The Impact of a Teacher Education Course on Iranian EFL Pre-service Teachers' Pedagogical Beliefs

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Abstract: This study investigated the impact of a teacher education course on pre-service teachers' pedagogical beliefs. A sample of 84 Iranian EFL pre-service teachers who had just been accepted to Farhangian University were selected through convenience sampling. Using a sequential mixed-methods design, their pedagogical beliefs were measured through a researcher-made questionnaire before and after a training course on the philosophy of education for English language teachers. Moreover, the changes reported by the participants were traced through thematic analysis of their reflective journals. Finally, in a focus group interview, they commented on the contributing factors to the success of the course in changing their pedagogical beliefs. The results of quantitative data demonstrated the impact of the training course on changing the participants' pedagogical beliefs. The analysis of qualitative data obtained from the reflective journals indicated that the changes that the participants professed were of two emerging themes of raising awareness of new assumptions and adopting new pedagogical beliefs. In addition, the analysis of the interview transcripts revealed that the participants attributed the course success to the implementation of appropriate teaching strategies, the course contents, and the teacher educator's performance. Based on the findings, it can be concluded that EFL pre-service teachers' pedagogical beliefs can be modified in training courses of teacher education programs if a safe and collaborative atmosphere is created for them to critically reflect on their prior pedagogical beliefs within innovative theoretical frameworks.

Keywords: EFL Pre-service Teachers, Pedagogical Beliefs, Philosophy of Education, Teacher Cognition.

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Introduction

Candidates for the teaching profession are accepted into teacher education programs to develop their teaching competencies in three areas of knowledge, skills, and attitudes (Khodamoradi & Maghsoudi, 2020). Among these three components, the professional attitude has received considerable attention in the literature of teacher education, paving the way for the emergence of an important agenda called *teacher cognition* or *teachers' pedagogical beliefs* in recent decades (Borg, 2003; Johnson, 2006; Li, 2020). In this area of research, teachers' attitudes, beliefs, perceptions, values, and personal theories in the past, present, and future are investigated to shed light on the process of becoming, being, and developing into a well-competent teacher (Borg, 2009).

Teaching is the only profession in which candidates enter its programs while already having ample opportunities to observe the profession for many years before the intended education begins. Such prior experiences play a crucial role in shaping pre-service teachers' beliefs because they serve as filters for interpreting new knowledge and experiences offered in teacher education programs (Fives & Buehl, 2012; Richardson, 2003). Although such prior beliefs may facilitate the process of teacher professionalism during the programs, it is believed that they hinder the process since they give pre-service teachers a false sense of expertise which, in turn, misleads them into relying on these beliefs rather than the pedagogical principles offered in teacher education programs (Gray, 2019).

Therefore, the preconceptions, attitudes, and beliefs pre-service teachers bring with them into their teacher preparation programs are nowadays among the hot topics in the area of teacher education (Borg, 2003). Several studies have indicated that these prior beliefs are almost resistant to change and the instructional courses have a negligible effect on pre-service teachers' cognition (Bates, 2005; Darling-Hammond, 2006; Korthagen et al., 2006). On the contrary, ample evidence can be found in the literature that indicates the impact of teacher education programs on changing pre-service teachers' pedagogical beliefs (Busch, 2010; Walker-Dalhouse et al., 2009). Since teacher cognition is sociocultural in nature (Johnson, 2006; Zheng, 2015), the role of macro and micro contexts should be considered in this regard (Li, 2020). It implies that since social settings have a significant impact on pre-service teachers' beliefs and belief change, it is important to explore them in a specific educational setting.

Considering the above-mentioned argument, this study aimed to investigate the impact of a course entitled, "Philosophy of Education for English Language Teachers' on EFL pre-service teachers' pedagogical beliefs at Farhangian University in Iran. Undoubtedly, studying the content of EFL pre-service teachers' pedagogical beliefs and the process of

cognition change can help policymakers, curriculum developers, and teacher educators have a better understanding of what teaching candidates bring into their teacher preparation program, and choose the best possible strategies to remove inappropriate beliefs, consolidate appropriate ones, and form new ones.

Review of the Literature

The origin of teacher cognition, which deals with teachers' mental lives (Borg, 2003), dates to the 1970s (Borg, 2015). Since then, research on this issue has become a mainstream field of inquiry (Zhao, 2019). Nowadays, the field has been characterized by an array of definitions, concepts, and terminologies that signify the complex nature of the phenomena under study. Borg (2003) defines teacher cognition as "the unobservable cognitive dimension of the teacher-what teachers know, believe and think" (p. 81). It has also been defined by Borg (2019), as "understanding, with reference to the personal, professional, sociocultural, and historical dimensions of teachers' lives, how becoming, being, and developing as a teacher is shaped by what teachers think and feel about all aspects of their work" (p. 4). It is used as an umbrella term that incorporates some other terms such as teachers' pedagogical beliefs, perceptions, and knowledge (Feryok, 2010). To get rid of the terminological and conceptual confusion, throughout this paper, the term *pedagogical beliefs* is used to address all concepts related to teachers' mental lives.

Teachers' pedagogical beliefs as a complex, dynamic, contextualized, and systematic phenomenon (Borg, 2015) are reconstructed by teachers' schooling experiences, professional coursework, classroom experiences, and contextual factors (Borg, 2015). Within the constructivist view of teacher education, teachers' pedagogical beliefs form through the interaction between teachers' schooling experiences and the experiences and content they are offered in professional coursework and teaching practices during pre-service and in-service teacher education programs (Kiliańska-Przybyło, 2010). The former, which is referred to as *apprenticeship of observation* (Lortie, 1975) or *schooling* (Borg, 2015), denotes the deeply-rooted beliefs and assumptions that pre-service teachers have already made through observing their school teachers before they enter teacher education programs. The latter incorporates all knowledge, skills, and attitudes that have been defined in the curriculum to be acquired by pre-service teachers during their training courses.

There is considerable evidence showing that the apprenticeship of observation is one of the major challenges encountered in initial teacher education (Conner & Vary, 2017; Darling-Hammond, 2006). On the one hand, these initial conceptualizations of teaching and learning

that pre-service teachers bring to teacher education are mostly inappropriate, unrealistic, or naïve (Zheng, 2009). This can be attributed to the fact that pre-service teachers were not equipped with any pedagogical criteria or analytical frameworks to know about the rationale behind their schoolteachers' actions. (Gray, 2019). On the other hand, in addition to being non-analytic and unexamined, these pre-conceived attitudes and beliefs are remarkably resistant to change (Korthagen, 2010; Martin & Russell, 2009). Therefore, dealing with these deeply held beliefs derived from the apprenticeship of observation, which acts as a powerful barrier to quality teacher education, has been among the top priorities for teacher educators.

