



## EFL Teachers' Professional Identity in Technological Universities of China: A Mixed Methods Study

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### Abstract

English as a Foreign Language (EFL) teachers in technological universities of China shoulder more formidable challenges as the EFL proficiency of young learners in primary and secondary education gets better, EFL online learning catches on and the position of EFL education becomes more marginalized in technological universities. Nonetheless, the empirical research on professional identity of EFL teachers in tertiary institutions of China that conceptualizes the construct of professional identity, highlights professionalism and hybridizes quantitative and qualitative approaches is very limited. This paper reports a mixed methods investigation into the status quo of EFL teachers' professional identity in technological universities of China and its underlying rationales by focusing on the connected dimensions of personal sense and professional recognition that create professional identity. Results show that the status quo of EFL teachers' professional identity in technological universities of China is undesirable in that EFL teachers' personal sense measured by the sub-constructs of self-efficacy and real value falls far behind their professional recognition gauged by the sub-constructs of duty perception and expected value. The internal problematic research awareness and capacity and the external short-sighted utilitarian milieu ignorant of humanity are the major underlying constraints. This study also sheds light on internal and external pivotal measures taken to improve EFL teachers' professional identity in technological universities of China.

**Keywords:** EFL teachers, technological universities of China, professional identity, mixed methods approach

### INTRODUCTION

With the deepening of reform and opening-up in Mainland China, the Chinese government has attached growing importance to EFL education by specifying English as a compulsory subject in crucial entrance examinations such as Gaokao (college entrance examination) and postgraduate entrance examination. Under these circumstances, EFL training institutions have flourished providing a wealth of courses from English for kids to IELTS\TOEFL and a multitude of EFL teaching and learning resources have been flooding the market. Accordingly, the overall English proficiency of the Chinese people

has witnessed a rapid growth since China opened itself to the outside world. While Chinese young learners become much better at English in primary and secondary education and online learning tends to catch on, several tremendous changes have lately taken place at tertiary level: first, among the recent specialty adjustments made by Ministry of Education, the English specialties of five tertiary institutions were canceled owing to the saturated market demand, including the English specialties at both undergraduate and postgraduate levels of University of Science and Technology of China, one of the prominent technological universities in China; moreover, the compulsory subject of College English in a majority of universities or colleges is severely plagued by shrinking credits and hours; thirdly, in such a new historical epoch, to meet higher demands of students and society, there must be some trans-formative reforms pertinent to English major subjects and the College English subject originally prioritizing students' linguistic competence. Due to the dilemma of EFL education, EFL teachers suffer from marginalization correspondingly, especially in technological universities that put a premium on the development of science or engineering disciplines, as often reflected in their complaints like "Why can't my teaching experience make myself more qualified and better-paid?", "Compared with those faculty working on natural sciences, why is it more difficult for social science researchers to publish indexed papers or win high-level grants?", etc.. EFL teachers are under severe strains of degree upgrading, academic title upgrading, scientific research outputs, heavy teaching load and so on (Tang, 2011) while their degree and academic title conditions still have spacious room for improvement (Wang, 2009). Professional identity is defined as "what teachers themselves find important in their work and lives based on their experiences in practice and their personal backgrounds" as well as "the influence of the conceptions and expectations of other people, including broadly accepted images in society about what a teacher should know and do" (cited in Beijaard, Meijer & Verloop, 2004, p.108). The reason why to put professional identity of EFL teachers in technological universities of China on the research agenda is that as a special group shouldering many challenges, how EFL teachers react to the aforementioned external conditions and how they perceive their duty of work, their practices of work and their working conditions are heavily determining their teaching approaches, their modes of development as teachers and their attitudes towards educational changes (Beijaard et al, 2004).

The scholarly attention on language teacher identity in ESL/TESOL has been increasing over the past decade (as cited in Cheung, 2015). Most literature draw on the factors that influence the negotiation and construction of teachers' professional identity. Xu (2013) explores the professional identity change from the imagined to the practiced of novice Chinese EFL teachers in the pre-service stage and the first years of teaching, mediated by the socio-cultural circumstances. Song (2016) foregrounds a critical role of emotional vulnerability in the construction and presentation of language teacher identity in South Korea. Building on a longitudinal narrative inquiry of one focal participant, Wolff & De Costa (2017) document an intricate interplay between teacher emotion, identity construction and strategy use for nonnative English-speaking teachers (NNESTs). Fajardo Castañeda (2014) notes how pre-service teachers form, shape or transform their professional identities from the two interconnected dimensions of social recognition and

cognition. By connecting the focal participant's past, present, and future narratives, Kayi-Aydar (2015) contends how foreign language teacher identity interacts with agency. Reis (2011) argues how narrative inquiry mediates a NNEST to articulate and assert professional legitimacy in the contexts of the native speaker (NS) myth. Albeit these studies demonstrate the multiple, dynamic, relational, situated and yet negotiable features of professional identity of language teachers (Norton, 2006), they haven't conceptualized and structured professional identity in that every narrative description is limited by giving an isolated picture of the attributes of professional identity.

Nonetheless, some studies discuss the multidimensionality of teachers' professional identity. For example, by utilizing a concept mapping method, Lim (2011) addresses the core concepts that make up professional identity of Korean EFL student teachers. Ahmad, Latada, Shah & Wahab (2017) contribute to a systematic investigation of the intrinsic and extrinsic essentials of professional identity of Pakistani expatriate EFL teachers in Saudi Arabia. By applying the hermeneutic lens, Han (2016) reconceptualizes Korean English teachers' professional identity from their responses to the latest national English curriculum and professional standards in Korea. Applying a self-developed instrument constituted by the four dimensions of professional environment, educational reform, research investment and professional behavior, Tang (2015) conducts a large-scale investigation of professional identity of Chinese College English teachers. Based on the aforementioned studies reviewed, some niches need to be addressed in addition to the very limited studies entailing the Chinese EFL context. First, it isn't clarified how different facets or concepts essential for professional identity are related. Secondly, notwithstanding explicit attention shifted to the impact of context on professional identity formation, what counts as professional, linking interactively personal identity to "the collective identity of a teaching field" remains unnoticeable (Pennington & Richards, 2016, p.10). In particular, "a projection of the teacher's view of the institutional role of teacher" is not clear-cut (Pennington & Richards, 2016, p.7). Thirdly, despite an increasingly recognized role of emotion in language teacher identity, most studies explore emotion through narrative stories or by qualitative methods. The mixed-method approach is overlooked. There is a point to note that the combination of quantitative study and qualitative study can regard a comprehensive and structured framework of professional identity as well as "identity as a process that is being continually constructed by understandings, interpretations and interactions of individuals" (Kus, 2003, p. 4).

