

Pre-service English teachers' epistemological beliefs and their conceptions of teaching

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Abstract

The study reported in this paper seeks to examine the relationship between pre-service EFL teachers' epistemological beliefs and their conceptions of teaching and learning. A questionnaire survey was conducted. To this end, two scales (i.e. the Teaching and Learning Conceptions Questionnaire and the Epistemological Beliefs Scale) developed by Chan and Elliott (2004) were administered to 92 Iranian pre-service EFL teachers to examine their epistemological beliefs as well as conceptions of teaching and learning. The findings of this study revealed that pre-service English teachers in Iran tended to endorse, from among the four categories of epistemological beliefs, the innate/fixed ability and certainty knowledge. Also, most of the participants tended to endorse traditional conceptions about language teaching and learning which was considered to be reminiscent of the modern era of English language teaching. Furthermore, the findings demonstrated significant positive relationships between traditional teaching/learning conceptions and some categories of epistemological beliefs such as 'innate/fixed ability' and 'certainty knowledge'. Moreover, the results indicated significant correlations between constructivist conceptions and pre-service teachers' 'learning effort/process' beliefs. Finally, certain implications for the English education of Iran were discussed in the context of postmodernism in English language teaching.

Keywords: Epistemological beliefs; Teaching and learning conceptions; Pre-service EFL teachers

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1. Introduction

The conceptions of the essence of knowledge are generally regarded as epistemological beliefs (Hofer & Pintrich, 1997; Schommer-Aikins, 2004). Over the last two decades, the 'epistemological beliefs' framework has been extended to involve conceptions of the essence of knowledge and acquisition (Hofer & Pintrich, 1997; Schommer-Aikins, 2004; Schommer, 1994). More recently, studies on epistemological beliefs have been expanded to include the conceptions of pre-service and in-service teachers (Chan & Elliott, 2002; Richardson & Placier, 2001). An essential question that needs to be addressed is the degree to which teacher education programs can influence deep changes in cognition during training teachers and the degree to which these changes influence teachers' behaviors in their classrooms. In this connection, many people have argued that teachers' perceptions can influence their teaching strategies and performance in the classroom.

On the other hand, teachers' beliefs about teaching and learning have been examined extensively in the literature (e.g., Burns, 1996; Busch, 2010; Caner, Subasi, & Kara, 2010; Johnson, 1992, 1994; Kern, 1995; Ozmen, 2012; Peacock, 2001; Samimy & Lee, 1997; Smith, 1996). Generally, these studies aim to explore the relationships between teacher beliefs and learner beliefs (Peacock, 1999; Samimy & Lee, 1997) and the impacts of these beliefs on their classroom performance (Johnson, 1994; Smith, 1996). Studies on teacher beliefs have also discussed whether and to what extent teacher beliefs might affect teachers' actual practices in their classrooms. These studies generally point to the fact that teacher beliefs can have an impact on their classroom practices which, in turn, may influence their learners' learning (Johnson, 1992; Richards & Lockhart, 1996).

A number of studies exist indicating that, in one way or another, there is a meaningful nexus between epistemological beliefs and conceptions of teaching and learning (Chan & Elliott, 2004; King & Kitchener, 1989; Schommer-Aikins, 2004). Nonetheless, there is still controversy on the extent to which these two views are related to each other. In view of this, this paper presents a study on pre-service teachers' epistemological beliefs and the possible relationships of these beliefs with their teaching/learning conceptions.

2. Background and Purpose

2.1 Epistemological beliefs

Epistemological Beliefs are referred to as the beliefs about knowledge and knowing. Schommer (1990) believed that epistemological beliefs are multidimensional in that they comprise five dimensions (i.e. omniscient authority, certain knowledge, simple knowledge, quick learning and fixed/innate ability). In the year 1994, Schommer developed a questionnaire and redefined the components of epistemological beliefs in terms of 'naive' and 'sophisticated' beliefs. Sophisticated learners, Schommer elaborates, might think that a large body of knowledge is evolving, some knowledge is yet to be produced, and a small body of knowledge is stable and hence unchanging. Naive learners, on the other hand, might think that a large body of information is unchanging, some knowledge should be produced in the future, and a small body of knowledge is being evolved. In another study, Chan and Elliott (2002) utilized Schommer's (1990) inventory to examine the epistemological beliefs of a group of teacher education students in Hong Kong; their results revealed that a four-factor solution could best describe the participants' epistemological beliefs. These factors include 'innate (or fixed) ability', 'learning effort and processes', 'authority knowledge' and 'certainty knowledge'.