To face the challenge of the apprenticeship of observation, teacher education programs always revise their curricula to incorporate some instructional courses to consolidate, modify, or change pre-service teachers' pedagogical beliefs as "the clearest measure of a teacher's professional growth" (Kagan, 1992, p. 85). To be effective, the instructional courses offered to strengthen pedagogical beliefs not only provide declarative knowledge but also incorporate experiential and reflective activities to have a stronger effect on the development of teachers' cognition (Busch, 2010). This implies that in addition to the quantity of the instructional courses, the quality of the courses highly matters. Since the ultimate goal of such courses is making fundamental changes in both pre-service teachers' cognition and their practices (Almarza, 1996), reflection, argumentation, and experience, which constitute knowledge construction rather than knowledge transmission (Özmen, 2012), should be employed as major instructional strategies.

The process of belief change like any other process consists of several stages. While investigating the process of belief change among pre-service language teachers, Yuan and Lee (2014) found that pre-service teachers' pedagogical beliefs went through six stages of confirmation, realization, disagreement, elaboration, integration, and modification. A similar developmental process for pre-service teachers' pedagogical beliefs has been suggested by Cabaroglu and Roberts (2000) including awareness, consolidation, elaboration, addition, re-ordering, re-labelling, linking up, disagreement, reversal, pseudo change, and no change. These conceptualizations of the process of belief change demonstrate that the process is not a matter of all-or-nothing and a degree of success can be obtained in instructional courses during teacher education programs.

The effectiveness of instructional courses in teacher education programs has been a matter of debate. A considerable number of studies have reported evidence of change in pre-service teachers' pedagogical beliefs due to teacher education courses. In 2019, Taddarth conducted a study to investigate the impact of a training course on corrective feedback on EFL

pre-service teachers' beliefs. The findings obtained from the data collected through a questionnaire and a focus group interview demonstrated the effect of the course on changing the participants' beliefs about different types of corrective feedback. In a mixed-methods study, Busch (2010) also investigated the effects of an SLA course on pre-service teachers' beliefs. The results revealed significant changes in beliefs in several areas. The participants attributed their pre-course beliefs to their prior experiences in high school and the post-course changes to the content of the course and experiential activities. In another study, Chai et al. (2009) investigated the change in epistemological beliefs and beliefs about teaching and learning among Singaporean pre-service teachers during a nine-month teacher education program. At the end of the program, significant changes were observed indicating that the program was successful in changing the pre-service teachers' beliefs.

In contrast, some other studies have indicated a negligible change in pre-service teachers' pedagogical beliefs despite the efforts of teacher educators in instructional courses. In a recent mixed-methods study, Shooshtari et al. (2017) identified Iranian pre-service teachers' pedagogical beliefs about language learning/teaching and traced the refinements during a practicum course. The results indicated that many beliefs remained unchanged due to the influential effects of the pre-service teachers' prior experiences. The same findings were obtained in Kunt and Özdemir's (2010) study that examined the impact of methodology courses on EFL pre-service teachers' beliefs. The results showed that the participants' beliefs remained unchanged or changed to a small extent in certain areas. In another study conducted in 2007, Lim and Chen investigated how participation in the micro LESSONS series might change the pre-service teachers' pedagogical beliefs from traditional beliefs toward constructivist ones. The results indicated that the pedagogical beliefs of the pre-service teachers were resistant to change and could be affected in a short period of time.

As the previously-mentioned research findings suggest, the impact of teacher education courses on pre-service teachers' pedagogical beliefs is far from unanimous, most probably because it is a function of contextual variables. In this line of inquiry, this study aimed to fill the gap in the context of Iranian Teacher Education University by adopting a mixed-methods approach to investigate the impact of a training course, entitled "Philosophy of Education for English Language Teachers", on the EFL pre-service teachers' pedagogical beliefs. The main objective of the given course, which is a Pedagogical Content Knowledge (PCK) module in the EFL curriculum of the University, is elaboration on the EFL pre-service teachers' pedagogical beliefs. More specifically, this study attempted to answer the following questions:

1) Do Iranian EFL pre-service teachers' pedagogical beliefs significantly change in the course "Philosophy of Education for English Language Teachers"?

2) What is the nature of the possible changes that occur due to the intervention effect of the course?

3) What are the contributing factors to the success of the course in changing the EFL pre-service teachers' pedagogical beliefs?

Methodology

Participants

The participants of the study were 84 Iranian EFL pre-service teachers who had been admitted to two branches of Farhangian University in Markazi province. They were composed of 38 females and 46 males who had enrolled in four intact classes, two classes in each branch before the study began. Their ages ranged from 19 to 21, and all of them were freshmen taking their courses in the first semester in the teacher education program.

Instruments

EFL Pre-Service Teachers' Beliefs Questionnaire: This instrument consisted of 27 five-point Likert scale items pertaining to EFL pre-service teachers' pedagogical beliefs. To develop the questionnaire, first, the related literature and the available validated questionnaires were reviewed and a pool of 42 five-point Likert scale items, with alternatives ranging from completely disagree to completely agree, were written. Based on the experts' comments, some modifications were made to the original version, and 27 items were kept under three subscales, namely, beliefs about teachers (13 items), beliefs about learners (7 items), and beliefs about the education system (7 items). (See Appendix A). To check the reliability and construct validity of the instrument, 159 EFL pre-service teachers completed the questionnaire through an online survey Google Forms. The reliability coefficients were found to be 0.89 for the whole scale, and 0.88, 0.91, and 0.84 for beliefs about teacher, learner, and education system subscales, respectively. The results of factor analyses indicated that the three-factor solution possessed good data-model fit across all indices, χ^2 (121, $N = 159$) = 477.32, $p < 0.000$, $\chi^2/df = 2.19$, $GFI = 0.90$, $NNFI = 93$, $CFI = 0.92$, $RMSEA = 0.07$. These results demonstrated that the scale was valid and reliable for measuring the EFL pre-service teachers' pedagogical beliefs in the context of the study. It should be noted that an article that gives a full account of these findings is under review for publication.