To gain an in-depth investigation in this regard, this paper attempts to explore the construct of professional identity through dimensions of personal sense and professional recognition that create professional identity by use of the mixed-method approach. Since the formation of professional identity is negotiated through the interaction between various facets as a set of attitudes and behaviors and a value-construct of the profession which the teacher would project (Pennington & Richards, 2016), this study is guided by the following research questions specifically:

- (1) What is the status quo of EFL teachers' professional identity in technological universities of China? What are the existing dimensional characteristics of

personal sense and professional recognition in their professional identity? How are the various facets of professional identity related?

- (2) Will, and if so in what ways, the demographic factors, i.e. gender, university level, teaching experience, degree, academic title, subject taught, predict the total value and sub-values of professional identity?
- (3) Regarding the characteristic manifestations, what are the underlying rationales?

## METHODOLOGY

### Research design

The study was conducted in the manner of mixed methods with a quantitative questionnaire survey followed by a qualitative explanatory semi-structured interview. The survey data were processed by use of SPSS 25.0. A semi-structured interview protocol was subsequently worked out on account of the statistical results. Finally, the interview data were transcribed into text for quantitative content analysis.

### Participants

The sample frame included 54 full-time English teachers from 16 different technological universities in the Chinese mainland. Fifty-one participants were selected randomly by SPSS 25.0. Among them, 42 were female teachers, 9 male teachers; 9 had less than 10 years of teaching experience, 29 taught for more than 10 years but less than 20 years and 13 had over 20 years' teaching experience; 31 were lecturers or assistants, 15 associate professors, 5 professors; 35 held bachelor's or master's degree and 16 were Ph.D. graduates or Ph.D. candidates; 12 taught English majors, 27 were college English instructors and 12 taught both English majors and non-English majors; 15 were first-rate university teachers, 36 applied university teachers. For the follow-up interview, 11 participants were selected purposefully from the same sampling in the survey, whose demographic features were described in Table 1.

**Table 1.** An overview of the 11 interviewees and their demographic details

Interviewee	Gender	Teaching experience (year)	Degree	Academic title	University type	Subject taught
No.1	Female	18	Master	Lecturer	Applied	College English
No.2	Male	1	PhD	Lecturer	Applied	English majors & College English
No.3	Male	32	Bachelor	Professor	Applied	English majors
No.4	Male	15	PhD	Associate Professor	First-rate	College English
No.5	Female	11	PhD candidate	Associate Professor	First-rate	College English
No.6	Female	17	Master	Lecturer	Applied	College English
No.7	Female	10	Master	Lecturer	Applied	College English
No.8	Male	13	Master	Lecturer	Applied	College English
No.9	Female	27	Master	Associate Professor	Applied	English majors
No.10	Female	5	PhD	Lecturer	Applied	English majors
No.11	Male	36	PhD candidate	Associate Professor	Applied	College English

## Theoretical framework

To integrate personal, contextual and professional characteristics of teacher identity in language teaching, Pennington & Richards (2016) reconceptualize eight dimensions of language teaching competence and performance in relation to other relevant research into two categories: "Foundational Competences of Language Teacher Identity" and "Advanced Competences of Language Teacher Identity" (Pennington & Richards, 2016, p.11). "Foundational Competences of Language Teacher Identity" is categorized into "language-related identity", "disciplinary identity", "context-related identity", "self-knowledge and awareness", and "student-related identity", whereas "Advanced Competences of Language Teacher Identity" into "practiced and responsive teaching skills (knowledge into practice)", "theorizing from practice (practice into knowledge)", and "membership in communities of practice and profession" (Pennington & Richards, 2016, pp.11-20). Language-related identity requires teachers to "develop specific communicative skills for teaching through that language" (Pennington & Richards, 2016, p.11). Disciplinary identity is enacted by such areas of knowledge as the language taught, language teaching approaches and methods, language learning theory, testing and assessment, curriculum and classroom management, applied research methods, and critical pedagogy (Pennington & Richards, 2016). Context-related identity concerned with the evolution of teacher identity is dichotomized into "favoring conditions" and "disfavoring conditions" (Pennington & Richards, 2016, p.14). Self-knowledge and awareness entails making most use of one's personal qualities, values, and ideals to optimize teaching (Pennington & Richards, 2016). A focus on students, both as individuals and as learner groups, referred to as student-related identity, contributes to identity interaction between teachers and students, thus facilitating effective teaching and learning (Pennington & Richards, 2016). Transforming knowledge into practice means "the teacher will have a ready set of skills and responses to apply in different circumstances of teaching and learning, and will also have a degree of flexibility in being able to customize as needed" (Pennington & Richards, 2016, p.17). Like other teachers, it is also essential that language teachers not only be familiar with the theoretical orientations of language-related teaching and learning but also theorize themselves based on teaching practices and critical pedagogy (Pennington & Richards, 2016). Teachers participate in communities of practice and profession by "sharing knowledge, perspectives, and values with other practitioners, reflecting on those of others, acquiring new knowledge and then shifting perspectives and values accordingly" (Pennington & Richards, 2016, p.20).

