



Received: 31 May 2018
Accepted: 06 March 2019
First Published: 11 April 2019

*Corresponding author: Mehrdad Sheybani, English Department, Islamic university of Torbat-e-heydarieh, Iran
E-mail: mehrdadsheybani1217@ch-mail.ir

Reviewing editor:
Peter Walla, University of Newcastle,
Australia

Additional information is available at
the end of the article

COGNITIVE SCIENCE & NEUROSCIENCE | RESEARCH ARTICLE

The relationship between EFL teachers' professional identity and their critical thinking: A structural equation modeling approach

Mehrdad Sheybani^{1*} and Fatemeh Miri²

Abstract: The main purpose of this study is to investigate the relationship between Iranian English foreign language teachers' professional identity and their critical thinking. The participants comprised 259 EFL teachers teaching at different language institutes in several cities of Iran. Their selection was based on convenience sampling and the participation was entirely voluntary. In this study, two instruments were used: professional identity questionnaire and critical thinking scale. Pearson's correlation coefficient and structural equation modeling (SEM) were run to analyze the relationships among the components. The results revealed that all three sub-constructs of professional identity are predicted by critical thinking positively and significantly: Subject Matter Field, Didactical Field, and Pedagogical Field. Also, the results of Pearson correlation among components of professional identity and critical thinking indicated there is a high positive significant relationship between total professional identity and total critical thinking. Moreover, the highest correlation is seen between analysis and total professional identity, and the lowest correlation is seen between deductive reasoning and total professional identity. Finally, these findings were discussed with reference to the context of Iran.

ABOUT THE AUTHORS

Mehrdad Sheybani is a PhD student in TEFL, at Islamic Azad University of Torbat-e-heydarieh, Iran. He is an EFL lecturer and teacher. His research interests focus on language teaching/learning assessment, effective/reflective teaching, and teachers' professional development.

Fatemeh Miri is a MA holder in TEFL, at Imam Reza International University, Mashhad, Iran. She is an EFL teacher.

PUBLIC INTEREST STATEMENT

Professional identity refers to one's beliefs, attitudes, motives, and experiences through which individuals define themselves, in their current or anticipated professional life. Critical thinking also refers to the reasonable and reflective thinking that is focused upon deciding what to believe and do. The purpose of this study is to investigate the relationship between Iranian English foreign language teachers' professional identity and their critical thinking. Examining the relationship between English language teachers' professional identity and their critical thinking can offer suggestions for EFL teachers and decision makers in this field in order to develop their critical thinking skills as well as the quality of professional identity for teachers to improve the quality of both teaching/learning environments in Iran. Also, it provides information for schools, institutes, and universities to evaluate their available main critical thinking skills programs. The results indicated there is a high positive significant relationship between total professional identity and total critical thinking.

Subjects: School Psychology; Theory of Education; Educational Psychology

Keywords: professional identity; critical thinking; EFL teacher; Iran

1. Introduction

In recent years of investigation on teachers and teacher growth, the notion of professional identity has been taken into more consideration, and investigation on teachers' ideas and perspectives, teachers' narratives, and researches on biographies has been developed (Rodgers & Scott, 2008, p. 732). Identity researches give ideas regarding the components that affect a person's disposition towards a special profession (Tsakissiris, 2015). Sedikides and Brewer (2001) suggest that persons attempt to make their identity by their particular characteristic (individual), binary relations (relational) and group associations (collective). A person's feeling of "occupational or professional identity" is a powerful component of their sense of individual identity (Skorikov & Vondracek, 2011; Slay & Smith, 2011). Professional identity lets a career be considered as a conclusive and valuable contributor to the prosperity and growth of a nation (Low, Davey, & Davey, 2012). The composition of professional identity is considered as "a process of interplay between multiple contexts and the individual" (Bressler & Rotter, 2017, p.239). The political, social, and cultural circumstance of a person and the relation and communication with other persons is seen to be critical external components in the composition of identity (ibid).

Different studies have shown that the identity of teachers is connected with various components such as adjustment, efficacy, confidence, commitment, motivation, satisfaction in their teaching profession (Danielewicz, 2001). There is a need for more studies on the effect of teachers' identity on their professional development, by increasing worries about the feeling of EFL teachers about themselves and their professional identity (Gee, 2000). Since the speed of change and the expansion of knowledge require teachers to learn at many different times throughout their lives (Duta & Rafaila, 2014) and education is possibly one of the most significant social activities in the life of human beings, this issue is so significant for teachers and it is the nature of some of their worries about their professional life. Different studies have reported the important role of EFL teachers' identity in their professional development (Eick & Reed, 2002). In her study, Alaei (2015) showed that instructors' multiple intelligence types can affect their professional identity. Also, teachers' professional identity can affect their self-efficacy. Of particular importance to the current study was examining the degree to which teachers' professional identity could have a relationship with their critical thinking which is defined as "learning how to ask and answer questions of analysis, synthesis, and evaluation" (Paul, 1985, p. 37). Here, critical thinking includes two interrelated processes, including identifying and challenging assumptions, and imagining and examining others (Brookfield, 1991, p. 229). It seems obvious that teachers first need to be critical thinkers to be able to teach this ability to their students. While developing this skill is very essential for our teachers, most of the critical thinking studies have focused on learners (e.g., Dantas-Whitney, 2002; Faravani, 2006).