EFL Pre-Service Teachers' Beliefs Reflective Journal: This instrument, which was designed for collecting qualitative data, was an uptake list file in which the participants were required to write their beliefs in two columns, namely *What I already believed* for writing their beliefs about the topics before the instruction began, and *What I believe now* for writing new beliefs after the instruction of each session. At the end, the participants were required to compare the columns and state any kind of change occurred due to the course instruction.

EFL Pre-Service Teachers' Beliefs Focus Group Interview: This instrument contained a single open-ended question that required the participants to report on the contributing factors to the success of the course in changing their pedagogical beliefs. To ensure the content validity of the question, two experts in the field commented on its comprehensibility. In order to create a relaxed atmosphere for the participants, they could respond to the question in the language they felt more comfortable with. The responses were collected in four focus group interview sessions, one session for each of the four groups of participants.

Procedures

In order to collect data, a sequential mixed-methods design (Ary et al., 2019) was employed. As the first step of the quantitative phase of the study, the questionnaire was constructed and validated with the data collected from 159 EFL pre-service teachers. Then, the participants of the study (*n*= 84) were informed about the purpose of the study and were required to complete the validated questionnaire if they were willing to participate in the study. After measuring their initial pedagogical beliefs in the pretest, the treatment period started. It was the instruction that was provided in 12 sessions on a weekly basis for each of the four groups in parallel. In each session, first a topic was introduced and the participants were asked to think over the topic and write down their beliefs about it. Then, a presentation that contained some fundamental issues on the topic was given. During the instruction, the participants were encouraged to voice their opinions, raise their questions, and comment on the issues. At the end of each session, they had 15 minutes to reflect and write new beliefs, opinions, and assumptions in their reflective journal. After the treatment period, the participants were asked to fill out the same questionnaire again as the post-test. Finally, in the focus group interview session which was held separately for each of the four groups, they were required to comment on the contributing factors to the success of the course. After collecting the data, the quantitative data from the questionnaire and the qualitative data from reflective journals and interviews were submitted to SPSS (version 25) and MAXQDA 2020, respectively.

Results

Quantitative Data

To answer the first question, which aimed to shed light on the changes in the participants' pedagogical beliefs, descriptive analyses were performed. In Table 1, the mean and standard deviation for each of the components and the whole scale before and after offering the instructional course have been presented.

Table 1. Paired Samples Statistics

	Beliefs	N	Mean	Std. Deviation
Pair 1	Teacher (pretest)	84	52.7	4.28
	Teacher (post-test)	84	55.0	5.24
Pair 2	Learner (pretest)	84	25.3	2.47
	Learner (post-test)	84	27.0	3.14
Pair 3	Education system (pretest)	84	24.5	2.89
	Education system (post-test)	84	25.3	3.48
Pair 4	Total (pretest)	84	102.5	7.15
	Total (post-test)	84	107.3	8.91

As the table shows, the participants' beliefs improved due to the instruction. To see if the differences were statistically significant, a series of paired samples t-tests were run. Before running the tests, it was necessary to see whether the collected data fit the standard assumptions for parametric tests. To check the assumption of normality, a series of Shapiro-Wilk tests were used. As Table 2 shows, the Shapiro-Wilk tests did not show evidence of non-normality with a $p > 0.05$ for any of the data sets. Based on these outcomes and after visual examination of the histograms and the QQ plots, it was safe to run paired samples t-tests for comparing data pairs.

Table 2. Normality test

	Beliefs	Shapiro-Wilk		
		Statistic	df	Sig.
Pretest	Teacher	.984	84	.407
	Learner	.975	84	.101
	Education system	.975	84	.103
	Total	.982	84	.283
Post-test	Teacher	.977	84	.138
	Learner	.985	84	.465
	Education system	.985	84	.414
	Total	.988	84	.657

A series of paired samples t-tests were conducted to determine the effect of training on the participants' beliefs. The results of the paired samples correlation indicated a significantly positive correlation between data pairs of the teacher subscale (r= .582), learner subscale (r= .552), education system subscale (r= .510), and the whole scale (r= .608). The results of the t-test indicated a significant difference between the mean scores of the whole questionnaire before the training (M= 102.5; SD= 7.15) and after the training (M= 107.3; SD= 8.91); [t (83) = -6.03, p= .000]. Moreover, significant differences were observed in the three components of the scale (Table 3). Therefore, it can be concluded that the course had a significant effect on changing the participants' pedagogical beliefs.

Table 3. Paired Samples Test

		Paired Differences					t	df	Sig. (2-tailed)
					95% Confidence Interval of the Difference				
		Mean	SD	SEM	Lower	Upper			
Pair 1	Teacher (pretest) & Teacher (post-test)	-2.27	4.43	.48	-3.2	-1.31	-4.69	83	.000
Pair 2	Learner (pretest) & Learner (post-test)	-1.72	2.72	.29	-2.31	-1.13	-5.81	83	.000
Pair 3	Education system (pretest) & Education system (post-test)	-.79	3.19	.34	-1.49	-.10	-2.28	83	.025
Pair 4	Total (pretest) & Total (post-test)	-4.79	7.28	.79	-6.37	-3.21	-6.03	83	.000

Qualitative Data

To examine the nature of the belief changes, which was the focus of the second research question, the participants' reflective journals were thematically analyzed drawing on Braun and Clarke's (2006) framework for thematic analysis. The results of open coding conducted on the journals indicated that the participants reported 350 instances of belief change due to the instruction of the course. These instances were analyzed using a constant comparative method and the analysis resulted in generating 13 themes. These initial themes were compared and categorized into two major categories of *raising awareness of new concepts* and *adopting new*

beliefs (Figure 1). In what follows, the major categories and their respective themes are described.

Figure 1. Emerging Categories and Related Themes of Belief Changes

***Raising Awareness*:** This category incorporates those professed pedagogical beliefs that deal with the participants' familiarity with new concepts, approaches, techniques, attitudes, and assumptions. Within this category, seven themes were identified after an analysis of 173 coded units. In what follows, each theme is elaborated on:

Teacher's Responsibilities: This theme with the highest frequency (*n*= 43) incorporated the participants' reports on their familiarity with the varied responsibilities that teachers should carry. Most participants declared that during the course, they understood that teachers' professional responsibilities go beyond transmitting content knowledge and assessing learners' achievement. In this regard, one male participant (P 23/M) stated "*In this course, I got to know that as an English language teacher, I should take on much more responsibilities than I deemed necessary before the instruction*".