## Instruments

The instruments incorporated a 106-item close-ended 5-point Likert scale and an explanatory interview protocol. Drawing upon Pennington and Richards (2016)'s framework of teacher identity in language teaching and the validating results deriving from a pilot study, Weng (2015) 's inventory of professional identity was adapted, marked by the interconnected dimensions of personal sense and professional recognition and the four classified sub-constructs of duty perception, self-efficacy, expected value, real value (See Appendix A). Thirty-five items were grouped into the section of duty

perception, thirty-five items into the section of self-efficacy, eighteen items into the section of expected value and the remaining eighteen items into the section of real value. The sub-constructs of duty perception and expected value embody professional recognition while the sub-constructs of self-efficacy and real value represent personal sense. The semi-structured interview protocol made up of six open-ended questions was meticulously designed for the purpose of confirming the key significant predictors and results, exploring the predominant underlying rationales affecting EFL teachers' professional identity (See Appendix B).

### **Procedures for data collection**

Prior to the formal survey, thirty EFL teachers on the subject list are piloted with the questionnaire to try out the reliability and validity of the instrument. Before the survey links were sent, sixty subjects related to this project were informed and their willingness to participate in the survey was received. Fifty-four valid responses were collected via Wechat from them (the effective response rate reaching 90%). From this sampling frame, fifty-one responses were sampled randomly by SPSS 25.0. In the second stage, upon confirmation with the eleven selected interviewees who participated in the previous survey, an in-depth semi-structured voice interview was conducted for them based on the drafted interview protocol. Afterwards, the audio recording files were transcribed into text by the researcher for analysis.

### **Data analysis**

Prior to the parametric statistical tests, the internal consistency of the scale was measured by Cronbach's Alpha and the data distribution was examined in calculations of skewness and kurtosis. The next step was to use descriptive statistics to summarize the data with such measures as Mean, Median, Mode, Range, SD. The results could describe the overall characteristics of professional identity of the sample. The Spearman correlation coefficient was calculated for the relationship among the facets of duty perception, self-efficacy, expected value, real value. In order to investigate whether and how the demographic factors significantly predict the variances in the total value and sub-values of professional identity, multiple t-tests and one-way ANOVAs were employed to compare the means of two or more groups varying on a single factor. Finally, based on quantitative content analysis, the interview data were coded under the taxonomy of various themes in the interview protocol.

## **RESULTS**

### **Quantitative results**

First, to assess the scale reliability, Cronbach's alpha was computed. The alpha for all the items was .966, which indicated a very good internal consistency (See Table 2). The alphas for the four subscales of duty perception, self-efficacy, expected value, real value were respectively .956, .960, .937, .936, all marking a very good reliability.



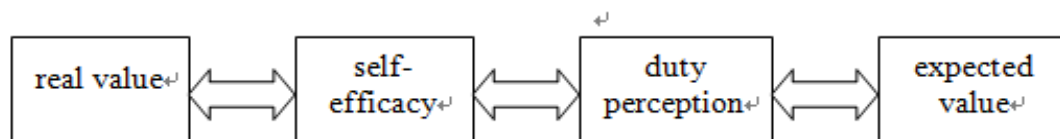
Thirdly, in order to explore the linear relationship among the sub-constructs of duty perception, self-efficacy, expected value, real value, Spearman rank order correlations were measured. According to Table 4, there were fairly strong, positive correlations between duty perception and self-efficacy ( $r_s=.561$ ,  $n=51$ ,  $p<0.01$ ), between duty perception and expected value ( $r_s=.624$ ,  $n=51$ ,  $p<0.01$ ), with high-level duty perception associated with high-level self-efficacy and expected value respectively. Moreover, high-level self-efficacy predicted high-level real value ( $r_s=.393$ ,  $n=51$ ,  $p<0.01$ ) and vice versa. The correlations among duty perception, self-efficacy, expected value, real value were presented in Fig.1.

**Table 4.** Correlations among duty perception, self-efficacy, expected value, real value

		duty perception	self-efficacy	expected value	real value	
Spearman's rho	duty perception	Correlation Coefficient	1.000	.561**	.624**	0.243
		Sig. (2-tailed)		0.000	0.000	0.086
		N	51	51	51	51
	self-efficacy	Correlation Coefficient	.561**	1.000	.290*	.393**
		Sig. (2-tailed)	0.000		0.039	0.004
		N	51	51	51	51
	expected value	Correlation Coefficient	.624**	.290*	1.000	0.075
		Sig. (2-tailed)	0.000	0.039		0.601
		N	51	51	51	51
	real value	Correlation Coefficient	0.243	.393**	0.075	1.000
		Sig. (2-tailed)	0.086	0.004	0.601	
		N	51	51	51	51

\*\* . Correlation is significant at the 0.01 level (2-tailed).

\* . Correlation is significant at the 0.05 level (2-tailed).



**Figure 1.** Correlations among the facets of professional identity

Next, independent t-tests were conducted to compare the total identity level between male teachers and female teachers, between first-rate university teachers and applied university teachers, between bachelor's or master's degree holders and Ph.D. graduates or candidates. There was no significant difference in scores for male teachers ( $M=4.17$ ,  $SD=.38$ ) and female teachers ( $M=4.11$ ,  $SD=.34$ ;  $t(49)=.51$ ,  $p=.61$ ), scores for first-rate



university teachers ( $M=4.09$ ,  $SD=.41$ ) and applied university teachers ( $M=4.13$ ,  $SD=.32$ ;  $t(21)=-.35$ ,  $p=.73$ ), scores for bachelor's or master's degree holders ( $M=4.08$ ,  $SD=.36$ ) and Ph.D. graduates or candidates ( $M=4.21$ ,  $SD=.30$ ;  $t(49)=-1.23$ ,  $p=.22$ ). Nevertheless, with independent t-tests further conducted to compare the sub-constructs of duty perception, self-efficacy, expected value, real value between male teachers and female teachers, between first-rate university teachers and applied university teachers, between bachelor's or master's degree holders and Ph.D. graduates or candidates, the significant difference was located in real value scores between bachelor's or master's degree holders ( $M=3.28$ ,  $SD=.69$ ) and Ph.D. graduates or candidates ( $M=3.80$ ,  $SD=.43$ ,  $t(49)=-2.73$ ,  $p=.009$ , Bonferroni correction value=.013) (See Table 5&Table 6).