Critical thinking (CT) skills are not inherent. They are developed through time and experience. Such a fact is truly stressed by Hackworth (2009) in that she notes that for students to be able to use critical thinking skills in their professional careers, they must first be taught how to develop those skills. While designing course materials and improving educational levels, teachers' thinking and their attitudes are crucial factors.

Khany and Fakhra Shahrzad (2016) argued that improving teachers' critical thinking skills will significantly change their professional identity. Perez-Valverde and Ruiz-Cecilia (2013) also in their study revealed that professional identity can be developed by fostering critical thinking skills. Thus, this study aims to test this evidence in the Iranian context.

Examining the relationship between these two factors of English language teachers' professional identity and their critical thinking can offer suggestions for EFL teachers and decision makers in

this field in order to develop their critical thinking skills as well as the quality of professional identity for teachers to improve the quality of both teaching/learning environments in Iran. In addition, gathering data based on professional identity and critical thinking provides information for schools, institutes, and universities to evaluate their available main critical thinking skills programs as well as future needed packages. Besides, it is important to know about the relationship between teachers' professional identity and their critical thinking to acquire whether critical thinking activities are worth attending and are available to teachers to attend in Iranian context especially English teachers in language institutes in Iran.

Therefore, this study aims to test this relationship. Furthermore, there are not many studies on these fields in Iran. Thus, teachers' mentality in the process of teaching is neglected to some extent. In addition, in no studies, the relationship between teacher professional identity and their critical skills have been explored. Hence, this research gap exists. Thus, the main purpose of this study is to examine the relationship between Iranian EFL teachers' professional identity and their critical thinking.

2. Review of the literature

Professional identity is one's identity and character as identified concerning a career or profession and to one's attachment to it (Bressler & Rotter, 2017). Tsakissiris (2015) mentioned that "professional identity is created through one's beliefs, attitudes, values, motives, and experiences through which individuals define themselves, in their current or anticipated professional life" (p. ii). professional identity is related to "the accrual of symbolic resources including status and esteem, mastery, sense of belonging and attachment" (ibid). Likewise, more definitions of professional identity depends on the mechanism of socialization (Ibarra, 1999; Schein, 1978). In this regard, individuals form a self-image which lets the senses of individual adequacy and content and autonomy in the perception and performance of the anticipated role (White & Ewan, 1997).

Professional identity establishes a psychological connection between a person and a specific career. According to Tsakissiris (2015), professional identity encompasses two interrelated parts: the interpersonal and the intrapersonal. Investigations on creating a professional identity come in three major categories (Pratt, Rockmann, & Kaufmann, 2006, p. 236): (a) career transition, (b) organizational socialization, and (c) intentional identity building. Teachers compose their own professional identity on the basis of their own background and experiences and feelings in response to the social, cultural and political environment and the interplay with other individuals (Bressler & Rotter, 2017).

Due to the importance of teachers' professional identity in their effectiveness and efficiency, so many researchers and teacher educators have had paid great attention to this issue. In their study, Bressler and Rotter (2017) examined the professional identities of immigrant teachers in Germany and what pertinence they assign to their migration experience in building their professional identity. The first group accepts pertinence of their migration experience for their teaching, and the second group definitely refuse it. The third group can be regarded "as between these two extremes, leaning more toward the Pedagogical Professional type".

Professional identity is also examined in the framework of pre-service teacher education. It is considered that the professional development influences pre-service teachers (e.g., Beauchamp & Thomas, 2009; Beijaard, Verloop, & Vermunt, 2000; Britzman, 1993; Freese, 2006; Olsen, 2008; Sachs, 2005). Sugrue (1997) reveals experimental proofs for the effect of important factors including the teacher's own school experience, nuclear and extended family members, teaching traditions, the policy context, and cultural archetypes. Chapman and Pyvis (2006) disclosed that the accomplishment of an academy curriculum in any discipline has completely an influence on a person's professional identity. Sadovnikovaa, Sergeevaa, Suraevab, and Kuzmina (2016) in their study explained the mechanism of professional identity crisis that teachers experience. They concluded that the condition of professional identity crisis starts "an experiencing process"