Redefinitions of Key Terms: Within this theme with 34 coded units, the participants asserted that the course provided them with new definitions for key terms in pedagogy such as teaching, learning, and assessment. Referring to one of the topics in the course syllabus, one of the female participants (P 42/F) argued that "*During the course, I realized that seemingly*

simple key concepts such as teaching and learning are so complicated. Now, I feel I have a better picture of these key elements in education".

Professionalism in Education: Out of 173 coded units, 28 were clustered around the concept of professionalism in the teaching profession. The participants stated that due to the instruction they became familiar with the process of the teaching profession. This issue was reflected in the remarks by one of the participants (P 69/F) in this way: "*Before the instruction, I thought becoming a good English teacher is a process that occurs during a teacher education program. Now, I knew [sic.] that it has already begun since I started my elementary education and will continue till my retirement*".

Affective Domain of Education: Under this theme, 23 similar meaning units were sorted. The participants reported that due to the course, they had a chance to know that in addition to cognitive processes, learning involves an affective dimension as well. In this regard, one participant (P 77/M) argued that "*Before I pass [the] course, learning for me was just a cognitive process that took place in learners' minds. Now, I know that learners' feelings and emotions have their own contribution to the learning process*".

Pedagogical Misconceptions: Under this theme, 19 instances of coded statements that addressed the prevalent misconceptions and common myths in the realm of education were categorized. The participants declared that they entered the program while holding some unexamined attitudes but the course helped them understand the inappropriacy of such attitudes. One participant (P 6/F) addressed the issue in this way: "*This course was so useful because it helped me critically think about my attitudes and perceptions that seemed unquestionable. During the sessions, we gave them a second thought and now I know that some of them can be wrong*".

Hidden Curriculum: Within this theme, 15 coded units identified by the participants were clustered. The participants claimed that during the course they realized that in addition to tangible and visible components, education has some invisible components that should be considered by teachers. In this regard, one participant (P 19/M) argued that "*Due to the course, I found out that there are lots of life skills that learners must acquire but none of them can be taught via formal instruction. They are acquired peripherally through observing teachers' behaviors and personality*".

Interdisciplinary Nature of Education: This theme, which incorporated 11 coded statements, implies that during the course the participants understood that education draws on knowledge from different disciplines such as philosophy, sociology, and psychology. One of

the participants (P 55/F) acknowledged it in this way: "*Considering the pedagogical issues from philosophical and psychological points of view taught me something important: To be a good teacher means to be a good philosopher, a good psychologist, and a good sociologist*".

***Adopting New Beliefs*:** The second major category incorporates some new pedagogical beliefs that the participants claimed to adopt due to the instructional course. In this category, six themes were identified after analyzing 177 professed beliefs. In what follows, each theme is explained in detail:

Life Skills Education: Forty-five out of 177 belief changes stated by the participants were sorted under this theme. The participants believed that the course instruction changed their conceptualization of education from acquiring content knowledge to developing real-life skills. In this regard, one participant (P 81/F) believed that "*During the course, my attitude toward my profession changed completely. Before the course, I thought my responsibility as an English teacher is teaching language but now, I do believe that I'm also responsible for the learners' quality of life*".

Lifelong Learning: Under this theme, 38 belief changes addressed the concept of lifelong learning in the process of teacher development. The participants believed that before the course began, they had thought getting a BA degree in EFL would be their final point in their profession but at the end of the course their viewpoint changed. This belief change is reflected in the remark by one of the participants (P 49/F): "*I used to think of graduation as the end of professionalism and the beginning of the teaching profession. My attitude toward graduation completely changed when we discussed lifelong learning in teacher development*".

Individual Differences: This theme which incorporated 32 belief changes addressed the notion of individual differences among learners. The participants claimed that before the course instruction, they had believed in the one-size-fits-all principle in education but after the instruction, they adopted a learner-centered approach with a focus on individual differences. This reconceptualization was clearly reflected in a statement by a participant (P 3/M): "*I had heard of individual differences before I became a prospective teacher but I thought it couldn't be implemented in our education system. Now I believe that it is not only practical but also its implementation is of vital importance*".

Education System Reform: Twenty-eight belief changes stated under this theme address the issue of the education system reform. The participants stated that due to the course instruction, they formed negative attitudes toward the current education system. Through making a comparison between ideal education systems and the one being enacted in Iran, one participant (P 20/F) addressed the issue in this way: "*When the latest insights into education*

were discussed, I came to the conclusion that our education system is a traditional system which is in urgent need of reformation".

Reflective Teaching: Nineteen belief changes that dealt with the issues of teachers as role models were clustered around this theme. The participants noted that after two sessions in which the issue of reflective teaching had been discussed, they developed a positive attitude toward this teaching strategy. One participant (P 22/M) commented on the issue in this way: "*Undoubtedly, one of the most influential topics in the course which changed my professional attitude was reflective teaching. Now I do believe that a teacher who is not reflective is not a teacher at all*".

Learner-centered Pedagogy: Under this theme, 15 stated changes in pedagogical beliefs were sorted. The participants reported that they experienced a shift in attitudes from the teacher-centered approach to the learner-centered approach. This belief change was mentioned by one participant (P 33/F) in this way: "*During the sessions in which philosophical schools of thought were discussed, my attitudes toward the role of learner changed from a passive member of the class to [an] active participant in the learning process*".

In order to answer the third question which dealt with the contributing factors to the success of the course in changing pedagogical beliefs, the participants' responses were thematically analyzed. The results of open coding resulted in 210 coded units which were sorted and placed in three major categories: *course content*, *teaching strategies*, and *teacher educator*. Figure 2 displays the categories and the related themes.
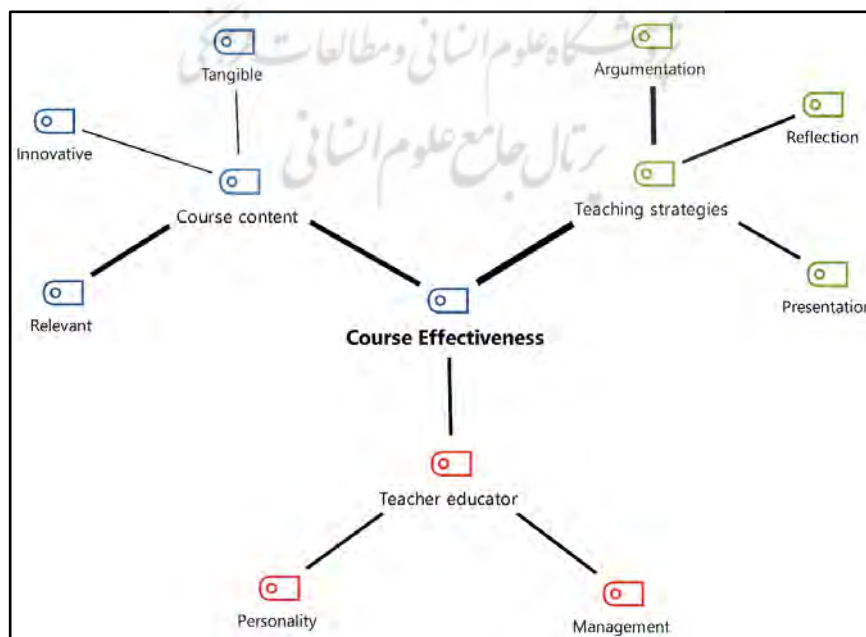
Figure 2. Emerging Categories and Related Themes of the Course Impact