2.2 Beliefs about teaching and learning

It has been argued that conceptions of teaching and learning can be seen as a bipolar continuum, with the

traditional conceptions at one end of the continuum and the constructivist conceptions on the other (Clements & Battista, 1990; Clifford, 1992). Proponents of the traditional side contend that the classroom learning environment wherein the teacher plays the dominant role in transmitting knowledge is likely to pay off the most effective outcomes of learning. Conversely, constructivist conceptions of teaching and learning have their roots in Piaget's theory that pertains to the fact that people actively construct their viewpoints by interpreting their experiences (Kegan, 1982, 1994). Proponents of this tradition believe that knowledge is produced through the interactions that take place between learners and their peers or between learners and teachers (as mediators of learning). In another categorization, Kember (1997) construed the teaching/learning conceptions in terms of teacher-centered and learner-centered orientations.

To link the two categorizations, it seems to be a reasonable argument to say that traditional conceptions of teaching and learning are mostly associated with teacher-centered teaching approaches, given the fact that the acquisition of knowledge in traditional approaches is enacted through a one-way *transmission* of knowledge with little or no interaction taking place between learners and the teacher. Conversely, in constructivist approaches to teaching and learning put emphasis on learners' self-regulation, self-reflection, and self-motivation with the teacher being merely a facilitator of the learning process. Such perspectives have been argued to be in line with the student-centered approaches to teaching (Entwistle, Skinner, Entwistle, & Orr, 2000; Trigwell, Prosser, & Waterhouse, 1999).

2.3 Linking epistemological beliefs and perceptions about teaching and learning

As for the connection between epistemological beliefs and perceptions about teaching and learning, it has been argued that those who hold sophisticated epistemological beliefs are more likely to perceive several alternative solutions for solving problems (King & Kitchener, 1994). In addition, research has shown that learners' beliefs in fixed ability, simple knowledge and quick learning (components of epistemological beliefs about knowledge and knowing) had significant relationships with low scores of reflective judgment (as an indicator of the constructivist approach to learning) (Schommer-Aikins, 2004). In similar lines of argument, other studies have shown that learners who hold naive epistemological beliefs tend to act as passive receivers of knowledge. Those who hold sophisticated epistemological beliefs, on the other hand, are more likely to more expert interlocutors on a more inter-mental plane (King & Kitchener, 1989; Schommer-Aikins, 2004).

In sum, these studies show that there may be a solid association between learners' epistemological beliefs and their conceptions of learning and teaching. Accordingly, the present study makes use of Chan and Elliott's (2004) framework to see if there is any significant relationship between the four epistemological beliefs and the bipolar teaching/learning conceptions.

- What are Iranian pre-service EFL teachers' epistemological beliefs?
- What is the nature of Iranian pre-service EFL teachers' beliefs about teaching and learning?
- Is there any significant relationship between the Iranian pre-service EFL teachers' epistemological beliefs and their teaching conceptions?

3. Method

3.1 Participants

A total number of 92 Iranian pre-service EFL teachers at the University of Isfahan and Ferdowsi University of Mashhad, Iran, participated in this study. They ranged in age from 18 to 32 and were students of Teaching English as a Foreign Language (TEFL), English Language and Literature, English Translation, and Linguistics. The participants comprised male (N = 34) and female (N = 58) pre-service EFL teachers. The detailed information on the participants is displayed in Table 1.

Table 1*Distribution of participants*

Sex	Age	Degree	Informal Teaching Experience				
Male	34	Twenties	88				
Female	58	Thirties	4	English Teaching	29	Less than two years	64
				English Literature	31	2-4 years	21
				English Translation	18	5-7 years	5
				English Linguistics	14	8-10 years	2
Total	92						92

3.2 Instruments

Two instruments were administered to 92 pre-service English teachers in two ways: (1) face-to-face administration (print form), and (2) administration via an electronic fillable PDF document. These pre-service teachers were asked to fill out the scale and to return them during class. Data regarding pre-service teachers' conceptions of teaching and learning were collected through the administration of the Teaching and Learning Conceptions Questionnaire (TLCQ) designed by Chan and Elliot (2004). The scale was validated by administering it to a sizeable sample of teacher education students in Hong Kong. The scale includes thirty items which are scored on a Likert scale of five points (1 = Never; 2 = Rarely; 3 = Sometimes; 4 = Often; 5 = Always), measuring two different conceptions of teaching and learning, i.e. Traditional (18 items) and Constructivist (12 items). The total internal consistency of the scale using Cronbach's alpha was 0.84. In the present study, the reliability of the whole items was 0.75.