**Table 5.** Group statistics of highest degree

highest degree		N	Mean	Std. Deviation	Std. Error Mean
duty perception	master or below	35	4.5796	0.37743	0.06380
	doctor	16	4.5804	0.39088	0.09772
self-efficacy	master or below	35	3.9322	0.49015	0.08285
	doctor	16	4.0644	0.46016	0.11504
expected value	master or below	35	4.5222	0.51435	0.08694
	doctor	16	4.3856	0.46580	0.11645
real value	master or below	35	3.2810	0.69270	0.11709
	doctor	16	3.7951	0.42582	0.10645

**Table 6.** Independent Samples Test of groups

		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
duty perception	Equal variances assumed	0.231	0.633	-0.007	49	0.995	-0.00077	0.11516	0.23218	0.23065
	Equal variances not assumed			-0.007	28.248	0.995	-0.00077	0.11670	0.23972	0.23819
self efficacy	Equal variances assumed	0.107	0.745	-0.910	49	0.367	-0.13213	0.14521	0.42393	0.15967

	Equal variance s not assumed			- 0.932	30.92 5	0.359	-0.13213	0.14177	- 0.4213 0	0.1570 4
expected value	Equal variance s assumed	0.76 4	0.38 6	0.905	49	0.370	0.13660	0.15089	- 0.1666 2	0.4398 2
	Equal variance s not assumed			0.940	31.99 7	0.354	0.13660	0.14533	- 0.1594 2	0.4326 2
real value	Equal variance s assumed	2.46 9	0.12 3	- 2.733	49	0.009	-0.51412	0.18809	- 0.8920 9	- 0.1361 4
	Equal variance s not assumed			- 3.249	44.50 8	0.002	-0.51412	0.15825	- 0.8329 4	- 0.1952 9

Lastly, to explore the impact of those independent variables of teaching experience, academic title, subject taught with three groups on the total identity level, one-way between-groups ANOVAs were conducted. The results demonstrated no statistically significant difference at the  $p < .05$  level in the total identity scores for the three groups with different teaching experience (0-9 years, 10-19 years, 20 or more years) [ $F(2, 48) = 1.02, p = .37$ ], in the total identity scores for the three groups with different academic titles (lecturer or below, associate professor, professor) [ $F(2, 48) = .37, p = .70$ ], in the total identity scores for the three groups who taught different subjects [ $F(2, 48) = .23, p = .80$ ]. Notwithstanding, in light of the respective impact of these three independent variables on the sub-values of duty perception, self-efficacy, expected value, real value through several simultaneous one-way ANOVA tests, a statistically significant difference was tracked at the  $p < .05$  level in scores of real value among the three groups with different teaching experience (0-9 years, 10-19 years, 20 or more years) [ $F(2, 48) = 4.49, p = .016$ ] (See Table 8). Post-hoc comparisons using the Bonferroni correction test indicated that the real value score for the group with 0-9 years' teaching experience ( $M = 4.00, SD = .36$ ) was significantly different from that for the group with 10-19 years' teaching experience ( $M = 3.35, SD = .62, p = .025$ ) and that for the group with 20 or more years' teaching experience ( $M = 3.27, SD = .75, p = .027$ ) (See Table 9). The real value score for the group with 0-9 years' teaching experience ( $M = 4.00, SD = .36$ ) far surpassed that for the group with 10-19 years' teaching experience ( $M = 3.35, SD = .62$ ) and that for the group with 20 or more years' teaching experience ( $M = 3.27, SD = .75$ ). As teaching experience lengthened, the real value mean decreased (See Table 7).

**Table 7.** Descriptives of group teaching experience

		N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Minimum	Maximum
						Lower Bound	Upper Bound		
duty perception	0-9	9	4.5841	0.37228	0.12409	4.2980	4.8703	4.11	5.00
	10-19	29	4.6325	0.35380	0.06570	4.4979	4.7671	3.69	5.00
	20 or more	13	4.4593	0.43322	0.12015	4.1975	4.7211	3.49	5.00
	Total	51	4.5798	0.37776	0.05290	4.4736	4.6861	3.49	5.00
self efficacy	0-9	9	3.8952	0.35283	0.11761	3.6240	4.1664	3.43	4.37
	10-19	29	3.9803	0.44716	0.08303	3.8102	4.1504	3.03	5.00
	20 or more	13	4.0133	0.63670	0.17659	3.6285	4.3981	2.89	4.97
	Total	51	3.9737	0.48034	0.06726	3.8386	4.1088	2.89	5.00
expected value	0-9	9	4.5062	0.37002	0.12334	4.2217	4.7906	3.94	5.00
	10-19	29	4.5115	0.53481	0.09931	4.3081	4.7149	3.33	5.00
	20 or more	13	4.3891	0.51708	0.14341	4.0767	4.7016	3.22	5.00
	Total	51	4.4794	0.49909	0.06989	4.3390	4.6197	3.22	5.00
real value	0-9	9	4.0000	0.36430	0.12143	3.7200	4.2800	3.28	4.67
	10-19	29	3.3467	0.61697	0.11457	3.1121	3.5814	1.61	4.44
	20 or more	13	3.2691	0.75070	0.20821	2.8155	3.7228	2.22	4.67
	Total	51	3.4422	0.66237	0.09275	3.2560	3.6285	1.61	4.67

**Table 8.** One-way ANOVAs of groups

		Sum of Squares	df	Mean Square	F	Sig.
duty perception	Between Groups	0.269	2	0.135	0.942	0.397
	Within Groups	6.866	48	0.143		
	Total	7.135	50			
self-efficacy	Between Groups	0.077	2	0.039	0.161	0.851
	Within Groups	11.459	48	0.239		
	Total	11.536	50			
expected value	Between Groups	0.142	2	0.071	0.277	0.759
	Within Groups	12.312	48	0.257		
	Total	12.454	50			
real value	Between Groups	3.454	2	1.727	4.485	0.016
	Within Groups	18.483	48	0.385		
	Total	21.937	50			