Teaching Strategies: Eighty-eight out of 210 reasons mentioned by the participants for the success of the course in changing pedagogical beliefs highlighted the role of the techniques and strategies employed in the course. The participants attributed the impact of the course to class argumentation ($n= 45$), reflective journal ($n= 23$), and class presentation ($n= 20$). One of the participants (P 3/M) stated that *"The course was successful in changing our attitudes because the sessions were held based on critical thinking and class discussion rather than lectures".* Another participant (P 63/F) also attributed the course's success to *"the reflective journals that paved the way for systematic analysis of students' experiences, assumptions, and beliefs".*

Course Content: Under this category, 76 reasons stated by the participants highlighted the effect of the course content on the quality of instruction. The participants reported that the course achieved its intended objective because the course content and materials were relevant ($n= 45$), innovative ($n= 18$), and tangible ($n= 13$). In this regard, one of the participants (P 38/M) argued that *"The course was really useful because the topics in the syllabus had been chosen carefully. All students were mentally involved because the topics and issues were interesting and completely relevant to our future career".* Another participant (P 40/F) also commented in this way: *"In this course, we didn't feel the passage of time because instead of listening to boring lectures and studying hundreds of pages of technical knowledge, we dealt with evaluating our previous experiences as English language learners".*

Teacher Educator: Several reasons that were reported by the participants addressed the instructor's performance in the course. In this category with 46 coded units, two emerging themes were identified: The instructor's personality ($n= 25$) and his course management ($n= 21$). Regarding the former, one participant (P 77/F) stated: *"I should confess that the instructor's charismatic personality made his opinions much more believable. We see no contradiction between his speech and action".* Moreover, regarding the latter, another participant (P 49/M) mentioned that *"Nobody can deny the impact of course organization on the quality of this useful course because the elements of the course including the syllabus, content, instruction, assignment, and assessment were effectively managed".*

Discussion

This study investigated the impact of a training course on pre-service teachers' pedagogical beliefs. In a mixed-methods design, the participants' beliefs were measured quantitatively before and after the instructional course, and their reflective journals and interview transcripts were thematically analyzed to shed light on the quantity and quality of belief changes and to

determine the factors contributing to the belief changes. The results of the quantitative analyses revealed that the course was successful in changing the participants' pedagogical beliefs. The results of the qualitative analyses of reflective journals indicated that the course was successful in changing the pre-service teachers' pedagogical beliefs at two levels of raising their awareness of new beliefs and helping them adopt some new ones. Moreover, the analyses of interviews suggested that the course's success was a function of the course contents, the applied strategies, and the teacher educator's competency.

The findings of this study corroborate those indicated in Taddarth's (2019) study that investigated the impact of a training course on EFL pre-service teachers' beliefs. The findings obtained in this study also concur with the findings revealed in Busch's (2010) study that proved the effect of an SLA course on the pre-service teachers' beliefs. However, the findings obtained in this study do not confirm the findings indicated in the study by Shooshtari et al. (2017) who found that pre-service teachers' pedagogical beliefs do not change during teacher education programs because of the influential effects of their prior experiences. The findings are also in contradiction with the findings reported in Kunt and Özdemir's (2010) study which showed that the participants' beliefs remain unchanged in teacher education programs.

The results of the quantitative data collected via the questionnaire support the significant effect of teacher education courses on changing pre-service teachers' pedagogical beliefs about teachers, learners, and the education system. Calculating the effect size showed that the magnitude for the whole scale was medium ($d = 0.65$) (Cohen, 1992). Although this numerical value is not large (i.e., more than 0.8), it should be interpreted by considering the fact that the participants' mean score before the course began was 102 out of 135. This high numerical index shows that they had entered the program while holding considerable appropriate pedagogical beliefs. This implies that in the context of the study in addition to apprenticeship of observation, anti-apprenticeship, which is defined as the effect of negative prior language learning experience on teachers' pedagogical beliefs (Moodie, 2016), is also at work. In other words, while entering teacher education programs, pre-service teachers have already adopted appropriate pedagogical beliefs because of observing ineffective practices or having unpleasant experiences. However, this does not mean that the course does not have something significant to add to pre-service teachers' pedagogical beliefs because, as research findings indicate, teachers' stated beliefs are not necessarily reflected in their classroom practices (Buehl & Beck, 2014; Rahman et al., 2020). Therefore, in case pre-service teachers hold appropriate

pedagogical beliefs, the course should aim at deepening the espoused beliefs to make them a part of their future practices.

The findings related to the nature of belief changes demonstrated that change in pre-service teachers' pedagogical beliefs is a matter of degree rather than a matter of all-or-nothing. In several cases, the participants reported some sort of familiarity with or awareness of new concepts or perspectives without incorporating them into their belief system. This finding related to the developmental nature of belief change has also been proposed in Cabaroglu and Roberts's (2000) categorization of belief changes which includes various types such as awareness of new concepts, consolidation of prior beliefs, elaboration on existing beliefs, addition of new beliefs, and reordering beliefs in terms of their importance. The first stage of this process begins with awareness of a discrepancy or conflict between previously held beliefs and new ideas proposed in instructional courses. This awareness may lead to doubting the existing beliefs, reordering them in terms of importance, or substituting those that are no longer valid with alternative ones. If no discrepancy is found, the existing beliefs may be strengthened, reconstructed by adding new dimensions or integrated into the whole belief system. This implies that the change in EFL pre-service teachers' pedagogical beliefs needs an incubation period that begins with awareness of new concepts and results in adopting new beliefs. It should be noted that the process of belief changes is not merely cognitive and has emotional, social, and professional dimensions (Roberts, 1998) which makes it highly variable among individuals.