in an individual's awareness. They also argued that "generalization of the teachers' feedback made it possible to state that the time prior to the professional crisis was described by the subjects as happy, bright, interesting and meaningful. Professional assignments were perceived by the teachers with enthusiasm and inspiration" (p.6910). Goodson and Cole (1994) in their study revealed that the institutional situation is widely effective in promoting the recognition of teachers' individual and professional capabilities. Connelly and Clandinin (1999) showed that institutional matters have critical effects on professional identity, especially, in the event of a program and educational alteration. They also revealed that teachers reacted variously to those institutional matters of professional identity which were struggled with the spatial and material borders of the professional view (Beijaard, Meijer, & Verloop, 2004, p. 120). Coldron and Smith (1999) showed that the teachers' professional identity indicated the context that the teacher was a component of and that professional identity was revealed in classroom performance and was exclusive. Dillabough (1999) mentioned that the "teaching self" is also an 'embedded self' which makes professional identity a complicated and versatile matter. Samuel and Stephens (2000) found that there is a struggle between achievement and desire about what the teacher can attain. This is showed in the different challenging effects on teachers' functions and identities in a developing world situation. However, the present study is aimed at finding the link between teachers' professional identity and their critical thinking. Hence, another distinctive variable related to teaching behavior, found to be of importance, is teaching critical thinking.

Critical thinking or CT was defined to be "the educational cognate of rationality" (Siegel, 1988, p. 32) and the "reasonable and reflective thinking that is focused upon deciding what to believe and do" (Norris & Ennis, 1989, p. 3). In addition, Paul (1995) defined CT as a unique and purposeful thinking in which the thinker consistently and commonly imposes norms and intellectual principles upon the thinking, controlling the construction of thinking, directing the construction of the thinking based on norms, and evaluating the influence of the thinking according to the aims, norms, and the standards [of thinking].

Abednia (2012) in his study reported on contributions of a critical EFL teacher education course to Iranian teachers' professional identity reconstruction by conducting interviews with a number of teachers. Three main changes were observed in their professional identities: "from conformity to and romanticization of dominant ideologies to critical autonomy, from no orientation or an instrumentalist orientation to a critical/transformational orientation of teaching, and from a linguistic and technical view to an educational view of second language education" (p. 706). In another study, Khany and Fakhar Shahreza (2016) examined the network of associations among teachers' professional development, professional identity, and their critical thinking skills. The results of structural equation modeling indicated that there was a close relationship among teachers' critical thinking skills, professional identity and subsequently professional development with acceptable goodness of fit indices. In addition, their results showed that there were significant interrelationships among some components of the main variables. Also, Ghanizadeh (2016) in her study explored the relationship among higher-order thinking skills (reflective thinking, critical thinking) and self-monitoring that contributes to academic achievement among university students. Her findings showed that critical thinking and all the components of reflective thinking predicted achievement positively and significantly with habitual action having the lowest impact and reflection exhibiting the highest influence. Moreover, self-monitoring exerted a positive influence on achievement indirectly via understanding and reflection. It was also found that among the four subscales of reflective thinking, reflection, and critical reflection predicted critical thinking positively and significantly. Self-monitoring had a positive and significant impact on critical thinking. It also influenced understanding as well as reflection significantly and positively. Finally, Perez-Valverde and Ruiz-Cecilia (2013) in their study examined the contribution of critical thinking skills on teachers' professional identity and revealed that professional identity can be developed by fostering critical thinking skills.

As mentioned in the review of literature part, no studies have addressed the relationship between Iranian EFL teachers' professional identity and their critical thinking. The following research questions were posed and investigated in the current study:

RQ1: Is there any significant relationship between EFL teachers' professional identity and their critical thinking?

RQ2: Is there any significant relationship between the components of EFL teachers' professional identity and their critical thinking?

3. Methodology

3.1. Participants

The participants comprised 259 EFL teachers teaching at different language institutes in several cities of Iran. Their selection was based on convenience sampling, and the participation was entirely voluntary. They were 159 females and 100 males whose age varied from 20 to 37 ($M = 28.42$, $SD = 3.21$) with 1 to 15 years of teaching experience ($M = 8.24$, $SD = 2.79$). The teachers had all majored in various branches of English including teaching ($N = 200$), literature ($N = 30$), and translation ($N = 29$) at B.A. ($N = 150$) or M.A. ($N = 84$) or PhD ($N = 25$).

3.2. Instruments

In this study, two instruments were used: professional identity questionnaire by Beijaard et al.'s (2000) and critical thinking test by Honey (2004).

3.2.1. Professional identity questionnaire

Beijaard et al.'s (2000) questionnaire were utilized to assess a teacher's professional identity. This scale includes three sub-scales: teachers in the subject matter field (e.g., Necessity of keeping pace with new developments), teachers in the didactical field (e.g., Importance of taking into account the students' level), and teachers in the pedagogical field (e.g., Good/safe classroom climate as a necessary condition for teaching). The teachers showed their professional identity by awarding a total of 100 points to the three sub-scales of their identity. The reliability of the Persian adapted version of the questionnaire has been found to be .71. Also, in order to examine the construct validity of the post-method questionnaire, two types of factor analysis, namely Exploratory Factor Analysis (EFA) and Confirmatory Factor Analysis (CFA) were used.

