

Research Article

Comparison of epistemological beliefs, teaching-learning conceptions, and self-efficacy of pre-service and in-service EFL teachers

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This study compares the epistemological beliefs, teaching-learning conceptions, and sense of self-efficacy of pre-service and in-service English as a Foreign Language (EFL) teachers with an aim to find probable statistically significant differences. Using a mixed-methods research design, the study collected quantitative data through two questionnaires and one scale, and the qualitative data through open-response questions. The participants were 374 pre-service teachers and 192 in-service teachers. 42 of the pre-service teachers and 19 of the in-service teachers volunteered to answer the open-response questions. Descriptive statistical techniques, t test, and content analysis were used to analyze the data. The findings show that both groups of teachers had relatively more sophisticated beliefs in learning process/expert knowledge and learning effort. Both groups adopted the constructivist conception more than the traditional conception, and they felt efficacious in instructional strategies, student engagement and classroom management respectively. Both groups had moderate levels of self-efficacy in classroom management, student engagement, and instructional strategies. However, the comparative analysis showed some significant differences. In-service teachers exhibited slightly stronger beliefs in innate-fixed ability and certainty knowledge. Pre-service teachers had slightly higher scores in the constructivist conception while in-service teachers had higher scores in the traditional conception. Furthermore, in-service teachers displayed slightly higher self-efficacy in classroom management and instructional strategies.

Keywords: Epistemological beliefs; In-service teachers; Pre-service teachers; Self-efficacy; Teaching-learning conceptions

Article History: Submitted 6 July 2023; Revised 20 September 2023; Published online 25 September 2023

1. Introduction

The study of beliefs has gained great importance since teachers' beliefs affect their views about teaching and learning. Epistemological beliefs are defined as individuals' cognitions associated with knowledge and the nature of knowledge (Hofer, 2001) and they are also related to teaching and learning process (Chan & Elliot, 2004). Research in teacher education reveals that teachers' beliefs and theoretical frameworks strongly influence their classroom behaviors and instructional decisions (Clark & Peterson, 1986; Richardson, 1996). This suggests that their conceptions about

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How to cite: Biçer, A. & Yıldırım, Ş. (2023). Comparison of epistemological beliefs, teaching-learning conceptions, and self-efficacy of pre-service and in-service EFL teachers. *Journal of Pedagogical Research*, 7(4), 414-438. <https://doi.org/10.33902/JPR.202322958>

teaching and learning can be the result of their beliefs. These beliefs play a significant role in shaping their teaching and learning, such as student performance, classroom atmosphere, instructional strategies, and learning activities.

Teacher preparation programs worldwide, including those in Turkey, have faced criticism as they fail to equip teachers with the essential 21st-century skills necessary for learner-centered education and preparing students for their future careers. To understand the reasons behind this failure, it is important to explore teachers' beliefs even before they enter the profession. Teachers bring a diverse range of beliefs into the classroom, shaped by their personal backgrounds, prior learning experiences, and instructional practices (Borg, 2003). These beliefs are related to the acquisition of knowledge (Hofer & Pintrich, 1997) and influence their decision-making processes, interactions with students, approaches, and use of materials in the classroom (Clark & Peterson, 1986), which suggests that epistemological beliefs are related to teaching and learning conceptions. Therefore, tracing pre-service and in-service teachers' epistemological beliefs and the relationship between them and other constructs related to teacher and teaching might give us opinions about their actions in the classroom. Despite many studies on epistemological beliefs and teaching-learning conceptions worldwide (Chan & Elliot, 2004; Cheng et al, 2009; Ketabi et al, 2014), there are not many studies that focus on this topic in Turkey (Aypay, 2011; Kırmızı & Irgatoğlu, 2021; Sarıçoban & Kırmızı, 2021; Tanrıverdi, 2012; Yılmaz & Sahin, 2011). Moreover, most existing studies have primarily explored epistemological beliefs of pre-service or in-service teachers of science and physical education. The investigation of epistemological beliefs specifically among pre-service and in-service EFL teachers remains relatively understudied, which may be considered as a gap in the literature of language teacher education in Turkey.

Teaching/learning conception is defined as beliefs about teachers' preferred ways of teaching and learning and the roles of teachers and students (Chan & Elliot, 2004). Teachers' teaching/learning conceptions and their self-efficacy are considered to be among important constructs which can be affected from each other and their epistemological beliefs. Although sometimes called as student-centered and teacher-centered approaches (Trigwell et al., 2005) or transmissive and progressive modes of learning (Chan & Elliott, 2004), teaching and learning conceptions are often associated with two learning models: traditional and constructivist conceptions (Chan & Elliott, 2004; Clements & Battista, 1990; Clifford, 1992). In traditional conception, knowledge can only be transmitted from the teacher to students (Dewey, 1987) as the instructor is viewed as the source of knowledge (Chan & Elliott, 2004). In constructivist conception, the focus is on students' constructing knowledge using their previous learning experiences under the guidance of teachers (Chan & Elliot, 2004). Students receive information from teachers and textbooks (Howard et al., 2000) or students are seen as accumulators of knowledge (Cohen, 1988). In second or foreign language teaching, traditional approaches give priority to grammar teaching using techniques of memorization (Richards, 2006).

