issues in Early Childhood, 16*, 374–389. https://doi.org/10.1177/1463949115616326.

Derakhshan, A., Karimpour, S., & Nazari, M. (2023a). Making sense of emotion and identity construction through metaphors: a prompt-based. *Journal of Multilingual and Multicultural Development*. https://doi.org/10.1080/01434632.2023.2270951

Derakhshan, A., Karimpour, S., & Nazari, M. (2023b). "Most of us are not feeling well": Exploring Iranian EAP practitioners' emotions and identities. *Ibérica, 45*(1), 7-34. https://doi.org/10.17398/2340-2784.4

Derakhshan, A. & Nazari, M. (2022). "I am Fed Up with the Criticisms": Examining the role of emotional critical incidents in a novice teacher's identity construction. *Asia-Pacific Edu Res*. https://doi.org/10.1007/s40299-022-00666-1.

Draycott, S., & Dabbs, A. (1998). Cognitive dissonance 1: An overview of the literature and its integration into theory and practice in clinical psychology. *British Journal of Clinical Psychology, 37(3), 341–353.* https://doi.10.1111/j.2044-8260.1998.tb01390.x.

Festinger, L. (1957). *A theory of cognitive dissonance.* Stanford University Press.

Field, A. (2013). Discovering statistics using IBM SPSS statistics (4th ed.). SAGE Publications.

Fornell, C. & Larcker, D. F. (1981). Evaluating structural equation models with unobservable variables and measurement error. *Journal of Marketing Research*, *18*(1), 39-50.

Eslamdoost, S., King, K. A., & Tajeddin, Z. (2019). Professional identity conflict and (re)construction among English teachers in Iran. *Journal of Language, Identity, and Education, 19*(5), 327-341, https://doi.10.1080/15348458.2019.1676157

Garner, J. K., & Kaplan, A. (2019). A complex dynamic systems perspective on teacher learning and identity formation: An instrumental case. *Teachers and Teaching, 25*(1), 7–33. https://doi.org/10.1080/13540602.2018.1533811

Gedik, P. K., & Ortactepe, D. (2017). *Teacher identity (re) construction within professional learning communities: The role of emotions and tensions*. IGI Global.

Gee, J. P. (2000). Identity as an analytical lens for research in education. *Review of Research in Education, 25*, 99–125. https://doi.org/10.3102/0091732X025001099

Gong, Y., Hu, X., & Lai, C. (2018). Chinese as a second language teachers' cognition in teaching intercultural communicative competence. System, 78, 224–233. http://doi.org/10.1016/j.system.2018. 09.009.

Gong, Y., Lai, C.,λ& Gao, X. (2021). Language teachers' identity in teaching intercultural communicative competence. Language, Culture and Curriculum, 1-17. https://doi.org/10.1080/07908318.2021.1954938.

González-Calvo, G., Bores-García, D., Barba-Martín, R. A., & Gallego-Lema, V. (2020). Learning to be a teacher without being in the classroom: COVID-19 as a threat to the professional development of future teachers. *International and Multidisciplinary Journal of Social Sciences, 9*(2), 152-177.

Güngör, F. (2017). The tensions between EFL teacher identities and INSET in the Turkish context. *PROFILE Issues in Teachers Professional Development, 19*, 13–27. https://doi.org/10.15446/profile.v19n1.55110.

Hall, P. M., & McGinty, P. J. W. (1997). Policy as the transformation of intentions: Producing program from the statute. *The Sociological Quarterly, 38*, 439–467. https://doi.10.1111/j.1533-8525.1997.tb00487.x

He, W., Tian, G., Li, Q., Liu, L. B., & Zhou, J. (2022). Examining the relationships between student teacher professional identity tensions and motivation for teaching: Mediating role of emotional labor strategies in China. Sustainability, 14(19), 12727. https://doi.org/10.3390/su141912727