These findings can also be interpreted within the contemporary constructivist view of teacher education, which defines pre-service teachers' learning as the interaction between their prior cognition and the contents and materials provided in instructional courses (Kiliańska-Przybyło, 2010). What pre-service teachers bring to programs is varied in nature, ranging from mistaken personal knowledge types to firmly-established appropriate beliefs. It implies that pre-service teachers' pedagogical beliefs change operates along a continuum (Fives & Buehl, 2012) and teaching education programs may fail to change them if teacher educators do not have a clear picture of the quality and quantity of these prior mental constructs. (Borg, 2003, Pajares, 1992). These mental constructs are not necessarily inappropriate when they are evaluated in the sociocultural context of educational settings. Therefore, these beliefs should not be refuted instantly by teacher educators in the hope of complete eradication.

The results related to the contributing factors to the success of the course revealed that the teaching strategies played the most vital role in this change process. The course in this study provided an interactive environment for the participants to discuss and reflect on their prior

experiences and consider them within innovative theoretical frameworks in collaboration with the instructor and peers, an interactive environment that is referred to as *collaborative dialogic reflective practice* (CDRP) by Li (2017). Within Vygotskian Sociocultural Theory, this dialogic interaction between teacher educators and pre-service teachers (Johnson, 2015, Yuan & Lee, 2014) and reflection on personal epistemologies (Brownlee et al., 2011; Valanides & Angeli, 2005) have been accentuated in the literature on teacher education. Interpreting the findings with this framework implies that in a context, in which pre-service teachers enter the program with a considerable number of appropriate pedagogical beliefs, adopting a teacher-fronted instruction that employs lecture as the dominant teaching strategy does not lead to satisfactory outcomes. This is in line with the constructivist approach in which the process of belief change occurs internally with an active role assigned to the pre-service teachers as the primary change agents in the change process.

The course content, which turned out to be the second influential factor in the course's success, was reported by the participants to be relevant, innovative, and tangible. The relevance and tangibility of the course contents can be attributed to drawing on the participants' prior experiences as the topics of discussion during the sessions. As stated above, the pedagogical beliefs out of these prior experiences due to their facilitative and debilitative effects can act as a double-edged sword. Therefore, dealing with these prior pedagogical beliefs is a real challenge for teacher education programs (Kubanyiova, 2012). In this regard, the finding related to the effects of course content implies that the given challenge can be faced if pre-service teachers' prior beliefs are negotiated and critically analyzed to help the participants reach a shared understanding or what is technically called "intersubjectivity" (Stern, 2005).

Teacher educator was reported as the last contributing factor to the quality of the course. It is quite obvious that the two previous factors, teaching strategies, and course content are also a function of a teacher educator's performance. Nevertheless, an emerging independent category in the pattern indicates that the educator plays a central role in the effectiveness of the course. The educator's personality and management skills in the literature have been defined as the components of *personality competence*, which is defined as the teacher's ability to reflect "a mature, solid, dignified, stable, and wise personality" (Lukman et al., 2021, p. 514). In addition to the contribution of this theme, the significance of the educator's management skills in the course organization was highlighted by the participants. Referring to creating a safe and collaborative environment as the most salient emerging theme in this study may render this interpretation that an educator can guarantee the course impact if they adopt a participatory

approach to foster collaboration and critical reflection, or what is called the Zone of Collaborative Development (ZCD) in the literature (Balakrishnan, 2009). This implies that in teacher education programs, the courses on pre-service teachers' pedagogical beliefs should be offered by well-competent educators.

This study clearly has some limitations that should be considered while generalizing the findings to other settings. The most important limitation lies in the fact that the treatment period was limited to a thirteen-session instructional course. Since belief change is a never-ending process, further studies should be carried out to investigate pre-service teachers' pedagogical beliefs during longer spans of time. Another limitation of this study is the sampling procedure. Although the sample size was adequate, due to some restrictions and considerations, the researchers selected the participants from just two branches of the university. Since teacher's pedagogical beliefs are a context-bound variable, further experimental investigations are needed to study the impact of instruction on teachers' pedagogical beliefs by including random samples of participants in other educational settings. Finally, this study focused on cognitive change rather than behavioral change, which is the goal of teacher education programs. An interesting research problem to be addressed in future studies can be investigating the impact of such courses on pre-service teachers' practice.

Conclusion

Dealing with pre-service teachers' prior pedagogical beliefs is among the challenges of teacher education programs. The findings of this study indicated that teacher education instructional courses can have a significant impact on pre-service teachers' pedagogical beliefs. These courses have the potential to raise awareness of new concepts (e.g., hidden curriculum, affective domain, and professionalism in teaching), and helping the pre-service teachers adopt new pedagogical beliefs (e.g., life-skill education, individual differences, and lifelong learning). Definitely, the degree of success is a function of so many contextual variables such as implemented teaching strategies and instructional content. Considering the importance of teachers' pedagogical beliefs in educational outcomes, teacher educators should capture pre-service teachers' prior beliefs and create a safe and collaborative atmosphere for critical reflection on these beliefs within the latest theoretical frameworks.

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References

Almarza, G. (1996). Student foreign language teachers' growth. In D. Freeman & J. C. Richards (Eds.), *Teacher Learning in Language Teaching* (pp. 50−78). Cambridge University Press.

Ary, D., Jacobs, L. C., Irvine, C. K. S., & Walker, D. (2019). *Introduction to research in education*. Cengage Learning.

Balakrishnan, V. (2009). Teaching moral education in secondary schools using real-life dilemmas. *Managers' Journal of Educational Psychology, 2*(3), 14-20.

Bates, R. (2005). An anarchy of cultures: The politics of teacher education in new times. *Asia-Pacific Journal of Teacher Education, 33*(3), 231-241.

Borg, S. (2003). Teacher cognition in language teaching: A review of research on what language teachers think, know, believe, and do. *Language Teaching, 36*(2), 81−109. https://doi.org/10.1017/S0261444803001903

Borg, S. (2009). Language teacher cognition. In A. Burns & J. C. Richards (Eds.), *The Cambridge guide to second language teacher education* (pp. 163-171). Cambridge University Press.

Borg, S. (2015). *Teacher cognition and language education: Research and practice*. Bloomsbury Publishing.