Constructivism emerged and became the dominant paradigm in education in the 1980s. In constructivist conception, active learning environments are created to permit critical thinking, collaborating, and discovering (Chan & Elliot 2004). Such an environment encourages students to explore their own attitudes and values (Bonwell & Eison, 1991). Knowledge is created through the interaction of students with each other, or through students' interaction with their peers and teachers, who are seen as facilitators (Watkins, 1998). Therefore, this conception is considered as learner-centered since learners use sensory inputs and construct meaning out of those inputs in the learning process. Dewey (1987) points out that learner is not passive in such an environment. In a student-centered classroom, learning takes place by learning how to learn and through experiments, solving real life problems, reflection, interaction, and discussion while traditional classrooms require teachers to transmit the knowledge to students. Constructivism is rooted in notions from cognitive constructivism grounded in the work of Piaget (1970) and social constructivism, the social construction of knowledge proposed by Vygotsky (1978).

Knowing teaching/learning conceptions of teachers is important because it helps us understand what is happening in the classrooms. Their conceptions play an important role in their decisions about what techniques and strategies to use. Such an investigation requires questioning our beliefs about acquiring knowledge because of the relationship between teachers' conceptions and beliefs of teaching and learning (Chan & Elliot, 2004).

The emergence of social cognitive theory gave rise to the topic of sense of self-efficacy, defined as "beliefs in one's capabilities to organize and execute the courses of action required to produce given attainments" (Bandura, 1997, p. 3). Teacher sense of self-efficacy is defined as teachers' beliefs about their capabilities to be successful in teaching related activities like engaging and motivating (Bandura, 1997). According to Duffin et al. (2012), teachers "need to be confident in their abilities to enact effective instructional practices that result in students' learning, motivation, and other positive outcomes" (p. 827). Teacher sense of self-efficacy involves the teachers' belief in their capability to accomplish the tasks in teaching context (Tschannen-Moran et al., 1998). Therefore, having high levels of self-efficacy is important for teachers to use a variety of instructional techniques and strategies, to interact with students and to cope with the problems that occur in the classroom.

Teachers' sense of efficacy affects the classroom environment created and the learning tasks used by teachers (Bandura, 1997). Ashton and Webb (1986) state that teacher self-efficacy is directly related to student achievement. High level of self-efficacy is also related to enhancing student motivation (Ashton and Webb, 1986; Roeser et al., 1993), increasing self-esteem (Borton, 1991), having more positive attitudes toward school (Miskel, et al., 1983) and decreasing classroom management problems (Chacon, 2005). All these studies show that teacher self-efficacy has a direct influence on student outcomes.

Teachers are expected to be open to new ideas and be ready for the requirements of the new era, which means taking actions for personal and career development all the time. Cousins and Walker (2000), Guskey (1988), and Stein and Wang (1988) point out that high self-efficacy levels of teachers help them try new methods, adopt new ideas and be open to innovations to conduct a more effective teaching process. Teachers who have a high level of self-efficacy also use new techniques better and they are good at classroom management and teaching tasks (Özder, 2011). They are also more enthusiastic about their profession (Guskey, 1982) and more committed to their jobs (Coladarci, 1992; Evans & Tribble, 1986). Ashton and Webb (1986) point out that teachers with high efficacy are less critical about the mistakes made by students.

This article, based on a PhD. dissertation, aims to compare the epistemological beliefs, teaching-learning conceptions, and self-efficacy of pre-service and in-service EFL teachers and whether these differences are statistically significant. The findings of this study may inform teacher education stakeholders and contribute to the enhancement of language teacher training programs. This article will focus on the following questions:

RQ 1) What are the epistemological beliefs, teaching-learning conceptions, and sense of self-efficacy held by pre-service EFL teachers?

RQ 2) What are the epistemological beliefs, teaching-learning conceptions, and sense of self-efficacy held by in-service EFL teachers?

RQ 3) Is there a significant difference in epistemological beliefs, teaching-learning conceptions, and sense of self-efficacy between pre-service and in-service EFL teachers?

1.1. Literature Review

The research investigating teachers' and students' beliefs about the nature of knowing, how their knowledge is constructed and defined ground on epistemology which is defined by Hofer and Pintrich (1997) as a branch of philosophy concerning what knowledge is and how people justify it. The arousing interest in understanding how people know and hold beliefs about knowing led the researchers to understand what epistemological beliefs people held. The initiator of research in epistemology is considered to be Piaget (1950), who used the term genetic epistemology, which is

defined by Kitchener (1981) as “the study of the passage from states of lesser knowledge to states of knowledge (that are judged to be) more advanced” (p. 402). Describing his theory of intellectual development, Piaget was concerned with the real or psychological ‘construction of knowledge’.

Hofer (2001) regards epistemology as a philosophical endeavor to investigate the source of knowledge, its nature, its boundaries, and the methods of knowledge acquisition and its justification. Hofer (2001) believes that personal epistemology includes individual understandings of knowledge and knowing comprised by specific dimensions. In their comprehensive analysis of epistemological theories, Hofer and Pintrich (1997) identified three different approaches to research on epistemology. Researchers like Baxter Magolda (1987, 1992), Belenky et al. (1986), and Perry (1970, 1981) focused on individuals' interpretations of their educational experiences. King and Kitchener (1994), Kitchener and King (1981), Kitchener et al. (1989), and Kitchener et al. (1993) analyzed thought processes and reasoning. Ryan (1984a, 1984b) and Schommer (1990, 1994b) approached epistemology as a collection of largely independent beliefs.