Hanna, F., Oostdam, R., Severiens, S. E., & Zijlstra, B. J. (2019). Primary student teachers' professional identity tensions: The construction and psychometric quality of the professional identity tensions scale. *Studies in Educational Evaluation, 61*, 21-33. https://doi.org/10.1016/j.stueduc.2019.02.002

Hanna, F., Oostdam, R., Severiens, S. E., & Zijlstra, B. J. (2020). Assessing the professional identity of primary student teachers: Design and validation of the Teacher Identity Measurement Scale. *Studies in Educational Evaluation*, *64*, 100822. https://doi.org/10.1016/j.stueduc.2019.100822

Hanna, F., Oostdam, R., Severiens, S. E., & Zijlstra, B. J. (2022). The development of the relationship between professional identity tensions and teacher identity: A quantitative longitudinal study among Dutch primary student teachers. *Studies in Educational Evaluation*, *75*, 101199. https://doi.org/10.1016/j.stueduc.2022.101199

Hulin, C., Netemeyer, R., & Cudeck, R. (2001). Can a Reliability Coefficient Be Too High? *Journal of Consumer Psychology, 10*, 55-58. *https://doi.org/10.1207/S15327663JCP1001&2_05*

Hu, L., Bentler, P.M. (1999). Cutoff criteria for fit indexes in covariance structure analysis: Conventional criteria versus new alternatives. *SEM, 6*(1), 1-55.

Kaplan, A., & Garner, J. K. (2017). A complex dynamic systems perspective on identity and its development: The dynamic systems model of role identity. *Developmental Psychology, 53*(11), 2036–2051. https://doi.org/10.1037/dev0000339

Kelchtermans, G. (2005). Teachers' emotions in educational reforms: Self-understanding, vulnerable commitment, and micropolitical literacy. *Teaching and Teacher Education, 21*, 995–1006. https://doi.10.1016/j.tate.2005.06.009

Kudaibergenov, M. & Lee, K. (2022) Professional identity tensions in EFL preservice teachers: A collective case study of three international students in South Korea. *Journal of Language, Identity & Education.* https://doi.org/10.1080/15348458.2022.2038174

Kreber, C. (2010). Academics' teacher identities, authenticity, and pedagogy. *Studies in Higher Education, 35*(2),171–194. https://doi.org/10.1080/03075070902953048

Liu, H., Yan. C. & Fu, J. (2022). Exploring livestream English teaching anxiety in the Chinese context: An ecological perspective, *Teaching and Teacher Education, 111,* 103620, https://doi.org/10.1016/j.tate.2021.103620.

Mehdizadeh, M., Pourhaji, M., & Derakhshan, A. (2023). Evolution of communities of practice, realignment of possible selves, and repositionings in EFL teacher professional identity development: A longitudinal case study. *The Language Learning Journal.* https://doi.org/10.1080/09571736.2022.2163685

Nickel, J. & Crosby, S. (2022) Professional identity values and tensions for early career teachers, *Teaching Education, 33*(3), 317-331. https://doi.org/10.1080/10476210.2021.1895107

Parks, S. (2015). Maximizing target language use in a preservice practicum: Tensions, power, and identity formation. *TESL-EJ, 19*(1), 1–12. Retrieved from https://files.eric.ed.gov/fulltext/EJ1064076.pdf

Pennycook, A. (1994). English and the discourse of colonialism. Routledge.

Pérez Gracia, E., Serrano Rodríguez, R., & Pontes Pedrajas, A. (2022). Teachers' professional identity construction: A review of the literature. *Profesorado, Revista De Currículum Y Formación Del Profesorado*, *26*(1), 371–393. https://doi.org/10.30827/profesorado.v26i1.13211

Pillen, M., Beijaard, D., &Brok, P. D. (2013a). Professional identity tensions of beginning teachers. *Teachers and Teaching: Theory and Practice, 19*, 660–678. https://doi.org/10.1080/13540602.2013.827455

Pillen, M. T., Den Brok, P. J., &Beijaard, D. (2013). Profiles and change in beginning teachers' professional identity tensions. *Teaching and Teacher Education, 34*, 86–97. https://doi.org/10.1016/j.tate.2013.04.003

Powell, R. R. (1994). Case studies of second-career secondary student teachers. *International Journal of Qualitative Studies in Education, 7*, 351–366. https://doi.10.1080/0951839940070405.