Borg, S. (2019). Language teacher cognition: Perspectives and debates. In X. Gao (Ed.), *Second handbook of English language teaching* (pp. 1−23). Springer.

Braun, V., & Clarke, V. (2006). Using thematic analysis in psychology. *Qualitative Research in Psychology 3*(2).77−101. https://doi.org/10.1191/1478088706qp063oa

Brownlee, J., Petriwskyj, A., Thorpe, K., Stacey, P., & Gibson, M. (2011). Changing personal epistemologies in early childhood pre-service teachers using an integrated teaching program. *Higher Education Research and Development*, *30*(4), 477−490.

Buehl, M. M., & Beck, J. S. (2014). The relationship between teachers' beliefs and teachers' practices. In H. Fives, & M. G. Gill (Eds.) *International handbook of research on teachers' beliefs* (pp. 66-84). Routledge.

Busch, D. (2010). Pre-service teacher beliefs about language learning: The second language acquisition course as an agent for change. *Language Teaching Research, 14*(3), 318−337.

Cabaroglu, N., & Roberts, J. (2000). Development in student teachers' pre-existing beliefs during a 1-year PGCE program. *System, 28*(3), 387-402. https://doi.org/10.1016/S0346-251X(00)00019-1

Chai, C. S., Teo, T., & Beng Lee, C. (2009). The change in epistemological beliefs and beliefs about teaching and learning: A study among pre-service teachers. *Asia-Pacific Journal of Teacher Education*, 37(4), 351-362. https://doi.org/10.1080/13598660903250381

Cohen, J. (1992). Quantitative methods in psychology: A power primer. *Psychological Bulletin, 112*(1), 155-159.

Conner, J., & Vary, G. (2017). Confronting apprenticeships of observation: How student-faculty pedagogical partnership complicates conceptualization, understanding, and practice of effective pedagogy. *International Journal for Students as Partners, 1*(1), 1-6.

Darling-Hammond, L. (2006). Constructing 21st century teacher education. *Journal of Teacher Education, 57*(3), 300-314.

Feryok, A. (2010). Language teacher cognitions: Complex dynamic systems? *System, 38*(2), 272–279.

Fives, H. & Buehl, M. (2012). Spring cleaning for the "messy" construct of teachers' beliefs: What are they? Which have been examined? What can they tell us? In K. R. Harris, S. Graham, & T. Urdan (Eds.), *APA educational psychology handbook: Individual differences and cultural and contextual factors* (p. 471–499). American Psychological Association.

Gray, P. L. (2019). Mitigating the apprenticeship of observation. *Teaching Education, 31*(4), 404-423. https://doi.org/10.1080/10476210.2019.1631785

Johnson, C. C. (2006). Effective professional development and change in practice: Barriers science teachers encounter and implications for reform. *School Science and Mathematics, 106*(3), 150–161.

Johnson, K. E. (2015). Reclaiming the relevance of L2 teacher education. *The Modern Language Journal, 99*(3), 515-528.

Kagan, D. M. (1992). Implication of research on teacher belief. *Educational psychologist, 27*(1), 65-90. https://doi.org/10.1207/s15326985ep2701_6

Khodamoradi, A., & Maghsoudi, M. (2020). Development and validation of the English language teacher competencies questionnaire. *Language and Translation Studies, 53*(1), 167-195. https://doi.org/10.22067/lts.v53i1.79165

Kiliańska-Przybyło, G. (2010). Teaching ≠ Learning?: a longitudinal study into the EFL teacher trainees' cognitions. *The New Educational Review, 20*(1), 193-205.

Korthagen, F. A. J. (2010). How teacher education can make a difference. *Journal of Education for Teaching, 36*(4), 407–423. https://doi.org/10.1080/02607476.2010.513854

Korthagen, F. A., Loughran, J., & Russel, T. (2006). Developing fundamental principles for teacher education programs and practices. *Teaching and Teacher Education, 22*(8), 1020-1041. https://doi.org/10.1016/j.tate.2006.04.022

Kubanyiova, M. (2012). *Teacher development in action: Understanding language teachers' conceptual change.* Palgrave Macmillan.

Kunt, N., & Özdemir, Ç. (2010). Impact of methodology courses on pre-service EFL teachers' beliefs. *Procedia-Social and Behavioral Sciences*, *2*(2), 3938-3944.

Li, L. (2017). *Social interaction and teacher cognition*. Edinburgh University Press.

Li, L. (2020). *Language teacher cognition: A sociocultural perspective*. Springer Nature.

Lim, C. P., & Chan, B. C. (2007). Micro LESSONS in teacher education: Examining pre-service teachers' pedagogical beliefs. *Computers & Education*, *48*(3), 474-494.

Lortie, C. D. (1975). *Schoolteacher: A sociological study*. University of Chicago Press.

Lukman, A. I., Marsigit, M., Istiyono, E., Kartowagiran, B., Retnawati, H., Kistoro, H., & Putranta, H. (2021). Effective teachers' personality in strengthening character education. *International Journal of Evaluation and Research in Education, 10*(2), 512-521. https://doi.org/10.11591/ijere.v10i2.21629

Martin, A. K., & Russell, T. (2009). Seeing teaching as a discipline in the context of pre-service teacher education: Insights, confounding issues, and fundamental questions. *Teachers and Teaching: Theory and Practice*, *15*(2), 319–331. https://doi.org/10.1080/13540600902875381

Moodie, I. (2016). The anti-apprenticeship of observation: How negative prior language learning experience influences English language teachers' beliefs and practices. *System, 60*, 29–41.

Özmen, K. S. (2012). Exploring student teachers' beliefs about language learning and teaching: A longitudinal study. *Current Issues in Education, 15*(1), 1-15.

Pajares, F. M. (1992). Teachers' beliefs and educational research: Cleaning up a messy construct. *Review of Educational Research, 62*(3), 307-332.

Rahman, M. M., Singh, M. K. M., & Salman Fersi, M. (2020). Multiple case studies on the impact of apprenticeship of observation on novice EFL teachers' cognition and practices. *MEXTESOL Journal, 44*(4), 1-11.

Richardson, V. (2003). Preservice teachers' beliefs. In J. Raths & A. C. McAninch (Eds.), *Teacher beliefs and classroom performance: The impact of teacher education* (pp. 1–22). Information Age Publishing.

Roberts, J. (1998). *Language teacher education*. Arnold.