Literature review in this study shows that there has been considerable research on epistemological beliefs, teaching-learning conceptions, and self-efficacy in different fields. Some of those research are about the relationship between epistemological beliefs and teaching-learning conceptions (Aypay, 2011; Chan & Elliot, 2004; Cheng et al., 2009; Ketabi & Zabihi, 2014; Tanrıverdi, 2012; Yılmaz, 2011), some are about different variables connected to sense of self efficacy (Ashton & Webb, 1986; Caprara, et al., 2006; Coladarci, 1992; Eslami & Fatahi, 2008; Swars, 2005; Tella, 2008; Topkaya & Yavuz, 2011; and some are about the relationship between epistemological beliefs and self-efficacy (Gürol et al., 2010; Rakıcıoğlu, 2005). However, the relationship among epistemological beliefs, teaching-learning conceptions and self-efficacy has not been focused on much in Turkey, which suggests that there is a need to study this subject.

Different studies have been conducted so far to investigate the relationship between epistemological beliefs and other constructs such as conceptions of teaching and learning, self-efficacy, motivation, achievement or academic performance, and field of study. For example, Chan and Elliot (2004) investigated the relationship between epistemological beliefs and conceptions of teaching and learning and found a correlation between the dimensions ‘innate ability’, ‘authority knowledge’, ‘certain knowledge’ and ‘traditional teaching’ conception. They also stated that there was a correlation between the dimension ‘learning effort’ and ‘constructivist teaching’ conception. Chan and Elliot (2004) also pointed out that epistemological beliefs are related to conceptions about teaching/learning and that teachers’ conceptions and class teaching are beliefs driven. In another study, Chan and Elliot (2004) concluded that epistemological beliefs were significantly related to the deep and surface strategies adopted by students and those beliefs had a predictive effect, and he found significant relations between epistemological beliefs and learning strategies as well as between epistemological beliefs and conceptions of learning. The relationship between epistemological beliefs and strategy use has also been investigated. Schommer-Aikins and Easter (2006) reported that there was a meaningful relationship between epistemological beliefs and study strategies among different cultural groups.

Another construct investigated in the studies related to epistemological beliefs as a variable was self-efficacy beliefs. Yılmaz-Tuzun and Topcu (2008) found that there was a negative correlation between the dimension of innate ability and self-efficacy beliefs of pre-service elementary science teachers. However, Sünger (2007) could not find any significant relationship between self-efficacy beliefs and epistemological beliefs of preservice science teachers at elementary and secondary science teaching. Paulsen and Feldman (1999) found out that college students' motivation to learn is related to their epistemological beliefs. Kızılgüneş et al. (2009) found that students who believed knowledge to be evolving and handed down by authority were more likely to be self-efficacious in sixth grade elementary students’ learning.

Hofer (2001) found that there was a link between academic performance and epistemic beliefs of first-year college students in terms of certain knowledge dimensions. Schommer (1993a) also investigated epistemological beliefs and academic performance of high school students and she

found that students performed better when they believed in quick learning, simple knowledge, certain knowledge, and fixed ability less. However, the results changed after general intelligence was added to the analyses and only quick learning predicted academic performance. Schommer-Aikins and Easter (2006) conducted another study with middle school students, and they found that epistemological beliefs affect mathematical performance and overall academic performance.

Regarding the studies on the epistemological beliefs of EFL teachers in Turkey, Rakıcıoğlu (2005) found that teachers' epistemological beliefs and their efficacy influenced their perceptions either positively or negatively. According to Pan and Yelken (2016), pre-service English language teachers had advanced levels of epistemological beliefs that influenced their learning processes. Munis (2017) found that EFL students held sophisticated epistemological beliefs related to learning based on effort and ability. Dere (2017) revealed that EFL university students had both naive and sophisticated beliefs. Öner (2019) found a significant difference among in-service teachers' epistemological beliefs and teaching styles. Yalçın (2019) demonstrated that pre-service English teachers held sophisticated epistemological beliefs and favored student and problem-centered curriculum design orientations. Kırmızı and Irgatoğlu (2021) found out that learning effort was the most influential predictor of teaching approaches of pre-service EFL teachers. Sarıçoban and Kırmızı (2021) revealed that the ability to learn and the source of knowledge dimensions of epistemological beliefs affected transmission-based teaching.

Studies conducted in other countries have also examined the epistemological beliefs of EFL teachers. Ketabi et al. (2014) found that traditional teaching-learning conceptions and certain dimensions of epistemological beliefs were positively related. They also found correlations between constructivist conceptions and specific dimensions of epistemological beliefs. Ismail (2017), in a study in the United Arab Emirates, discovered that pre-service EFL teachers who held naive epistemological beliefs had a tendency to adopt surface-level assessment orientations, while those with sophisticated epistemological beliefs embraced deeper level approaches to assessment in language settings. Kahsay (2019) revealed that students in Ethiopia with sophisticated epistemological beliefs exhibited more strategic use of higher-order cognitive and metacognitive learning strategies. Mardiha and Alibakhshi (2020) found a statistically significant association between the perceptions of teaching and learning and epistemological beliefs of EFL teachers in Iran. Soleimani (2020) indicated that in-service EFL teachers' teaching styles were influenced by their epistemological beliefs.