3.2.2. Critical thinking scale

Critical thinking questionnaire developed and validated by Honey (2004) includes 30 items into the 5-point Likert scale type ranging from "never to always". The Likert-type CTQ is a reliable (0.86 on Cronbach's Alpha), valid and practical (it will accurately and efficiently assess the critical thinking ability of the teachers) measure of critical thinking ability which allows researchers to investigate micro-skills of note-taking, summarizing, questioning, paraphrasing, researching, inferencing, discussing, classifying, outlining, comparing and contrasting, distinguishing, synthesizing, inductive and deductive reasoning more effectively. So, it shows a high content and construct validity. The participants were divided into two groups of high and low critical thinkers based on their performance on a critical thinking test. According to Watson and Glaser (1980), the test-retest reliability of this test has been 0.81 ($r = 0.81$). It was completed in 60 minutes and the scoring was estimated out of 80. Taking the mean score ($M = 65.23$) into consideration, the students were divided into two groups of high and low critical thinkers. Those who scored 65 and above formed high critical thinkers' group (23 participants) and the rest (19 participants) were defined as low critical thinkers (Golpour, 2014).

3.3. Procedure

The main purpose of this study is to examine the relationship between Iranian EFL teachers' professional identity and their critical thinking. The data collection of this study took place in August and September 2017. This correlational study collected quantitative data through two

questionnaires: professional identity questionnaire and critical thinking skill scale. A group of 259 EFL teachers from different language institutes were chosen conveniently as participants. Teachers answered the questionnaires in the presence of the researcher. The questionnaire took about 30–40 minutes without any time limitation. After a brief explanation of the purpose of the research, the teachers received the questionnaires. Moreover, the process of distribution of questionnaires was done by hand. We explained the purpose of completing the questionnaire and asked them not to write a name on them. They were required to provide demographic information such as gender and years of experience only. After gathering the data, they were calculated in SPSS software and were analyzed by structural equation modeling approach of Amos software.

4. Results

Table 1 summarizes the information obtained from Cronbach alpha analyses. As can be seen, the utilized questionnaires gained acceptable indices of Cronbach alpha as a whole as well as in their subscales. The Cronbach alpha for Total Professional Identity with 14 items is (.83), and total critical thinking with 30 items (.75). These numbers suggest that the items have relatively acceptable or good internal consistency.

Descriptive statistics of sub-constructs of professional identity and critical thinking questionnaires are presented in Table 2.

As Table 2 shows, among three sub-constructs of professional identity, Didactical Field (3.74) has the highest mean score and Pedagogical Field (3.20) has the lowest mean score per item. Moreover, among five sub-constructs of critical thinking, Evaluation (3.54) has the highest mean score and Analysis (2.96) has the lowest mean score per item.

Table 1. Results of Cronbach alpha

Scale	Subscales	Number of items	Cronbach alpha
Professional Identity	Subject Matter Field	4	.82
	Didactical Field	6	.78
	Pedagogical Field	4	.73
	Total	14	.83
Critical Thinking	Analysis	6	.72
	Inference	6	.70
	Evaluation	6	.81
	Inductive Reasoning	6	.80
	Deductive Reasoning	6	.74
	Total	30	.75

Table 2. Descriptive Statistics of professional identity and critical thinking questionnaires

	N	Min	Max	Mean	SD
Subject Matter Field	259	5.00	20.00	13.45	3.11
Didactical Field	259	8.00	30.00	18.71	2.79
Pedagogical Field	259	5.00	20.00	12.83	4.01
Analysis	259	8.00	29.00	17.87	3.44
Inference	259	6.00	30.00	18.95	2.98
Evaluation	259	11.00	30.00	21.28	4.14
Inductive Reasoning	259	12.00	30.00	20.87	3.47
Deductive Reasoning	259	9.00	28.00	19.55	2.98

To examine the research questions, the proposed model was tested using the Amos 24.00 statistical package. To check the strengths of the relationships among the components, the standardized estimates were examined. A number of fit indices were examined to evaluate the model fit: the chi-square magnitude which should not be significant, Chi-square/df ratio which should be lower than 2 or 3, the good fit index (GFI), and the comparative fit index (CFI) with the cut value greater than .90, and the Root Mean Square Error of Approximation (RMSEA) of about .06 or .07 (Schreiber, Nora, Stage, Barlow, & King, 2006). The results indicated that the chi-square (170.13), the df (159), the chi-square/df ratio (1.07), RMSEA (.041), GFI (.95), and CFI (.96), all the fit indices lie within the acceptable fit thresholds. Hence, it can be concluded that the proposed model had an acceptable fit with the empirical data.

Figure 1 represents the schematic relationships between teachers' professional identity and their critical thinking. The results demonstrated that all the three sub-constructs of professional identity are predicted by critical thinking positively and significantly: Subject Matter ($\beta = .49, p = .000$), Didactical ($\beta = .34, p = .000$), and Pedagogical ($\beta = .28, p = .000$).