Shooshtari, Z., Razavipur, K., & Takrimi, A. (2017). Pre-service language teachers' cognitions about language learning/teaching and cognition refinements through a reflection-oriented practicum. *Iranian Journal of Applied Linguistics (IJAL), 20*(1), 185-217.

Stern, D. (2005). Intersubjectivity. In E. S. Person, A. M. Cooper, & G. O. Gabbard (Eds.), *The American psychiatric publishing textbook of psychoanalysis* (pp. 77–92). American Psychiatric Publishing, Inc.

Taddarth, A. (2019). Changing pre-service teachers' beliefs about oral corrective feedback through a training course. *Journal of Translation and Language, 18*(2), 8-35.

Valanides, N., & Angeli, C. (2005). Effects of instruction on changes in epistemological beliefs. *Contemporary Educational Psychology, 30*(3), 314–330. https://doi.org/ 10.1016/j.cedpsych.2005.01.001

Walker-Dalhouse, D., Sanders, V., & Dalhouse, A. D. (2009). A university and middle-school partnership: Preservice teachers' attitudes toward ELL students. *Literacy Research and Instruction*, *48*(4), 337-349.

Yuan, R., & Lee, I. (2014). Pre-service teachers' changing beliefs in the teaching practicum: Three cases in an EFL context. *System 44*, 1–12. https://doi.org/10.1016/ j.system.2014.02.002

Zhao, H. (2019). *Teachers' cognition formation and reformation for teaching EFL writing: A study of College English teachers in China.* [Doctoral dissertation, The University of Auckland]. http://hdl.handle.net/2292/45187

Zheng, H. (2009). A review of research on EFL pre-service teachers' beliefs and practices. *Journal of Cambridge Studies, 4*(1), 73-81.

Zheng, H. Y. (2015). *Teacher beliefs as a complex system: English language teachers in China*. Springer.

Appendix (A): *Pre-Service Teachers' Beliefs Questionnaire Items*

1. An English always needs professional development even after so many years of teaching experience.

    Completely agree □   Agree □   No opinion □   Disagree □   Completely disagree □

2. An English should avoid teacher-fronted instruction as much as possible.

    Completely agree □   Agree □   No opinion □   Disagree □   Completely disagree □

3. An English should not become demotivated because of low income.

    Completely agree □   Agree □   No opinion □   Disagree □   Completely disagree □

4. An English teacher is also responsible for teaching life skills to the learners.

    Completely agree □   Agree □   No opinion □   Disagree □   Completely disagree □

5. An English teacher should feel responsibility for their learners' out-of-school problems.

    Completely agree □   Agree □   No opinion □   Disagree □   Completely disagree □

6. An English teacher should not comment on the subjects out of their field of expertise. *

    Completely agree □   Agree □   No opinion □   Disagree □   Completely disagree □

7. An English teacher should pay attention to the learners' emotions, and feelings.

    Completely agree □   Agree □   No opinion □   Disagree □   Completely disagree □

8. An English teacher's personality can be as influential as their speech.

    Completely agree □   Agree □   No opinion □   Disagree □   Completely disagree □

9. Any innovation in our education system should be initiated and implemented externally by policy-makers. *

    Completely agree □   Agree □   No opinion □   Disagree □   Completely disagree □

10. Attracting the top ranks of Konkur to Farhangian University guarantees the quality of the education system. *

    Completely agree □   Agree □   No opinion □   Disagree □   Completely disagree □

11. Competition between students leads to improvement in the quality of education. *

    Completely agree □   Agree □   No opinion □   Disagree □   Completely disagree □

12. Demotivated learners are generally untalented. *

    Completely agree □   Agree □   No opinion □   Disagree □   Completely disagree □

13. Disruptive students should be dealt with severely. *

    Completely agree □   Agree □   No opinion □   Disagree □   Completely disagree □

14. Extrinsic motivations are more important than intrinsic motivation in the teaching profession. *

    Completely agree □   Agree □   No opinion □   Disagree □   Completely disagree □

15. For an English teacher, communication skill is as important as teaching skill.

    Completely agree □   Agree □   No opinion □   Disagree □   Completely disagree □

16. For an English teacher, having right attitudes is more important that having teaching knowledge and skills.

    Completely agree □   Agree □   No opinion □   Disagree □   Completely disagree □

17. High scores in exams are good indicators for measuring the quality of the education system. *

   Completely agree □   *Agree* □   *No opinion* □   *Disagree* □   *Completely disagree* □

18. In our education system, learners' moral, social and emotional developments are more important than their cognitive development.

   Completely agree □   *Agree* □   *No opinion* □   *Disagree* □   *Completely disagree* □

19. In the teaching profession, nothing should affect an English teacher's sense of responsibility.

   Completely agree □   *Agree* □   *No opinion* □   *Disagree* □   *Completely disagree* □

20. Innovative methods and approaches cannot be applied in our education system. *

   Completely agree □   *Agree* □   *No opinion* □   *Disagree* □   *Completely disagree* □

21. Learners can give an English teacher the best feedback on the quality of instruction.

   Completely agree □   *Agree* □   *No opinion* □   *Disagree* □   *Completely disagree* □

22. Learners should have a say in determining some teaching elements.

   Completely agree □   *Agree* □   *No opinion* □   *Disagree* □   *Completely disagree* □

23. Poor performance does not deprive a learner of the right to attending the class.

   Completely agree □   *Agree* □   *No opinion* □   *Disagree* □   *Completely disagree* □

24. Punishment is the best technique for an English teacher while dealing with students' misbehaviors. *

   Completely agree □   *Agree* □   *No opinion* □   *Disagree* □   *Completely disagree* □

25. The main goal of the education should be to prepare learners for the future life.

   Completely agree □   *Agree* □   *No opinion* □   *Disagree* □   *Completely disagree* □

26. The most effective measure to improve the quality of Iran's education system is to increase the budget of the Ministry of Education. *

   Completely agree □   *Agree* □   *No opinion* □   *Disagree* □   *Completely disagree* □

27. The top leaners in the class should be encouraged. *

   Completely agree □   *Agree* □   *No opinion* □   *Disagree* □   *Completely disagree* □

Note 1: Items 1, 2, 3, 4, 5, 6, 7, 8, 14, 15, 16, 19, & 24 were clustered around beliefs about teacher, items 11,12,13, 21, 22, 23, & 27 around beliefs about learner, and items 9, 10, 17, 18, 20, 25, & 26 around beliefs about education system.

Note 2: The asterisk (*) at the end of an item indicates that the item was reverse-scored.