**Table 9.** Multiple Comparisons (Bonferroni)

Dependent Variable			Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval		
						Lower Bound	Upper Bound	
duty perception	0-9	10-19	-0.04839	0.14431	1.000	-0.4064	0.3096	
		20 or more	0.12479	0.16400	1.000	-0.2821	0.5316	
	10-19	0-9	0.04839	0.14431	1.000	-0.3096	0.4064	
		20 or more	0.17317	0.12623	0.529	-0.1400	0.4863	
	20 or more	0-9	-0.12479	0.16400	1.000	-0.5316	0.2821	
		10-19	-0.17317	0.12623	0.529	-0.4863	0.1400	
	self-efficacy	0-9	10-19	-0.08506	0.18643	1.000	-0.5476	0.3774
			20 or more	-0.11806	0.21187	1.000	-0.6437	0.4075
10-19		0-9	0.08506	0.18643	1.000	-0.3774	0.5476	
		20 or more	-0.03300	0.16308	1.000	-0.4376	0.3716	
20 or more		0-9	0.11806	0.21187	1.000	-0.4075	0.6437	
		10-19	0.03300	0.16308	1.000	-0.3716	0.4376	
expected value		0-9	10-19	-0.00532	0.19325	1.000	-0.4847	0.4741
			20 or more	0.11703	0.21962	1.000	-0.4278	0.6619
	10-19	0-9	0.00532	0.19325	1.000	-0.4741	0.4847	
		20 or more	0.12235	0.16904	1.000	-0.2970	0.5417	
	20 or more	0-9	-0.11703	0.21962	1.000	-0.6619	0.4278	
		10-19	-0.12235	0.16904	1.000	-0.5417	0.2970	
	real value	0-9	10-19	.65326*	0.23677	0.025	0.0659	1.2406
			20 or more	.73085*	0.26908	0.027	0.0633	1.3984
10-19		0-9	-.65326*	0.23677	0.025	-1.2406	-0.0659	
		20 or more	0.07760	0.20712	1.000	-0.4362	0.5914	
20 or more		0-9	-.73085*	0.26908	0.027	-1.3984	-0.0633	
		10-19	-0.07760	0.20712	1.000	-0.5914	0.4362	

\*. The mean difference is significant at the 0.05 level.

### Fusion of quantitative and qualitative results

An integration display of dichotomous categories that arrayed the quantitative data and coded qualitative data was presented, in which inferences were made.

Themes	Quantitative data	Qualitative data	Mixed-method meta-inferences
self-efficacy	M=3.9737, SD=.48034 (<4.1188)	Due to school policies and student conditions, I feel my ability falls short of my wishes and think I have made use of 60% overall competence, the achieved effects even worse. (Data from Interviewee 8)	Eight comments (73%) confirmed the generally unfavorable fulfillment of

	<p>My teaching motivation was negatively affected by students' poor class engagement and low learning motivation. (Data from Interviewee 6 and Interviewee 2)</p> <p>I feel it insufficient to theorize teaching practices for the improvement of efficiency. Theorizing from practices is a common bottleneck for EFL teachers that needs tackling. There is something even worse with serving the community. (Data from Interviewee 9)</p> <p>I treat researching without enthusiasm and fear about the difficulties concerning new methodologies and theories. (Data from Interviewee 7)</p> <p>I have found my teaching somewhat ineffective and research on effective teaching seems insignificant in improving students' language proficiency. (Data from Interviewee 1 and Interviewee 10)</p> <p>My situation is disappointing with undesirable teaching efficiency and a limited number of research outputs, which is caused by my weak research base and time restrictions. (Data from Interviewee 11)</p>	<p>teachers' duties, which were mainly attributed to research-related problems like theories and methodologies, theorizing from teaching practices, learning motivation, class engagement, feeding research into teaching.</p>
real value	<p>M=3.4422, SD=.66237 (&lt;4.1188)</p> <p>The discipline of language studies has suffered from marginalization in technological universities and I think more than 50% expected values of me haven't been fulfilled but since EFL is an important tool to study other disciplines of natural sciences, EFL teachers can engage themselves in academic English for professional development. (Data from Interviewee 8)</p> <p>My current job has only realized my partial values for the instrumentality of EFL teaching is overemphasized and the humanity is overlooked in technological universities (Data from Interviewee 1 and Interviewee 10)</p> <p>Due to the exam-oriented macro goal of EFL teaching in technological universities, the outdated grammar translation methodology seems the most effective to achieve this goal so that I can't feel free to apply my studies on teaching methodologies to the real practices. Other methodologies like task-based teaching and learning can yield long-lasting but slow results. (Data from Interviewee 2 and Interviewee 4)</p> <p>The school administration should be highly attentive to the role of EFL teaching in liberal education. EFL education in technological universities should be more concerned with the soft power of intercultural communication and cultural transmission which EFL teaching can function to produce so that technological universities can help cultivate critical global citizenship. However, most technological</p>	<p>Eight comments (73%) confirmed the under-achieved self-worth and underpinned the rationales of prevailing utilitarianism and disciplinary marginalization for the contextual restrictions.</p>