Figure 1. The schematic relationships between teachers' professional identity and their critical thinking.

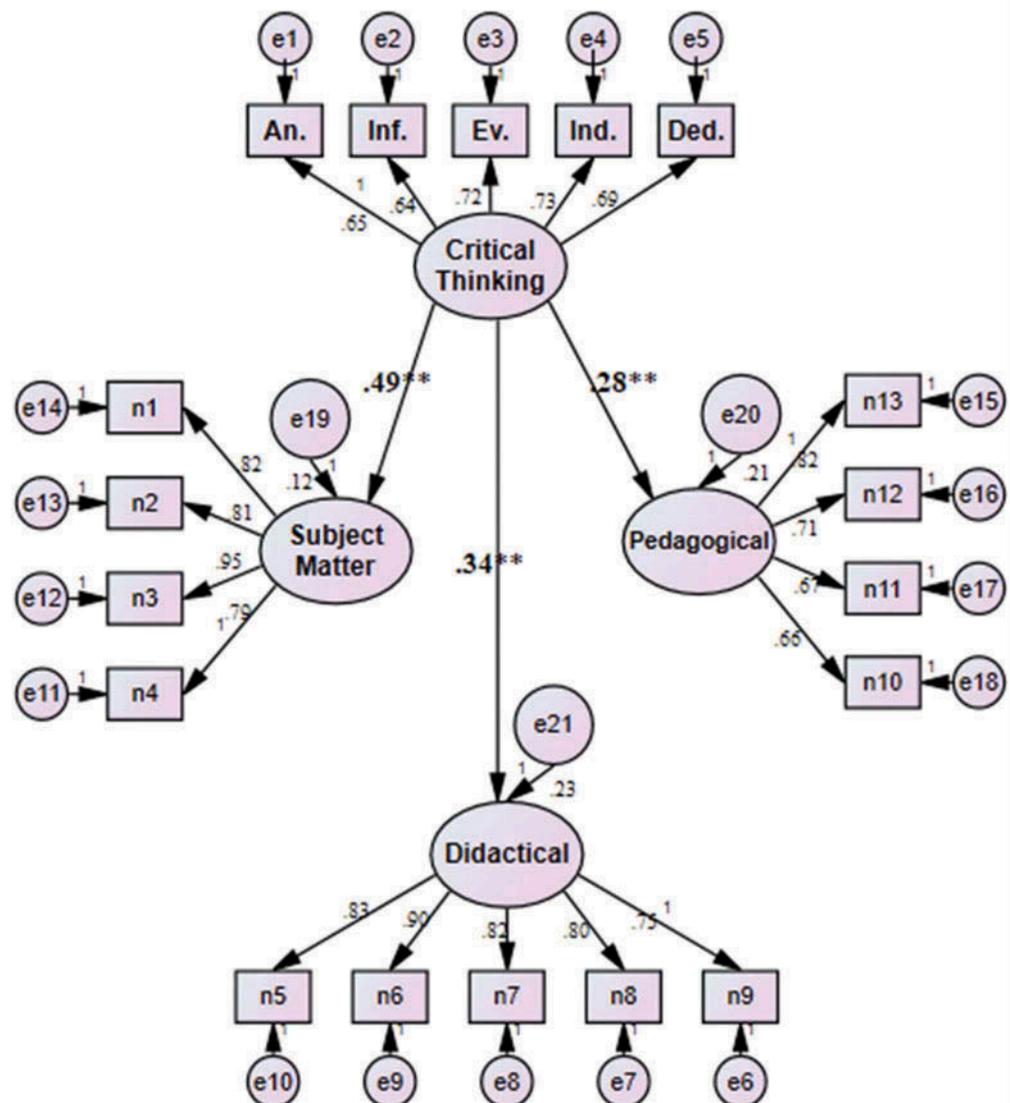


Table 3. Results of Pearson correlation among components of professional identity and critical thinking

	Analysis	Inference	Evaluation	Inductive Reasoning	Deductive Reasoning	Total Critical Thinking
Total Professional Identity	.71**	.34**	.63**	.33**	.21*	.64**

*p-value is significant at the level of .05

**p-value is significant at the level of .01

Moreover, the Pearson correlation was conducted to find the possible relationships among components of professional identity and critical thinking questionnaires. Table 3 shows the results of Pearson correlation among the components of professional identity and critical thinking. As the results indicated there is a high positive significant relationship between total professional identity and total critical thinking ($r = .64, p = .000$). Moreover, the highest correlation is seen between Analysis and total professional identity ($r = .71, p = .000$) and the lowest correlation is seen between Deductive Reasoning and total professional identity ($r = .21, p = .023$)

5. Discussion and conclusion

As stated before, the present study sought to examine the relation between Iranian English teachers' professional identity and their critical thinking. With this aim, two research questions were raised: "Is there a significant relationship between Iranian English teachers' professional identity and their critical thinking? Is there any significant relationship between the components of EFL teachers' professional identity and their critical thinking?" To get a clear picture of the yielded results, the research question was addressed by examining the proposed model with SEM and using Pearson correlation coefficient. The results revealed that all the three sub-constructs of professional identity are predicted by critical thinking positively and significantly: Subject Matter Field, Didactical Field, and Pedagogical Field. Also, the results of Pearson correlation among components of professional identity and critical thinking indicated that there is a highly positive significant relationship between total professional identity and total critical thinking. Moreover, the highest correlation is seen between Analysis and total professional identity and the lowest correlation is seen between Deductive Reasoning and total professional identity.