Richards, K. (2006). *Language and professional identity: Aspects of collaborative interaction*. Palgrave MacMillan.

Sachs, J. (2005). Teacher education and the development of professional identity: Learning to be a teacher. In P. Denicolo, & M. Kompf (Eds.), *Connecting policy and practice: Challenges for teaching and learning in schools and universities* (pp. 5–21). Routledge

Schatz-Oppenheimer, O., & Dvir, N. (2014). From ugly duckling to swan: Stories of novice teachers. *Teaching and Teacher Education, 37*, 140–149. https://doi.org/10.1016/j.tate.2013.10.011

Scotland, J. (2014). Operating in global educational contact zones: How pedagogical adaptation to local contexts may result in the renegotiation of the professional identities of English language teachers. *Teaching and Teacher Education, 37*, 33–43. https://doi.org/10.1016/j.tate.2013.09.002.

Shabani, K. (2016). Applications of Vygotsky's sociocultural approach for teachers' professional development. *Cogent Education, 3*, 1–10. https://doi.10.1080/2331186x.2016.1252177.

Siekkinen, T., Pekkola, E., & Carvalho, T. (2020). Change and continuity in the academic profession: Finnish universities as living labs. Higher Education, 79(3), 533–551. https://doi.org/10.1007/s10734-019-00422-3

Simon, L., Greenberg, J. & Brehm, J. (1995). Trivialization: The forgotten mode of dissonance reduction. *Journal of Personality and Social Psychology, 68*, 247-260.

Smagorinsky, P., Cook, L. S., Moore, C., Jackson, A. Y., & Fry, P. G. (2004). Tensions in learning to teach: Accommodation and the development of a teaching identity. *Journal of Teacher Education, 55*, 8–24. https://doi.org/10.1177/0022487103260067.

Trautwein, C. (2018). Academics' identity development as teachers. *Teaching in Higher Education, 23*(8), 995–1010. https://doi.org/10.1080/13562517.2018.1449739

Van Winkel, M. A., Van Der Rijst, R. M., Poell, R. F., & van Driel, J. H. (2018). Identities of research-active academics in new universities: towards a complete academic profession cross-cutting different worlds of practice. *Journal of Further and Higher Education, 42*(4), 539–555. https://doi.org/10.1080/0309877X.2017.1301407

Volkmann, M. J., & Anderson, M. A. (1998). Creating professional identity: Dilemmas and metaphors of a first-year chemistry teacher. *Science Education, 82*, 293–310. https://doi.org/10.1002/(SICI)1098-237X(199806)82:3<293:AID-SCE1>3.0.CO;2-7

Xu, Y. (2014). Becoming researchers: A narrative study of Chinese university EFL teachers' research practice and their professional identity construction. Language Teaching Research, 18(2), 242–259. https://doi.org/10.1177/1362168813505943

Wang, Y., Derakhshan, A., & Pan, Z. (2022). Positioning an agenda on a loving pedagogy in second language acquisition: Conceptualization, practice, and research. *Front. Psychol. 13*, 894190. https://doi.10.3389/fpsyg.2022.894190

Warner, C. K. (2016). Constructions of excellent teaching: identity tensions in preservice English teachers. *National Teacher Education Journal, 9*(1), 5–15. Retrieved from https://s3.amazonaws.com/

Wenger, E. (1998). *Communities of practice: Learning, meaning, and identity*. Cambridge University Press.