	<p>universities in China are stuck in low-end position of overemphasizing technology but underemphasizing humanity. For both English majors and non-English majors, only language proficiency is prioritized and the vital drilling in critical thinking is unfortunately disregarded (Data from Interviewee 3).</p> <p>As an experienced EFL teacher, I feel disillusioned by the inferiority of my discipline to other engineering disciplines in output quantity and quality evaluated by the administration. It requires the school administration to make an in-depth investigation into how to evaluate different disciplines rationally and scientifically. (Data from Interviewee 9)</p>	
	<p>Albeit I enjoy my teaching, the teaching effectiveness is long plagued by the administrative decision-making such as strained teaching time, scarce online resources, unreasonable class division. Some suggestions have been proposed for the reform but so far the solutions have not been salient. (Data from Interviewee 11)</p>	
<p>the effects of teaching experience on real value</p> <p>F (2, 48) =4.49, p=.02</p>	<p>The reduced sense of achievement has been identified by myself, as I reflect the improved qualities of students place much higher demands on me. (Data from Interviewee 6 and Interviewee 4)</p> <p>During my 10-year teaching experience, I found a decrease in my sense of achievement due to my increasing demand of myself and my stagnated academic progress. (Data from Interviewee 1 and Interviewee 7)</p> <p>Once I began my teaching career, I was fired with boundless enthusiasm but now my real sense has changed a lot due to several reasons, some from aggravating family burdens, some from lessening university supports. (Data from Interviewee 8)</p> <p>My enthusiasm towards teaching declined as the similar tasks were repeated year after year except for the different cohorts of students and as age increased I suffered increasing economic pressures so as to find the other part-time jobs elsewhere. (Data from Interviewee 3)</p> <p>With a PhD, I became a university teacher one year ago; notwithstanding in a minor discipline, I felt less stressful and less competitive so that I could embrace enough room for development. (Data from Interviewee 2)</p> <p>My 36-year teaching experience witnessed my transformed research awareness. When I just started my career, I had no idea what research was for. Nonetheless, it was in my fifties that I began to recognize the significance of research. Limited by strength and energy in one's fifties, I</p>	<p>Eight comments (73%) confirmed the salient effects of teaching experience on real value and uncovered multiple reasons.</p>

		could do nothing about yielding quantified and qualified outputs (Data from Interviewee 11)	
		I'm keenly aware of the importance of educational background on value achievement. Conditionally, academic promotion and grant application are rigidly associated with the applicant's educational background. More importantly, PhD study is a kind of academic and cognitive drilling, which relates to the width and depth of a research. (Data from Interviewee 8, Interviewee 9)	
the effects of degree promotion on real value	t(49)=-2.73, p=.009, Bonferroni correction value=.013	During my PhD studies, I received systematic academic training which greatly distinguished my current teaching style from my previous teaching off a blackboard. When I was a postgraduate, I had no idea why tertiary teachers should do research; but having experienced Ph.D. studies I could provide effective solutions to the teaching and learning problems based on the existing studies and meanwhile find more discordance between theory and practice for further research. (Data from Interviewee 4)	Seven comments (70%) identified with the effects of degree
		With the exaltation of degree, the cognitive depth and style is transforming gradually. (Data from Interviewee 10)	exaltation on real values at the levels of cognition and perception, teaching effectiveness, project undertaking and career development.
		The master's degree of linguistics stresses practical skills while the Ph.D. of linguistics stresses research; therefore, EFL teachers with different backgrounds will bring inputs of different levels to students which lead to different values. (Data from Interviewee 7)	
		A PhD enabled me to be more competitive in a discipline with fewer PhD holders. (Data from Interviewee 2)	
		PhD studies can expand one's vision. A defended PhD dissertation is a best corroboration. (Data from Interviewee 11)	
		Despite my professorship, only the systematic academic drilling during PhD studies can enable a person to take on a project and accomplish it. (Data from Interviewee 3)	
the identity of teacher as researcher		I identify with teacher as researcher but now I don't have enough time and passion for research and am afraid of heavy research output imposed by the university. (Data from Interviewee 1)	Five comments (40%) confirmed the identification of teacher as researcher, lacking robust evidence of implementation.
		This identity plays an important role in teacher identity construction because teaching will be unplanned and decentralized for a lack of theoretical directions. (Data from Interviewee 7)	
		I agree with this identity but I need complement the prerequisite of this identity that is to be a qualified teacher first. (Data from Interviewee 8)	
		Teacher as researcher is a good vision. In reality, many teachers don't know relevant theory and	

	methodology, preventing them from understanding the glamour of research.	
pivotal measures to enhance professional identity	<p>The internal being more important than the external, teachers themselves should define a clear-cut individual plan for their professional development. (Data from Interviewee 4, Interviewee 5 and Interviewee 8)</p> <p>Since research cannot be separated from teacher identity construction, the practicality of a community between teaching, learning and researching is demanded with strong policy supports. (Data from Interviewee 3 and Interviewee 9)</p> <p>In-depth inquiries of English for Special Purpose (ESP) can be an impetus for EFL teachers' professional identity development and FL disciplinary development in technological universities. We should integrate individual professional development into the overall FL disciplinary development. (Data from Interviewee 6 and Interviewee 7)</p> <p>Specific internal and external planning for teacher development and disciplinary development is urgently demanded. (Data from Interviewee 11)</p>	<p>Eight comments (73%) highlighted strategic solutions like individual planning, community construction, ESP inquiry.</p>

## DISCUSSION

Responding to the research questions posed, the findings first show the status quo of EFL teachers' professional identity in technological universities of China is undesirable, especially in the aspects of self-efficacy and real value. EFL teachers' personal sense measured by the sub-constructs of self-efficacy and real value falls far behind their professional recognition gauged by the sub-constructs of duty perception and expected value. This means that there is still spacious room for professional identity negotiation and adaptation. Duty perception, self-efficacy, expected value and real value, the four facets of professional identity, are interconnected. Real value correlates with self-efficacy, self-efficacy with duty perception, duty perception with expected value. Second, both quantitative and qualitative results indicate the demographic factors of degree and teaching experience predicts EFL teachers' real value which will improve with degree promotion and deteriorate as teaching experience lengthens. Finally, the explanatory interview identifies that self-efficacy is seriously constrained by superficial research awareness and problematic research capacity; the unsatisfactory real value achievement is badly affected by the utilitarian educational policy and disciplinary marginalization. Clearly, the major underlying constraints are the internal problematic research awareness and capacity and the external short-sighted utilitarian milieu ignorant of humanity.