The relationship between teaching-learning conceptions and other constructs have been investigated in different studies so far. For example, Chan and Elliot (2004) found a correlation between the dimensions 'innate ability', 'authority knowledge', 'certain knowledge' and 'traditional teaching' conception and a correlation between the dimensions of 'learning effort' and 'constructivist teaching' conception. Self-efficacy was another construct investigated with teaching styles. Heidari et al. (2012) found a significant relationship between teachers' self-efficacy and their teaching styles and a significant difference in teachers' self-efficacy about their teaching styles.

The study by Tavakoli et al. (2015) showed significant positive correlations between traditional conceptions of teaching and learning and teachers' bias towards perfectionism as well as their biases against the use of learners' first language and their risk-taking behavior. They also found negative correlations between the constructivist conceptions of language teaching and learning and teachers' bias in favor of the Western culture as well as their bias against learners' use of the L1. Another construct investigated in studies related to teaching and learning conceptions was teacher burnout. For example, Zabihi and Khodabakhsh (2017) found that teachers were more inclined towards constructivist conceptions of teaching and learning and that there was a significant positive correlation between teachers' total burnout level alongside two of its subscales and their traditional conceptions of learning and teaching.

Yalçın (2019) found out that pre-service English teachers adopted facilitator/personal model/expert and delegator/facilitator/expert teaching styles, categorized as student-centered teaching styles. He also found a significant relationship between teaching styles and curriculum

design orientations preferences. In another study, Solemani (2020) showed that the facilitator style was the dominant style of teaching and learning among English language teachers. She also found out that EFL teachers teaching style was informed by their epistemological beliefs. Sarıçoban and Kırmızı (2021) found that teacher engagement affected EFL teachers' instructional preferences and that the ability to learn and source of knowledge dimensions had an impact on their transmission-based teaching.

Studies on self-efficacy beliefs in Turkey focused on areas such as change in self-efficacy beliefs, predictors of self-efficacy, and differences in self-efficacy levels of both pre-service and in-service teachers. Atay (2007), Şahin and Atay (2010), and Karakaş (2016) found that practicum led to a positive change in pre-service teachers' beliefs about instructional strategies and student engagement. Dolgun (2016) found that in-service and pre-service teachers' self-efficacy beliefs were relatively high while Dolgun and Caner (2019) found slight differences between the two groups in overall score of self-efficacies in favor of pre-service teachers. On the other hand, Ekizler (2013) reported that in-service EFL teachers had higher self-efficacy than pre-service teachers in student engagement, instructional strategies, and classroom management.

In-service teachers generally reported higher self-efficacy in classroom management (Şekerci, 2011) and instructional strategies (Taşer, 2015). Overall self-efficacy of in-service teachers was found to be high (Can, 2019; Doğan, 2020; İlgör, 2019; Mızrak, 2019; Üstünbaş, 2020). Pre-service teachers, on the other hand, had higher self-efficacy levels related to their general self-efficacy (Esen, 2012) and future teaching career (Ercan-Demirel, 2017). Sevime and Subaşı (2018) found that pre-service teachers had moderate level of perceived teacher efficacy and that practicum had the greatest effect. Yılmaz et al. (2022) found that self-efficacy beliefs and attitudes towards the profession had an impact on their entrepreneurship.

Different variables were found to predict self-efficacy beliefs of EFL teachers. For in-service teachers, years of experience (Onbaşı, 2014; Ülkümen, 2013), administration support and mastery experience (Ülkümen, 2013) were significant predictors. A significant relation was found between self-efficacy and academic achievement of pre-service teachers (Kotbaş, 2018). In-service teachers' self-efficacy was significantly related to their proficiency and achievement (Can, 2019), to their motivation (Taşçı, 2019), and to their mindset (Yılmaz, 2020). Kara et al. (2022) found the mediating role of teacher self-efficacy on students' perception of learning experience.

Studies on self-efficacy beliefs in other countries focused on areas such as the relationship between instructional variation and teaching efficacy, efficacy beliefs and instructional strategies, and factors influencing self-efficacy. Gerges (2001) found that correlations between instructional variation and pre-service teachers' sense of teaching efficacy were not significant. Wertheim and Leyser (2002) found that personal teacher efficacy correlated positively with the willingness to use and perceived effectiveness of different instructional strategies. Akbari and Moradkhani (2010) found that experienced teachers had greater levels of efficacy beliefs in various domains compared to novice teachers. Skaalvik and Skaalvik (2010) found no positive relationship between self-efficacy beliefs of in-service teachers and teacher burnout. Choi and Lee (2016) found that language proficiency and self-efficacy beliefs were interdependent and suggested that in-service teachers' self-efficacy may be influenced by their language proficiency levels. Phan and Locke (2015) found that social persuasion was the most influential factor, in addition to vicarious experiences and physiological/affective states. Marashi and Azizi-Nassab (2018) found that language proficiency and self-efficacy scores of in-service teachers were significantly related whereas their language proficiency and classroom management were not correlated.