Yang, S., Shu, D., & Yin, H. (2021). "Teaching, my passion; publishing my pain": Unpacking academics' professional identity tensions through the lens of emotional resilience. *Higher Education*. https://doi.org/10.1007/s10734-021-00765-w

Zhang, Y. (2017). I speak Chinese but I am teaching English: Exploring the influence of nonnative speakership in the construction of language teacher identity. *Theory and Practice in Language Studies, 7*(12), 1236–1242. https://doi.10.17507/tpls.0712.10

8. APPENDICES

Appendix A

Table A1. *English teachers' professional identity tension items in our primary theoretical framework*

Professional Identity Tensions	Items
1. Self-efficacy	1.1 I think teaching is the most important for teachers. 1.2 I am enthusiastic about my work. 1.3 I actively undertake teaching tasks. 1.4 I feel very happy at work. 1.5 I have a good ability to manage students. 1.6 I take the initiative to create a harmonious colleagueship. 1.7 I can maintain a good relationship with students.
2. Job satisfaction	2.1 Teachers' work is very important in helping students' growth and development. 2.2. The work of teachers is of great significance to social development. 2.3 Teachers are the hope of revitalizing education and the nation. 2.4 I care about how others view the group of English teachers. 2.5 When I see or hear the words praising the teaching profession, I feel very gratified. 2.6 When introducing myself, I am glad to introduce myself as a college English teacher.
3. Care from the institute	3.1 I'm happy with the current salary. 3.2 When I am in trouble, the school organization will help me. 3.3 I can have an equal dialogue with my school. 3.4 My school authority is concerned with teachers' development.
4. Agreement with doing research	4.1 It is reasonable for the university to set research requirements for college English teachers. 4.2 I can complete the scientific research task of the school. 4.3 I think scientific research is more important than teaching College English teachers. 4.4 I think college English teachers should attach equal importance to teaching and scientific research.
5. Feeling competent and skilful	5.1 I am very confident in my English proficiency. 5.2 I have learned and mastered scientific teaching methods and skills. 5.3 I can skilfully use modern technology and the Internet in English teaching. 5.4 My teaching is liked by my students.
6. Pressure from workplace expectations	6.1 Teaching makes me feel a lot of pressure. 6.2 Scientific research puts me under a lot of pressure. 6.3 Teaching reform puts me under pressure.
7. Satisfaction with reform	7.1 English teaching reform is the general trend. 7.2 I support the reform of English teaching.

Appendix B

Table B1.

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	8.587	28.622	28.622	8.587	28.622	28.622	4.225	14.083	14.083
2	3.151	10.502	39.124	3.151	10.502	39.124	3.518	11.727	25.810
3	2.033	6.775	45.899	2.033	6.775	45.899	2.842	9.473	35.284
4	1.818	6.059	51.958	1.818	6.059	51.958	2.783	9.275	44.559
5	1.681	5.605	57.563	1.681	5.605	57.563	2.706	9.021	53.580
6	1.304	4.347	61.910	1.304	4.347	61.910	1.891	6.304	59.884
7	1.225	4.082	65.992	1.225	4.082	65.992	1.832	6.108	65.992
8	.860	2.868	68.860						
9	.830	2.766	71.626						
10	.746	2.487	74.113						
11	.661	2.203	76.315						
12	.600	2.001	78.316						
13	.567	1.891	80.207						
14	.541	1.804	82.011						
15	.512	1.706	83.718						
16	.500	1.667	85.384						
17	.455	1.516	86.900						
18	.427	1.422	88.323						
19	.403	1.343	89.666						
20	.398	1.328	90.994						
21	.384	1.281	92.274						
22	.375	1.250	93.524						
23	.341	1.138	94.662						
24	.295	.982	95.645						
25	.271	.902	96.547						
26	.246	.821	97.367						
27	.227	.757	98.125						
28	.222	.739	98.864						
29	.215	.716	99.580						
30	.126	.420	100.000						