Driven by the immediate utilitarian goal, most EFL teachers are fundamentally unaware of the long-term benefits of research to teaching outcomes. Neither do they understand why and how to make best use of research to facilitate the problem-solving of low-level



motivation and participation in class, for which students are always to blame. Most of them think the main purpose of EFL teaching in China is to develop students' language skills, which can be reached with their expanding teaching experience and rote-memorization teaching method. This situation has contributed to their perceived ineffectiveness of research and thus no urgent need to devote so much time and energy to it. It is merely the extrinsic requirements of academic promotion and evaluation instead of the intrinsic desires to develop teaching efficiency and qualification that drive them to research. It is of primary importance that the internal driving force of research consciousness and spirit should be reinforced (Yang, Zhang & Xie, 2001). Critical thinking and comprehensive research capacity can be optimized through continuing education such as Ph.D. education, during which a candidate's knowledge structure, professional attitude, teaching ideology, research consciousness and professional identity witness significant changes and they move from the peripheral to the core in the academic community (Hao, 2010). The significant difference in real value achievement between the young teachers with shorter teaching experience and the teachers with over 10 years' experience reconciles with the findings of Tang (2011) who argues that:

There were mild, moderate and severe job burnout among 69 %, 46 % and 8 % of the participants. Those aged between 30 and 39 were apt to suffer burnout. The situation of teaching disjoined with research constituted a major factor of weakness in real value achievement. (p.56)

Hargreaves (2005) discovers the 50 subjects were vigorous and positive at the commencement of their career and inclined to accommodate themselves to the challenges despite inexperience; as their teaching experience increased emotional fatigue occurred. This fatigue results from the problems concerning academic progress and professional identity (Tang, 2015).

## **CONCLUSION**

The results of this study suggest that EFL teachers in technological universities of China are severely challenged by research problems and organization-related problems. Situated in the utilitarian context with a highlight on technology and a disregard of humanity, EFL teachers find it difficult to capture the intrinsic motivation to engage in research. Moreover, research is by no means easy in that it requires systematic professional training and persistent accumulation. Along this line of thinking, EFL teachers inevitably encounter serious problems in research which will ruin their professional identity.

The findings presented above provide some pedagogical implications for educational authorities and teachers. Firstly, as China's economy leaps forward these years, the imbalance between economic development and cultural progress is more and more prominent. Functioning as major incubators of technical specialists, technological universities in China should pay special attention to humanistic thinking that has been neglected by the majority. Otherwise, the high-end labor force with global vision, integral personality and critical thinking is impossible to shape; innovative brand economy will remain an unworkable slogan. Secondly, it is high time that EFL teachers should develop

their intrinsic interest in research by starting from class observation and reflection and hence applying teaching plans grounded in theory into practice. Only when they realize the contributions of research to their real work will they invest in it persistently. By then, they will find research is not a hard nut but a spiritual enjoyment. Last but not the least, the effectiveness of FL disciplinary development in technological universities should be enhanced practically and earnestly with long-term sustained attention and support from university administration. Albeit every university implements disciplinary development for foreign language studies, very few universities boast of their distinctive characteristics and cohesive groups. Just as the interviewees reflected, the research and implementation on the conjunction of ESP and the major disciplinary directions of every technological university can be a feasible alternative for foreign language studies. Since it is deemed as a pivotal breakthrough to internationalize technological universities, it is essential for the university authority to consider investing an adequate quantity of resources as a guarantee. Under the incentive mechanism, the group leader is motivated to organize and guide the members to co-investigate, discuss and reap by making full use of his or her expertise so as to prevent a lack of coordination. The teaching and research community formation will inevitably benefit EFL teachers' professional identity for a long run.

In spite that this paper has made an attempt to construct and gauge EFL teachers' professional identity in technological universities of China and conclude some meaningful findings, limitations cannot be omitted. The data of this study mainly come from teachers' reported perceptions and beliefs. In further investigation, student interviews and classroom observations on duties and self-efficacy of EFL teachers are preferred to demonstrate a complete and more convincing picture of teacher professional identity. In addition, due to time limitation, the sample size is relatively small and needs further expanding to generalize the results.

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## Appendix A.

### **The questionnaire of EFL teachers' professional identity in technological universities of China (originally in Chinese)**

Dear participants,

In order to gain a comprehensive understanding about the perceptions of EFL teachers in technological universities of China on their professional identities and provide references for facilitating EFL teachers' professional development in technological universities of China, we have organized this investigation. The following questionnaire includes some statements in relation to cognition of EFL teachers' professional identity, for the mere purpose of collecting data for research. This questionnaire is anonymous. Please answer all the questions in the light of actual conditions. Thank you for your kind cooperation!

#### 1. Gender

- Male
- Female

#### 2. The type of university you work in

- First-rate university
- applied local university

#### 3. Your teaching experience

- 0-4 years
- 5-9 years
- 10-14 years
- 15-19 years
- 20-24 years
- 25 years or over

## 4. Your academic title

- teaching assistant
- lecturer
- associate professor
- professor

## 5. Your highest degree

- Master's degree or below
- Ph.D (including PhD candidate)

## 6. The subject you teach

- English major subject
- college English

7. The scale items involve EFL teachers' duty perception and self-efficacy. The five stars in the column of Significance in my mind represent "very unimportant", "unimportant", "average", "important", "very important" from left to right. The left-to-right five stars in the column of My capability represent "completely incapable", "incapable", "average", "capable", "fully capable".