Studies on teaching-learning conceptions both in Turkey and other countries suggest that while pre-service teachers generally lean towards constructivist teaching approaches and student-centered curriculum design orientations (Yalçın, 2019), in-service teachers' teaching-learning conceptions can vary. According to Koşar et al. (2021), EFL teachers highly believed that constructivist teaching had an impact on student learning. Kaymakamoğlu's (2017) study revealed that traditional teaching practices were more frequent than potentially constructivist practices.

Doğan (2020) found a significant relationship between self-efficacy and communicative teaching practices. Sarıçoban and Kırmızı (2021) found that the ability to learn and the source of knowledge affected transmission-based teaching. Canbay and Beceren (2012) found that the type of institution where teachers work is not a strict factor that shapes their teaching approaches. Özdemir's (2020) study revealed that efficacy in student engagement could predict certain teaching styles, while efficacy in instructional strategies predicted other teaching styles. Heidari et al. (2012) revealed that teaching styles and self-efficacy of teachers were correlated significantly. Ketabi et al. (2014) found that most participants adopted traditional conceptions and that their traditional teaching/learning conceptions and some dimensions of epistemological beliefs were positively related. Tavakoli et al. (2015) and Sayed and Goudarz (2020) showed that Iranian EFL teachers had high perceptions of constructivist conception.

The literature review shows the relationship of epistemological beliefs, teaching/learning conceptions, and self-efficacy. For example, teachers who have sophisticated epistemological beliefs prefer constructivist teaching conceptions and this encourages them to use innovative teaching strategies, thus contributing to their self-efficacy (Chan & Elliot, 2004). Moreover, studies have also revealed that "innate ability" or "authority knowledge" can play a role in teachers' decisions whether to use traditional or constructivist teaching style (Zabihi & Khodabaksh, 2017). In addition, which conception of teaching to choose may affect teachers' self-efficacy. For example, Doğan (2020) found that teachers who chose constructivist conception had more self-efficacy in student engagement and instructional strategies. Therefore, emerging research may provide new perspectives on these constructs.

2. Method

2.1. Research Model

For the current study, a mixed method approach was employed. It is the most suitable design to use when the researcher seeks to build on the strengths of both qualitative and quantitative data (Creswell, 2009). Convergent parallel mixed methods design in which both qualitative and quantitative data was collected together, analyzed separately and compared to see the confirmation or disconfirmation of the results (Creswell, 2009) was used. For the quantitative part, this study is correlational research which aims to find out the pre-service and in-service EFL teachers' epistemological beliefs, teaching-learning conceptions and sense of self-efficacy, the relationship among these dimensions and the differences between pre-service and in-service EFL teachers' epistemological beliefs, teaching-learning conceptions, and sense of self-efficacy. According to Dörnyei (2007) "...the quantitative inquiry is systematic, rigorous, focused, and tightly controlled, involving precise measurement and producing reliable and replicable data that is generalizable to other contexts" (p. 34). In quantitative research, data collection procedures are based on numerical data, which requires the use of statistical methods. In terms of design, this is a descriptive study since it gives descriptive information about the pre-service and in-service EFL teachers' epistemological beliefs, teaching-learning conceptions, and sense of self-efficacy. Mackey and Gass (2005) state that the distribution of variables is given in a descriptive study without considering the existing cause and effect relationship among variables or other hypotheses.

2.2. Research Sample

Two groups were involved in the investigation. In the first group, the quantitative data was collected from 405 prospective teachers; however, after the estimation of missing value and extreme value analysis, 31 participants were not included in the analysis. Therefore, the first group consists of 374 4th grade students studying at the English Language Teaching departments of four state universities in Turkey. There were 80 males and 294 females with an age range of 20 to 40. Among those 374 participants, 42 pre-service teachers volunteered to answer the open-response questions. The development of epistemological beliefs, teaching learning conceptions and sense of self-efficacy is considered to be completed substantially before the end of four-year training during

which they receive training on content knowledge, pedagogical content knowledge and general pedagogical knowledge. In addition, data was collected towards the end of the spring term because prospective teachers have completed their practicum which gives them a chance to practice in the real school context.

The second group comprised 205 in-service teachers at the very beginning. Similarly, the number has changed after the estimation of missing data and extreme value analysis and 13 participants were not included in the analysis. As a result, 192 in-service teachers were left. There were 33 males and 154 females with an age range of 20 to 55. 19 of the 192 in-service teachers were volunteers to answer the open-response questions. 101 in-service teachers had 10 years or more experience, while 48 had 6 or more. Furthermore, 175 had a bachelor's degree, and 17 had a master's degree.

The samples were chosen based on the purposeful convenience sampling method (Büyüköztürk, 2019). This method can be used when it is hard to select a random or systematic non-random sample, so the researcher reaches a sample that is available and easy to reach (Fraenkel et al., 1993).