This finding highlights the important role of critical thinking in forming teachers' professional identity in a teaching context and is in line with the findings of some studies such as Abednia (2012). He in his study reported the contributions of a critical EFL (English as a Foreign Language) teacher education course to Iranian teachers' professional identity reconstruction. Based on his finding, these courses created three main changes in the teachers' professional identities: from conformity to and romanticization of dominant ideologies to critical autonomy, from no orientation or an instrumentalist orientation to a critical/transformational orientation of teaching, and from a linguistic and technical view to an educational view of second language education. In another study, Voinea and Păoăuan (2013) revealed that a teacher in the postmodern world is a critical thinker and has an inventive conduct. They know that the didactical development is a vital asset for an effective learner. Undoubtedly, the didactical advancement is associated with critical thinking and the ability to reflect. The learners should consider their instructor as a model of critical thinker "who looks and chooses important data, asks and makes new inquiries, and holds up not a solitary answer; an educator who has academic esteems and advances these qualities in his conduct; an educator who has faith in his understudies' energy to change" (p.363). Also, the findings of this study confirm the findings of Perez-Valverde and Ruiz-Cecilia (2013) who demonstrated that professional identity can be developed by fostering critical thinking skills. Canh (2013) in his study argued that "one of the meanings of teaching on which their professional identity construction is centered is the construct of 'critical thinking,' which was mentioned frequently

when the participants talked about their teaching” (p. 10). The teachers consider the aim of ELT as promoting critical thinking skills of learners and increasing new instructive esteems, not simply building up learners’ aptitudes in utilizing English for communication. Such a professional identity positions these instructors as teachers whose duty is to expand learners’ perspectives and to build up their critical thinking, not similarly as classroom dialect educators. Therefore, these studies show the important role of critical thinking for the construction of professional identity in language teaching and education. The findings of this examination can be useful to the EFL teachers in that they can regard the impact of critical thinking on the learning procedure and educate the related critical thinking methodologies to their students. The majority of the instructors do not know about the diverse sorts of critical thinking systems and cannot show them to their learners. It is for the instructive framework, particularly in Iran, to arrange workshops and courses such as in-service training courses for educators with a specific end goal to get the fundamental education. The findings of this research can likewise be helpful for the syllabus originators and course-book authors. They can consider executing critical thinking exercises during the time spent outlining and building up the materials (Golpour, 2014).

The significant limitation of this study is that teachers’ professional identity and critical thinking were evaluated by the questionnaire. Further studies can take a mix method approach and evaluate teachers’ professional identity and critical thinking by both questionnaires and interviews. Also, in this study, the researcher examined the relationship between EFL teachers’ professional identity and their critical thinking among language institute teachers. Further research can examine the role of these two variables in public schools and compare them with the results of the present study. Also, other studies can be implemented to explore the relationship between EFL teachers’ professional identity with other variables such as students’ achievements.

Funding

The authors received no direct funding for this research.

Author details

Mehrdad Sheybani¹

E-mail: mehrdadsheybani1217@chmail.ir

ORCID ID: <http://orcid.org/0000-0001-8074-5114>

Fatemeh Miri²

E-mail: fatemehmiri68@gmail.com

¹ English Department, Torbat-e-Heydarieh Branch, Islamic Azad University, Torbat-e-Heydarieh, Iran.

² English department, Imam Reza International University, Mashhad, Iran.

Citation information

Cite this article as: The relationship between EFL teachers’ professional identity and their critical thinking: A structural equation modeling approach, Mehrdad Sheybani & Fatemeh Miri, *Cogent Psychology* (2019), 6: 1592796.