The other scale utilized in the present study was the Epistemological Beliefs Scale (Chan & Elliott, 2004). The scale encompasses thirty items that are rated on a five-point Likert scale, ranging from 'Strongly Disagree' (1) to 'Strongly Agree' (5). It was developed and validated by Chan and Elliott (2004b) and was reported to have satisfactory psychometric properties. The epistemological beliefs scale aims at measuring four components of epistemological beliefs, i.e. Innate/Fixed Ability, Learning Effort/Process, Authority/Expert Knowledge, and Certainty Knowledge. The internal consistency of the scale was equal to 0.89 in Chan and Elliott's study; however, in this study, Cronbach Alpha showed a reliability of 0.84 for this scale.

4. Results

4.1 Research question 1

First, the researchers tried to examine Iranian pre-service EFL teachers' epistemological beliefs. The findings of the descriptive statistics showed that pre-service English teachers in Iran tended to endorse, from among the four categories of epistemological beliefs, the innate/fixed ability and certainty knowledge. As it may be seen in Table 2, pre-service teachers held different epistemological beliefs from the most *innate/fixed ability* ($M = 4.22$, $SD = 0.67$) to the least *authority/expert knowledge* ($M = 2.13$, $SD = 0.58$).

Table 2*The means of factors obtained from descriptive statistics*

	N	M	SD	Alpha
Innate/Fixed Ability	92	4.22	0.67	.824
Certainty Knowledge	92	3.50	0.88	.621
Learning Effort/Process	92	2.65	0.94	.792
Authority/Expert Knowledge	92	2.13	0.58	.689
Valid N (listwise)	92			

4.2 Research question 2

The second research question pertained to the extent to which Iranian pre-service EFL teachers hold constructivist or traditional conceptions about teaching and learning. Table 3 presents the means for the two subscales of the questionnaire. As it can be seen in the table, most of the participants tended to endorse traditional conceptions about language teaching and learning ($M= 4.73$, $SD = 0.98$). However, the items pertaining to constructivist conceptions received rather low scores ($M= 3.86$, $SD = 1.03$).

Table 3

The means of factors obtained from descriptive statistics

	N	M	SD	Alpha
Traditional	92	4.73	0.98	.801
Constructivist	92	3.86	1.03	.674
Valid N (listwise)	92			

4.3 Research question 3

The third research question sought to investigate if there is any significant relationship between the pre-service EFL teachers' epistemological beliefs and their teaching conceptions. With that in mind, the researchers computed the Pearson product-moment correlation coefficient to assess the relationship between scores on the Teaching and Learning Conceptions scale and those on the Epistemological Beliefs scale. Most notably, as shown in Table 4, the results indicated that there is a significant positive correlation between traditional conceptions of teaching and learning and the participants' Innate/Fixed Ability beliefs ($r = 0.36$, $p < 0.01$) and Certainty Knowledge ($r = 0.22$, $p < 0.05$). On the other hand, there was a significant positive correlation between pre-service teachers' constructivist teaching conceptions and their Learning Effort/Process ($r = 0.29$, $p < 0.01$) as well as negative correlation between constructivist conceptions and two epistemological beliefs, i.e. Innate/Fixed Ability ($r = -0.18$, $p < 0.05$) and Certainty Knowledge ($r = -0.14$, $p < 0.05$) (see Table 4).

Table 4

Correlations between epistemological beliefs and teaching/learning conceptions

	Traditional	Constructivist
Innate/Fixed Ability	0.36**	-0.18*
Certainty Knowledge	0.22**	-0.14*
Learning Effort/Process	-0.10	0.29**
Authority/Expert Knowledge	0.08	0.07

** Significant at the alpha .01

* Significant at the alpha .05

5. Discussion and Conclusions

In the present study, the authors have attempted to examine pre-service teachers' epistemological beliefs and teaching/learning conceptions as well as the relationships that might exist between pre-service teachers' epistemological beliefs and their conceptions of teaching and learning in the foreign language teaching context of Iran. For one, the findings of the descriptive statistics showed that these teachers tended to hold beliefs about the innate and fixed nature of knowledge. Put another way, the pre-service teachers believed that knowledge and knowing are innate and that learners cannot produce knowledge of English rather than just receiving it. This may remind us of the modern era of English language teaching (ELT) where, considering the centralized

educational system in Iran, language teachers do not have enough autonomy to make decisions or carry out any kind of classroom action research or reflective teaching. As a matter of fact, for the most part, these teachers do not know the fundamental principles of reflective teaching which came into being since the inception of postmodernism. Sadly, there is still 'a mad scramble' (Brown, 2002, p. 171) in their search for the best method in Iranian schools and English language institutes.