2.3. Data Collection Tools and Procedure

Data collection took place during the spring term of 2019-2020, following the necessary approvals from the universities and the Provincial Directorate of National Education. The pre-service teachers received pen and paper versions of the Epistemological Beliefs Questionnaire [EBQ], Teaching and Learning Conceptions Questionnaire [TLCQ], Teacher Sense of Efficacy Scale [TSES] in Turkish. Subject-matter experts with doctorates in English language teaching were available for consultation if needed. The researcher personally collected data from the in-service teachers in state schools under direct supervision. Immediately after the questionnaire administration, both pre-service and in-service teachers who volunteered to respond to the open-ended questions received the Open-Response Questions Form.

Basing on the 63-item Epistemological Belief Questionnaire designed by Schommer (1990), Chan and Elliott (2002, 2004) developed it with four sub-scales to apply in the Hong Kong context (Chan & Elliott, 2000): Innate/Fixed Ability, Learning Effort/Process, Authority/Expert Knowledge and Certainty Knowledge. They validated the scale with a sample of 385 Hong Kong teacher education students by means of confirmatory factor analysis (GFI = 0.93; AGFI = 0.93; RMSEA = 0.058), and they found the Cronbach Alpha coefficients that ranged from .60 to .70., which means the reliability of the four sub-scales was satisfactory and acceptable for research purposes (Chan, 2004). The internal consistency of the scale was found to be 0.89 (Chan & Elliott, 2004). The 30-item EBQ by (Chan & Elliot, 2002, 2004) was adapted by Aypay (2009) to be used in Turkish context and found the Confirmatory Factor Analysis [CFA] as NFI 0.64, CFI 0.77, and RMSEA 0.054. CFA results indicated that the factors structure of the instrument consisted of four factors of beliefs (Innate/ Fixed Ability, Learning Effort, Learning Process/Expert Knowledge, and Certainty Knowledge). The Cronbach Alpha reliability was found as .78. The EBQ uses a 5-point Likert-type scale ranging from (1) strongly disagree, to (5) strongly agree. The items related to sub-scales of the instrument consist of:

- (a) Learning Process/Expert Knowledge (4, 6, 8, 9, 10, 11, 12, 14, 20, 22, 29)
- (b) Innate/Fixed Ability (1, 18, 19, 21, 23, 24, 25, 30)
- (c) Learning Effort (2, 15, 16, 27, 28)
- (d) Certainty knowledge (2, 5, 7, 13, 17, 26)

Teaching and Learning Conceptions Questionnaire (TLCQ) was developed by Chan and Elliot (2004) using literature review and dialogues with students in class and before teaching practice, which gave the authors a good chance to review prospective teachers' concerns, thoughts and beliefs about teaching and learning. The questionnaire was developed after conducting pilot studies with repeated processes of factor analysis, item identification and interview. The questionnaire includes thirty items scored on a Likert scale of five points (1 = Never; 2 = Rarely;

3 = Sometimes; 4 = Often; 5 = Always) and measures two different conceptions of teaching and learning. The Cronbach alpha value of the whole scale was found to be 0.86 and the Confirmatory factor analysis results showed a good fit (GFI =0.93, AGFI = 0.91, RMSEA =0.54, RMR = 0.50).

Aypay (2011) adapted TLCQ for the Turkish context and measured the reliability of the questionnaire with Cronbach Alpha coefficient. The results of the Confirmatory Factor Analysis conducted to test the 30-item scale showed that there was a fit in the model (NFI 0.72, CFI 0.80., RMSEA 0.067). The overall reliability was found to be .71, and the sub-scale reliability was .88 for the Constructivist Conception and .83 for Traditional Conception. The items related to sub-scales of the instrument consist of:

- (a) Constructivist Conception (1, 3, 4, 6, 11, 15, 17, 19, 22, 25, 28, 30)
- (b) Traditional Conception (2, 5, 7, 8, 9, 10, 12, 13, 14, 16, 18, 20, 21, 23,24, 26, 27, 29)

Taking Bandura's (1998) scale as a base, Tschannen-Moran and Woolfolk Hoy (2001) developed the Teacher Sense of Efficacy Scale (TSES). It has both a long 24-item form and a 12-item short form. This research employed the 24-item long-form. The scale is composed of 24 items with three subscales having 8 items. The items related to sub-scales of the instrument consist of:

- (a) efficacy for student engagement (1, 2, 4, 6, 9, 12, 14, 22)
- (b) efficacy for instructional strategies (7, 10, 11, 17, 18, 20, 23, 24)
- (c) efficacy for classroom management (3, 5, 8, 13, 15, 16, 19, 21)

Analyses of both short and long forms indicated that TSES was reliable and valid for assessing teacher efficacy construct. Both versions were found to have high subscale reliabilities which range from 0.87 to 0.91 for longer version and 0.81 to 0.86 for shorter version. The internal consistency of the scale was reported to be .94 by Tschannen-Moran and Woolfolk-Hoy (2001) and .97 by Tsigilis et al. (2007), which they cross-validated using independent samples. The instrument's validity was also confirmed by Stewart et al. (2010). Çakıroğlu and Çakıroğlu (2002) conducted a study comparing pre-service elementary teachers' sense of efficacy beliefs in Turkey and USA to investigate the influence of distinctive features of cultures. The scale was adapted by Çapa et al. (2005) into the Turkish context. The original English version of the scale was translated into Turkish by qualified individuals who were proficient both in English and Turkish and who had been doing research on teacher efficacy for a long time. After this, they edited and reviewed the scale again. The final version of the scale was field-tested by four high school teachers in Turkey for linguistic clarity. The subscales of the scale were measured with CFA and Rasch measurement. At the end of the adaptation process, it was found that the coefficient alpha values for the Turkish pre-service teachers were .82 for SE, .86 for IS, and .84 for Covariance Matrix. The reliability of efficacy scores was .93. with all items contributing to the reliability with high item-total correlations. As the last step, the instrument was pilot tested with 97 pre-service teachers in an ELT program.