References

- Abednia, A. (2012). Teachers’ professional identity: Contributions of a critical EFL teacher education course in Iran. *Teaching and Teacher Education*, 28(5), 706–717. doi:10.1016/j.tate.2012.02.005
- Alaee, M. (2015). Investigating the relationship between multiple intelligences and professional identity of Iranian EFL teachers. *Journal of Pan-Pacific Association of Applied Linguistics*, 19(2), 1–21.
- Beauchamp, C., & Thomas, L. (2009). Understanding teacher identity: An overview of issues in the literature and implications for teacher education. *Cambridge Journal of Education*, 39, 175–189. doi:10.1080/03057640902902252
- Beijaard, D., Meijer, P. C., & Verloop, N. (2004). Reconsidering research on teachers’ professional identity. *Teaching and Teacher Education*, 20, 107–128. doi:10.1016/j.tate.2003.07.001
- Beijaard, D., Verloop, N., & Vermunt, J. D. (2000). Teachers’ perceptions of professional identity: An exploratory study from a personal knowledge perspective. *Teaching and Teacher Education*, 16, 749–764. doi:10.1016/S0742-051X(00)00023-8
- Bressler, C., & Rotter, C. (2017). The relevance of a Migration background to the professional identity of teachers. *International Journal of Higher Education*, 6(1), 239–250. doi:10.5430/ijhe.v6n1p239
- Britzman, D. (1993). The terrible problem of knowing thyself: Toward a poststructuralist account of teacher identity. *Journal of Curriculum Theorizing*, 9, 23–46.
- Brookfield, S. D. (1991). *Developing Critical Thinkers: Challenging adults to explore alternative ways of thinking and acting*. US: Open University Press.
- Canh, L. V. (2013). Native-English-speaking teachers’ construction of professional identity in an EFL context: A case of Vietnam. *The Journal of Asia TEFL*, 10(1), 1–23.
- Chapman, A., & Pyvis, D. (2006). Quality, identity and practice in offshore university programmes: Issues in the internationalization of Australian higher education. *Teaching in Higher Education*, 11(2), 233–245. doi:10.1080/13562510500527818
- Coldron, J., & Smith, R. (1999). Active location in teachers’ construction of their professional identities. *Journal of Curriculum Studies*, 31(6), 711–726. doi:10.1080/002202799182954
- Connelly, F. M., & Clandinin, D. J. (1999). *Shaping a professional identity: Stories of education practice*. London: Althouse.
- Danielewicz, J. (2001). *Teaching selves: Identity, pedagogy, and teacher education*. Albany, NY: State University of New York Press.
- Dantas-Whitney, M. (2002). Critical reflection in the second language classroom through audiotaped journals. *System*, 30, 543–555. doi:10.1016/S0346-251X(02)00046-5