Consequently, Iranian English teachers are preoccupied with preparing learners for the final exam which is held in a multiple-choice format and its focus is primarily on structures, vocabulary and reading comprehension, while ignoring other important skills such as speaking, listening, and writing. The course book used for all students is prescribed by the language center at the University of Isfahan, leaving language teachers no right to select the materials which they think are best suited to the needs of their learners. Overall, this study also revealed that teachers were likely to hold traditional conceptions about teaching and learning. Therefore, taken together, it may be argued that the participants felt that, for example, the major role of an English teacher is to "*transmit language knowledge to learners through continual practicing*". They embraced the traditional concepts of 'rote learning' and 'memorization' because they thought that learning occurs when teachers transmit the pre-established knowledge to their learners.

As for the relationship between pre-service EFL teachers' epistemological beliefs and their teaching conceptions, this study demonstrated significant positive correlations between traditional conceptions of teaching and learning and the participants' *innate/fixed ability* beliefs and *certainty knowledge*. This finding is clearly reminiscent of Paulo Freire's "banking concept of education" where the learners are construed as "empty accounts" to be filled by teachers (Freire, 1970). Granted the fact that they are regarded by authorities as receivers of knowledge, learners do not typically try to put into practice their unique potentialities and capabilities; nor do they find any opportunity to make use of their creativity in constructing their own knowledge. On the other hand, there was a significant relationship between pre-service teachers' constructivist teaching conceptions and their learning effort/process, indicating that constructivists believe in the self-construction and self-interpretation of knowledge, rather than merely the passive receipt of information (as is evident in traditional conceptions of teaching and learning). Besides, the *negative* correlations that were found between constructivist conceptions and two epistemological beliefs, i.e. innate/fixed ability and certainty knowledge added more plausibility to the idea that constructivism in teaching English as a foreign language would necessarily denounce the unchangeability of knowledge and that there is some certain degree of knowledge that should be transmitted or received. These relationships clearly point to the fact that there is a meaningful connection between beliefs about knowledge of English and beliefs about the way the English language should be taught and learnt.

Specifically, the English education in Iran (the country in which the authors live) has embraced modernist ideas extensively. Given the findings of the present study, we can draw certain implications for the centralized system of education in Iran. With regards to our major finding (i.e. pre-service English teachers' inclination towards traditional conceptions of teaching and learning), it is first recommended that learners' individual differences should be taken into consideration as L2 learners bring with them to English classes a diverse range of psychological, social, and cultural backgrounds that make them distinct from one another. Second, teachers and learners should become empowered and be given more autonomy and freedom in selecting their own teaching and/or learning approach as well as designing the resources and materials that best suits their particular conditions. Third, what is needed for English teachers would be to view themselves as "transformative intellectual" (Pennycook, 2001, 2004) and try to make local decisions based on a process-oriented and learner-centered view of English education. In doing so, it is required that we (as English teachers) follow the postmodern change of attitude from the notion of method to the concept of post-method (Kumaravadivelu, 1999, 2006). Fourth, the professionals in language teacher education are recommended to make attempts at raising their awareness of issues such as teacher beliefs and teacher cognition, and try to help the "modern" classroom consumers into "postmodern" facilitators of learning, strategic teachers, strategic researchers, or reflective practitioners who are, in Widdowson's (2003) words, able to theorize what they practice and practice what they theorize.