Baloğlu and Karadağ (2008) conducted a study and found out that the scale's translation validity findings were in line with the original English items. The Turkish translation of the scale was found to be matching up with its original English version. They also found out that The Turkish items' language and meaning validity average was found to be 9.62 out of 10. This means that the Turkish version of the scale is comprehensible. The scale uses a 9-point Likert-type scale ranging from 1=Nothing to 9= A Great Deal. In this study, the reduced form of the anchors with 5-point Likert-type (ranging from 1= Not efficient, 2= Very little efficient, 3= A little efficient, 4= Quite efficient and 5= Very efficient) used by Karakaş (2016) who has found that the scale with these anchors was also reliable (Alpha= 0.92) after the reliability analysis.

In order to strengthen the results of the present study, to get a deeper insight into the topic, and to support quantitative data via qualitative data, an open-response questions form was developed. According to Mack et al. (2005), qualitative research is "especially effective in obtaining culturally specific information about the values, opinions, behaviours, and social contexts of particular populations" (p. 1). With this aim, the researcher wanted to reach qualitative data about pre-service and in-service EFL teachers' epistemological beliefs, teaching-learning conceptions and

sense of self-efficacy. Open-response questions were designed by the researcher considering research purposes with the help of the relevant literature and experts from the field. The form consists of 9 questions which were written in Turkish and later translated verbatim.

All the participants were informed about the aim of the study, scales and the open-response questions form in detail. Among the 374 pre-service teachers who filled in the scales, 42 pre-service teachers voluntarily accepted to answer the open-response questions. 19 of the 192 in-service teachers were volunteers to answer the open-response questions.

2.4. Data Analysis

Descriptive statistical analysis was conducted to explore the epistemological beliefs, teaching-learning conceptions and sense of self-efficacy of pre-service and in-service EFL teachers, as well as to examine participants' demographic information and the normal distribution of the data set for subsequent analyses. An independent samples t-test was performed to compare the differences between pre-service and in-service EFL teachers, utilizing the SPSS 23 software for quantitative data analysis. For qualitative data analysis, a thematic analysis approach suggested by Braun and Clarke (2006) was employed for the analysis of the open-response questions. Throughout the analysis process, the researcher sought input from two colleagues who hold PhDs in English Language Teaching to ensure accuracy and validity (Huberman & Miles, 2002).

2.5. Ethical Considerations

Necessary permissions were obtained from the authors of the scales via email, and approvals were obtained from the universities. Participants' consent forms were obtained, assuring them of data confidentiality. Personal information was not collected.

3. Findings

3.1. Epistemological Beliefs of Pre-service EFL Teachers and In-service EFL Teachers

Table 1 presents the descriptive statistics and Table 2 the content analysis of the epistemological beliefs for both groups.

Table 1

Epistemological beliefs of pre-service and in-service EFL teachers

<i>Dimensions and Groups</i>	<i>N</i>	<i>Min</i>	<i>Max</i>	<i>Mean</i>	<i>SE</i>	<i>Mean (Likert scale)</i>
Learning process/Expert knowledge						
Pre-service	374	29.00	55.00	42.90	4.65	3.90
In-service	192	29.75	53.00	43.23	4.10	3.93
Innate-Fixed Ability						
Pre-service	374	8.00	34.00	20.54	4.76	2.56
In-service	192	11.00	35.00	21.90	4.68	2.73
Learning effort						
Pre-service	374	9.00	25.00	18.16	3.09	3.63
In-service	192	10.00	25.00	18.49	2.88	3.69
Certainty knowledge						
Pre-service	374	6.00	26.00	14.93	3.22	2.48
In-service	192	9.00	26.00	16.42	3.44	2.73

The mean score for Learning process/Expert knowledge was 42.90 (SD= 4.65) for pre-service teachers and 43.23 (SD= 4.10) for in-service teachers. Epistemological beliefs of both groups show some variation among the teachers; however, there is a small difference between the two groups. This indicates that they give similar importance to the learning process and questioning the information given by experts.