- Dillabough, J. A. (1999). Gender politics and conceptions of the modern teacher: Women, identity and professionalism. *British Journal of Sociology of Education*, 20(3), 373–394. doi:10.1080/01425699995326
- Duta, N., & Rafaila, E. (2014). Importance of the lifelong learning for professional development of university teachers - Needs and practical implications. *Procedia Social and Behavioral Sciences*, 127, 801–806. doi:10.1016/j.sbspro.2014.03.358
- Eick, C. J., & Reed, C. J. (2002). What makes an inquiry oriented science teacher? The influence of learning histories on student teacher role identity and practice. *Science Teacher and Education*, 86, 401–416.
- Faravani. (2006). *Portfolio and critical thinking* (- Unpublished M.A. Thesis). Ferdowsi University, Iran.
- Freese, A. (2006). Reframing one's teaching: Discovering our teacher selves through reflection and inquiry. *Teacher and Teacher Education*, 22, 110–119. doi:10.1016/j.tate.2005.07.003
- Gee, J. P. (2000). Chapter 3: Identity as analytical lens for research in education. *Review of Research in Education*, 25(1), 99–125.
- Ghanizadeh, A. (2016). The interplay between reflective thinking, critical thinking, self-monitoring, and academic achievement in higher education. *Higher Education*, 74(1), 1–14.
- Golpour, F. (2014). Critical thinking and EFL learners' performance on different writing modes. *Journal of Pan-Pacific Association of Applied Linguistics*, 18(1), 103–119.
- Goodson, I. F., & Cole, A. L. (1994). Exploring the teacher's professional knowledge: Constructing identity and community. *Teacher Education Quarterly*, 21(1), 83–105.
- Hackworth, R. M. (2009). *Radiation science educators' perception of obstacles in the use of critical thinking* (Unpublished Doctoral Dissertation). The Ohio State University, Ohio.
- Honey, P. (2004). Critical thinking questionnaire. Retrieved from <http://www.PeterHoney.com>
- Ibarra, H. (1999). Provisional selves: Experimenting with image and identity in professional adaptation. *Administrative Science Quarterly*, 44(4), 764–791. doi:10.2307/2667055
- Khany, R., & Fakhar Shahreza, M. (2016). The equation of critical thinking skills, professional identity and professional development in Iranian EFL teachers' context. In: The Fourth International Conference of ELT Committee in Iran, Islamic University of Kerman, Iran. Retrieved from https://www.civilica.com/Paper-TELLSI14-TELLSI14_025.html
- Low, M., Davey, H., & Davey, J. (2012). Tracking the professional identity changes of an accountancy institute: The New Zealand experience. *Journal of Accounting & Organizational Change*, 8(1), 4–40. doi:10.1108/18325911211205720
- Norris, S. P., & Ennis, R. H. (1989). *Evaluating critical thinking*. Pacific Grove, CA: Midwest Publications.
- Olsen, B. (2008). *Teaching what they learn, learning what they live*. Boulder, CO: Paradigm Publishers.
- Paul, R. W. (1985). Bloom's taxonomy and critical thinking instruction. *Educational Leadership*, 5, 36–39.
- Paul, R. W. (1995). *Critical thinking: How to prepare students for a rapidly changing world*. Santa Rosa, CA: Foundation for Critical Thinking.
- Perez-Valverde, C., & Ruiz-Cecilia, R. (2013). The development of FL teachers' professional identity through the production of narratives. *Porta Linguarum*, 22, 61–72.
- Pratt, M. G., Rockmann, K. W., & Kaufmann, J. B. (2006). Constructing professional identity: The role of work and identity learning cycles in the customization of identity among medical residents. *Academy of Management Journal*, 49(2), 235–262. doi:10.5465/amj.2006.20786060
- Rodgers, C. R., & Scott, K. H. (2008). The development of the personal self and professional identity in learning to teach. In M. Cochran-Smith, S. Feiman-Nemser, D. J. McIntyre, & K. E. Demers (Eds.), *Handbook of research on teacher education. Enduring questions in changing contexts* (3rd ed., pp. 732–755). New York/London: Routledge.
- 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). Oxford: Routledge.
- Sadovnikova, N. O., Sergeeva, T. B., Suraevab, M. O., & Kuzmina, O. Y. (2016). Phenomenological analysis of professional identity crisis experience by teachers. *International Journal of Environmental & Science Education*, 11(14), 6898–6912.
- Samuel, M., & Stephens, D. (2000). Critical dialogues with self: Developing teacher identities and roles—A case study of South Africa. *International Journal of Educational Research*, 33(5), 475–491. doi:10.1016/S0883-0355(00)00030-6
- Schein, E. H. (1978). *Career dynamics: Matching individual and organizational needs*. Massachusetts, USA: Addison-Wesley Pub. Co.
- Schreiber, J. B., Nora, A., Stage, F. K., Barlow, E. A., & King, J. (2006). Reporting structural equation modeling and confirmatory factor analysis results: A review. *The Journal of Educational Research*, 99(6), 323–337. doi:10.3200/JOER.99.6.323-338
- Sedikides, C., & Brewer, M. B. (2001). *Individual self, relational self, collective self*. Philadelphia, USA: Psychology Press.
- Siegel, H. (1988). *Educating reason: Rationality, critical thinking and education*. US: Routledge & Metheun.
- Skorikov, V. B., & Vondracek, F. W. (2011). *Occupational identity Handbook of identity theory and research* (pp. 693–714). New York, USA: Springer.
- Slay, H. S., & Smith, D. A. (2011). Professional identity construction: Using narrative to understand the negotiation of professional and stigmatized cultural identities. *Human Relations*, 64(1), 85–107. doi:10.1177/0018726710384290
- Sugrue, C. (1997). Student teachers' lay theories and teaching identities: Their implications for professional development. *European Journal of Teacher Education*, 20, 213–225. doi:10.1080/0261976970200302
- Tsakissiris, J. (2015). *The role of professional identity and self-interest in career choices in the emerging ICT workforce* (A Submitted thesis in fulfilment of the requirements for the degree of Master of Business (Research)). Queensland University of Technology.
- Voinea, M., & Păoăuan, T. (2013). Teachers' professional identity in the 21st century Romania. *Procedia- Social and Behavioral Sciences*, 128, 361–365. doi:10.1016/j.sbspro.2014.03.172
- Watson, G., & Glaser, E. (1980). *Watson-Glaser critical thinking appraisal*. England: The Psychological Corporation.
- White, R., & Ewan, C. E. (1997). *Clinical teaching in nursing*. Cheltenham, UK: Stanley Thornes.



© 2019 The Author(s). This open access article is distributed under a Creative Commons Attribution (CC-BY) 4.0 license.

You are free to:

Share — copy and redistribute the material in any medium or format.

Adapt — remix, transform, and build upon the material for any purpose, even commercially.

The licensor cannot revoke these freedoms as long as you follow the license terms.

Under the following terms:

Attribution — You must give appropriate credit, provide a link to the license, and indicate if changes were made.

You may do so in any reasonable manner, but not in any way that suggests the licensor endorses you or your use.

No additional restrictions

You may not apply legal terms or technological measures that legally restrict others from doing anything the license permits.



***Cogent Psychology* (ISSN: 2331-1908) is published by Cogent OA, part of Taylor & Francis Group.**

Publishing with Cogent OA ensures:

- Immediate, universal access to your article on publication
- High visibility and discoverability via the Cogent OA website as well as Taylor & Francis Online
- Download and citation statistics for your article
- Rapid online publication
- Input from, and dialog with, expert editors and editorial boards
- Retention of full copyright of your article
- Guaranteed legacy preservation of your article
- Discounts and waivers for authors in developing regions

Submit your manuscript to a Cogent OA journal at www.CogentOA.com