However, it should be noted that the findings of this study should be seen within certain limitations. For one thing, this study made use of self-report scales to elicit pre-service teachers' beliefs and conceptions. Other studies may utilize other methods as well, including interviews and classroom observations. Moreover, the findings of this paper would even seem more palpable if other researchers tried to carry out replications in different settings and among various populations for the purpose of obtaining a true understanding of pre-service teachers' epistemological beliefs as well as conceptions of teaching and learning the English language. Future research should also figure out ways through which constructivist notions and ideas can be addressed in teacher education in order to help ELT professionals employ effective teaching strategies that boost positive learning and teaching milieus. In this connection, it should be noted that changing teachers' perceptions would not be easy unless these beliefs are considerably challenged during training (Pajares, 1992). According to Richards (1998), "a primary source of teachers' classroom practices is belief systems –the information, attitudes, values, expectations, theories, and assumptions about teaching and learning that teachers build up over time and bring with them to the classroom" (p. 66).

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Appendix

Epistemological Beliefs (Chan & Elliott, 2004)

No.	Statement
1	There isn't much you can do to make yourself smarter as your ability is fixed at birth.
2	Our abilities to learn are fixed at birth.
3	One's innate ability limits what one can do.
4	Some people are born good learners; others are just stuck with limited abilities.
5	Some children are born incapable of learning well in certain subjects.
6	The ability to learn is innate/inborn.
7	Students who begin school with "average" ability remain 'average' throughout school.
8	The really smart students don't have to work hard to do well in school.
9	If people can't understand something right away, they should keep on trying.
10	Knowing how to learn is more important than the acquired facts.
11	One learns little if one does not work hard.
12	Understanding course materials and thinking process are more important than acquiring knowledge/facts.
13	Everyone needs to learn how to learn.
14	People will learn better if they focus more on the process of understanding rather than the facts to be acquired.
15	Learning something really well takes a long time or much effort.
16	How much you get from your learning depends mostly on your effort.
17	Getting ahead takes a lot of work.
18	If one tries hard enough, then one will understand the course material.
19	Wisdom is not knowing the answers, but knowing how to find the answers.
20	Sometimes I don't believe the facts in textbooks written by authorities.
21	Even advice from experts should often be questioned.
22	I often wonder how much experts really know.
23	I am very aware that teachers/lecturers know a lot more than I do and so I agree with what they say is important is important rather than rely on my own judgment.
24	I still believe in what the experts say even though it differs from what I know.
25	I have no doubts in whatever the experts say.
26	Scientists will ultimately get to the truth if they keep searching for it.
27	If scientists try hard enough, they can find the truth to almost anything.
28	Anyone can figure out difficult concepts if one works hard enough.
29	I believe there should exist a teaching method applicable to all learning situations.
30	Scientific knowledge is certain and does not change.

Teaching and Learning Conceptions Questionnaire (Chan & Elliott, 2004)

No.	Statement
1	It is important that a teacher understands the feelings of the students.
2	Good teachers always encourage students to think for answers themselves.
3	Learning means students have ample opportunities to explore, discuss and express their ideas.
4	In good classrooms there is a democratic and free atmosphere which stimulates students to think and interact
5	Every child is unique or special and deserves an education tailored to his or her particular needs.
6	Effective teaching encourages more discussion and hands on activities for students.
7	The focus of teaching is to help students construct knowledge from their learning experience instead of knowledge communication.
8	Instruction should be flexible enough to accommodate individual differences among students.
9	Different objectives and expectations in learning should be applied to different Students.
10	Students should be given many opportunities to express their ideas.
11	The ideas of students are important and should be carefully considered.
12	Good teachers always make their students feel important.
13	A teacher's major task is to give students knowledge/information, assign them drill and practice, and test their recall.
14	During the lesson, it is important to keep students confined to the textbooks and the desks.
15	Learning means remembering what the teacher has taught.
16	Good students keep quiet and follow teacher's instruction in class.
17	The traditional/lecture method for teaching is best because it covers more information/knowledge.
18	It is best if teachers exercise as much authority as possible in the classroom.
19	Good teaching occurs when there is mostly teacher talk in the classroom.
20	Learning mainly involves absorbing as much information as possible.
21	Students have to be called on all the time to keep them under control.
22	Teaching is to provide students with accurate and complete knowledge rather than encourage them to discover it.
23	A teacher's task is to correct learning misconceptions of students right away instead of verify them for themselves.
24	No learning can take place unless students are controlled.
25	Teachers should have control over what students do all the time.
26	Learning to teach simply means practicing the ideas from lecturers without questioning them.
27	I have really learned something when I can remember it later.
28	Teaching is simply telling, presenting or explaining the subject matter.
29	The major role of a teacher is to transmit knowledge to students.
30	Learning occurs primarily from drilling and practice.