Statements	Significance in my mind	My capability
Corresponding textbooks should be digested thoroughly upon syllabuses.	1 2 3 4 5	1 2 3 4 5
EFL teacher should take the actual situations of learners into full consideration.	1 2 3 4 5	1 2 3 4 5
EFL teacher should have a good command of discipline-related knowledge and skills.	1 2 3 4 5	1 2 3 4 5
EFL teacher should have a good command of pedagogical knowledge and skills.	1 2 3 4 5	1 2 3 4 5
EFL teacher should have a good command of English-speaking countries' cultures.	1 2 3 4 5	1 2 3 4 5
EFL teacher should learn to motivate English learners effectively.	1 2 3 4 5	1 2 3 4 5
EFL teacher should help learners increase confidence in language learning.	1 2 3 4 5	1 2 3 4 5
EFL teacher should introduce effective language learning approaches to learners.	1 2 3 4 5	1 2 3 4 5
EFL teacher should pace their teaching efficiently.	1 2 3 4 5	1 2 3 4 5
EFL teacher should help learners to internalize what they have learned by working out appropriate activities or exercises.	1 2 3 4 5	1 2 3 4 5
EFL teacher should know how to assess learners appropriately.	1 2 3 4 5	1 2 3 4 5
Multicultural knowledge should be imparted to learners.	1 2 3 4 5	1 2 3 4 5
EFL teacher should specify the requirements and instructions on assigned tasks.	1 2 3 4 5	1 2 3 4 5
EFL teacher should enlighten learners on how to behave properly in life.	1 2 3 4 5	1 2 3 4 5
EFL teacher would like to share their own life experiences with learners.	1 2 3 4 5	1 2 3 4 5

EFL teacher should incorporate extracurricular knowledge into classroom teaching.	1 2 3 4 5	1 2 3 4 5
EFL teacher should have a sense of humor.	1 2 3 4 5	1 2 3 4 5
EFL teacher should be sincere and kind.	1 2 3 4 5	1 2 3 4 5
EFL teacher should increase communication with learners after school.	1 2 3 4 5	1 2 3 4 5
EFL teacher should pace their teaching to the acceptance of learners.	1 2 3 4 5	1 2 3 4 5
EFL should consciously develop critical thinking of learners.	1 2 3 4 5	1 2 3 4 5
EFL teacher should draw upon research to facilitate teaching.	1 2 3 4 5	1 2 3 4 5
EFL teacher should draw upon prior studies to make any pedagogical decisions.	1 2 3 4 5	1 2 3 4 5
EFL teacher should assign customized homework to learners.	1 2 3 4 5	1 2 3 4 5
Language use should be fluent and accurate.	1 2 3 4 5	1 2 3 4 5
EFL teacher should enrich their knowledge system by lifelong learning.	1 2 3 4 5	1 2 3 4 5
EFL teacher should be capable of publishing research outputs formally.	1 2 3 4 5	1 2 3 4 5
EFL teacher should practice after-class reflection to improve teaching efficiency.	1 2 3 4 5	1 2 3 4 5
EFL teacher should keep trying new teaching methods.	1 2 3 4 5	1 2 3 4 5
EFL teacher should be actively engaged in research.	1 2 3 4 5	1 2 3 4 5
EFL teacher should pace their English speaking to learners' listening levels.	1 2 3 4 5	1 2 3 4 5
EFL teacher should increase professional and academic communication with their peers.	1 2 3 4 5	1 2 3 4 5
EFL teacher should be knowledgeable.	1 2 3 4 5	1 2 3 4 5
There should be no salient error in lecturing.	1 2 3 4 5	1 2 3 4 5
EFL teacher should be passionate about teaching.	1 2 3 4 5	1 2 3 4 5

8. The scale items involve EFL teachers' expected value and real value. The five stars in the column of Significance in my mind represent "very unimportant", "unimportant", "average", "important", "very important" from left to right. The left-to-right five stars in the column of My real feelings represent "completely incapable", "incapable", "average", "capable", "fully capable".

Statements	Significance in my mind	My real feelings
Students evaluate me affirmatively.	1 2 3 4 5	1 2 3 4 5
Teaching is interesting.	1 2 3 4 5	1 2 3 4 5
Sense of achievement can be gained from research.	1 2 3 4 5	1 2 3 4 5
Sense of achievement can be gained from teaching.	1 2 3 4 5	1 2 3 4 5
The interpersonal relationship between colleagues is harmonious.	1 2 3 4 5	1 2 3 4 5
EFL teacher has a say in teaching development.	1 2 3 4 5	1 2 3 4 5
The school authority is concerned with the work of EFL teachers.	1 2 3 4 5	1 2 3 4 5
Teaching and research are helpful to the improvement of one's self-capacity.	1 2 3 4 5	1 2 3 4 5
The salary and benefits of EFL teachers are satisfactory.	1 2 3 4 5	1 2 3 4 5
Being an EFL teacher can give a full display to my personal value.	1 2 3 4 5	1 2 3 4 5

I am satisfied with my payment compared to the payment of teachers from any other university.	1 2 3 4 5	1 2 3 4 5
I am satisfied with my payment compared to the payment of teachers from any other department.	1 2 3 4 5	1 2 3 4 5
The university should make an objective and fair evaluation of EFL teachers.	1 2 3 4 5	1 2 3 4 5
The university should respect EFL teachers' opinions.	1 2 3 4 5	1 2 3 4 5
Collegial EFL teachers should be respected socially.	1 2 3 4 5	1 2 3 4 5
The work of collegial EFL teachers should be guaranteed.	1 2 3 4 5	1 2 3 4 5
The school administration can meet the needs of teaching and research well.	1 2 3 4 5	1 2 3 4 5
There are many promotional opportunities for collegial EFL teachers.	1 2 3 4 5	1 2 3 4 5

## Appendix B.

### Interview protocol

Dear participants,

Thank you again for your cooperation in the study of EFL teachers' professional identity in technological universities of China. This is a follow-up interview protocol which aims to investigate the in-depth information. Please feel free to express your spontaneous opinions since it is only used for research only. Your detailed information and all the answers will remain confidential.

1. To what extent have you realized your professional values as an EFL teacher in technological universities? What are the main reasons?
2. How do you evaluate your professional competence and self-efficacy as an EFL teacher in all aspects like teaching, research, social service, etc.? What are the main reasons?
3. How did your sense of achievement change as your teaching experience increased? Is your current sense the same as that in the beginning years of your teaching career? What are the main reasons? What strategies do you intend to take for the improvement of this situation?
4. Do you think your current educational background much relates to your sense of achievement? Can you make more comments on it?
5. How do you view EFL tertiary teacher as researcher? What strategies do you take to achieve this goal?
6. In order to promote professional development of EFL teachers in technological universities of China, what imperative tasks need be completed from internal and external perspectives?

### DECLARATION OF CONFLICTING INTERESTS

The authors declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.