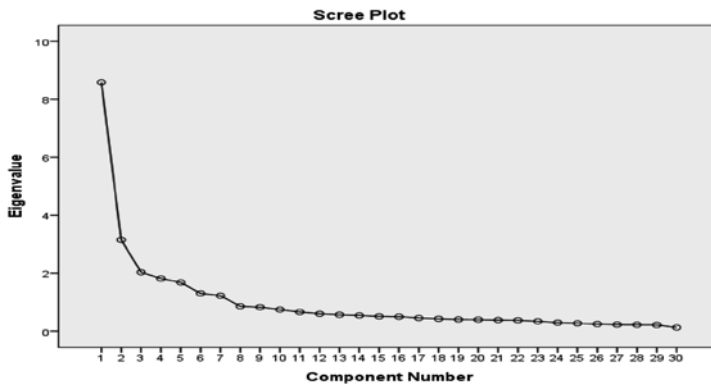Extraction Method: Principal Component Analysis.

Figure A. *Scree plot from the explanatory factor analysis*

Table B2. *Unstandardized and standardized loadings of the final model*

			Unstandardized				Standardized
			Estimate	S.E.	C.R.	P	Estimate
q34	<---	F1	1/000				/745
q33	<---	F1	/940	/056	16/765	0.000	/654
q32	<---	F1	1/134	/072	15/684	0.000	/762
q31	<---	F1	1/212	/084	14/421	0.000	/708
q30	<---	F1	1/163	/078	14/908	0.000	/726
q29	<---	F1	1/180	/075	15/648	0.000	/763
q22	<---	F1	/634	/075	8/444	0.000	/410
q12	<---	F2	1/000				/765
q13	<---	F2	1/097	/064	17/269	0.000	/832
q14	<---	F2	1/155	/071	16/173	0.000	/775
q15	<---	F2	1/080	/105	10/288	0.000	/508
q16	<---	F2	1/125	/086	13/025	0.000	/635
q17	<---	F2	1/077	/090	11/904	0.000	/583
q41	<---	F3	1/000				/798
q40	<---	F3	1/172	/060	19/679	0.000	/874
q39	<---	F3	1/092	/057	19/027	0.000	/839
q38	<---	F3	/714	/068	10/552	0.000	/503
q28	<---	F4	1/000				/719
q27	<---	F4	/823	/074	11/105	0.000	/582
q25	<---	F4	/954	/073	13/052	0.000	/711
q24	<---	F4	1/137	/081	14/030	0.000	/797
q18	<---	F5	1/000				/768
q19	<---	F5	1/048	/060	17/486	0.000	/831
q20	<---	F5	/852	/061	13/860	0.000	/666
q21	<---	F5	/815	/051	15/988	0.000	/760
q35	<---	F7	1/000				/920
q36	<---	F7	1/000	/049	20/244	0.000	/927

Table B3. *Covariances for the final model*

			Estimate	S.E.	C.R.	P
F1	<-->	F5	/194	/020	9/820	0.000
F3	<-->	F5	/135	/025	5/424	0.000
F4	<-->	F5	/116	/024	4/769	0.000
F2	<-->	F5	/123	/016	7/869	0.000
F5	<-->	F7	/181	/024	7/444	0.000
F1	<-->	F7	/184	/021	8/581	0.000
F3	<-->	F7	/166	/031	5/346	0.000
F4	<-->	F7	/178	/031	5/674	0.000
F2	<-->	F7	/115	/018	6/411	0.000
F1	<-->	F2	/109	/013	8/219	0.000
F2	<-->	F3	/085	/019	4/551	0.000
F2	<-->	F4	/050	/018	2/787	0.005
F1	<-->	F4	/114	/021	5/485	0.000
F1	<-->	F3	/141	/021	6/550	0.000
F3	<-->	F4	/254	/037	6/943	0.000
e4	<-->	e6	/103	/016	6/492	0.000
e1	<-->	e2	/073	/012	6/069	0.000
e11	<-->	e12	/125	/023	5/313	0.000
e7	<-->	e19	-/140	/028	-5/078	0.000
e12	<-->	e13	/080	/019	4/193	0.000