Table 2
Themes related to the epistemological beliefs

Themes and codes	Pre-service		In-service	
	N	%	N	%
Learning ability				
Inborn and can be developed after birth	19	46.3	13	68.4
Inborn	13	31.7	4	21.1
After birth	9	22	2	10.5
The importance of reaching information on your own				
Permanence	25	62.5	11	57.9
Usefulness	15	37.5	5	26.3
Creativity	0	0	2	10.5
Effort	0	0	1	5.3
Learning effort				
Requires a lot of effort	18	29.5	5	23.8
Depends on the topic	18	29.5	0	0
Depends on desire/interest	10	16.4	5	23.8
Depends on ability	9	14.8	8	38.1
Depends on the techniques used	3	4.9	2	9.5
Depends on readiness	3	4.9	1	4.8
Certainty knowledge				
Uncertain	32	78	14	73.7
Certain	9	22	5	26.3

The qualitative analysis provides further insights into how they perceive learning ability. A higher percentage of in-service teachers (68.4%) believed that learning ability is inborn and can be developed after birth compared to pre-service teachers (46.3%). However, a higher percentage of pre-service teachers (31.7%) believed that learning ability is solely inborn compared to in-service teachers (21.1%). The belief that learning ability is solely developed after birth was less prevalent among both groups. Since pre-service teachers are still students, they tend to believe in the influence of innate ability. The results show that in-service teachers have relatively more sophisticated beliefs in learning process/expert knowledge. In this sense, pre-service teacher 4 stated that "It is an inborn ability. People imitate the others around them and start to learn by repetition as of birth." Another participant, in-service teacher 13 asserted that "Most of the learning ability is inborn, but it can be developed after birth within the factors like family, environment and some others." As a final example, in-service teacher 5 highlighted that "Learning ability is gained after birth because if someone tries very hard, s/he can succeed in the courses that s/he has failed before."

Regarding Innate-Fixed Ability, in-service teachers have a slightly higher mean score (21.90; SD=4.68) than pre-service teachers (20.54; SD= 4.76). The beliefs of in-service teachers are relatively stronger in this dimension. The qualitative analysis reveals that both groups of teachers recognized the importance of reaching information on their own. The most prominent belief among pre-service teachers was related to the permanence of knowledge (62.5%), while in-service teachers also emphasized the importance of permanence (57.9%). The belief in the usefulness of reaching information on one's own was also prevalent among pre-service (37.5) and in-service (26.3), although to a lesser extent. In-service teachers also added the importance of creativity (10.5%) and effort (5.5%). For example, in-service teacher 4 stated that "When someone learns the information with her/his own effort, this information becomes permanent and life-long." Another participant, in-service teacher 13 highlighted that "Getting the information produced by the experts ends our creativity, so reaching the information on your own is more valuable".

There is relatively low variability of learning effort scores among the teachers, with mean scores of 18.16 (SD=3.09) for pre-service teachers and 18.49 (SD=2.88) for in-service teachers. Both groups

have similar beliefs regarding learning effort, which shows that they value the effort in learning and acquiring knowledge. The qualitative analysis indicates some differences between the groups regarding the prevalence of beliefs about learning. The most prevalent belief among pre-service teachers was the belief that learning requires a lot of effort (29.5%) and that it depends on the topic (29.5%). None of the in-service teachers mentioned the belief that learning depends on the topic (0%). Among in-service teachers, the most prevalent beliefs were the role of ability as a determining factor in learning effort (38.1%) compared to pre-service teachers (14.8), and that it depends on desire and interest (23.8% vs 16.4% for pre-service teachers). The role of techniques and readiness was the least prevalent ones. They have different beliefs, which indicate multiple factors influencing learning effort such as the level of effort, individual abilities, and commitment. For instance, pre-service teacher 19 asserted that "Learning theoretical and scientific things requires time and effort, but we can easily learn things to be used in our daily lives, so it depends on the topic." In another response, in-service teacher 19 stated that "If you have this specific ability to learn the verbal things for example, you learn them with little effort, so it depends on ability." Similarly, in-service teacher 5 asserted that "If the thing we will learn is among our interests, learning does not require a lot of effort."

Regarding Certainty knowledge, the mean scores are 14.93 (SD=3.22) for pre-service and 16.42 (SD=3.44) for in-service teachers. This indicates that both groups acknowledge that knowledge is not absolute or certain and that there is a degree of uncertainty. They are aware of the dynamic nature of knowledge. However, the beliefs of in-service teachers are slightly stronger. The qualitative analysis reveals that a significant majority of both pre-service (78%) and in-service (73.7%) teachers expressed uncertainty regarding certainty knowledge. However, a notable proportion of participants in both groups still held the belief that certain knowledge exists (22% for pre-service and 26.3% for in-service teachers). The participants held contrasting beliefs regarding the certainty of knowledge such as trust in science. For example, pre-service teacher 3 indicated that "I think it is certain because I always trust science and it can reach the knowledge by questioning." In a similar manner, pre-service teacher 10 asserted that "I do not believe in certainty knowledge because the universe is eternal and new things are being discovered every day, so the thesis can be refuted." Finally, in-service teacher 7 highlighted that "I believe in the certainty of knowledge; we can reach it by trial and error."

3.2. Teaching-learning Conceptions of Pre-service and In-service EFL Teachers

Table 3 presents the descriptive statistics and Table 4 presents the content analysis of teaching-learning conceptions of pre-service and in-service EFL teachers.

Table 3

Teaching-learning conceptions of pre-service and in-service EFL teachers

<i>Dimensions and Groups</i>	<i>N</i>	<i>Min</i>	<i>Max</i>	<i>Mean</i>	<i>SE</i>	<i>Mean (Likert scale)</i>
Constructivist conception						
Pre-service	374	36.63	60.00	53.26	5.21	4.43
In-service	192	37.00	60.00	52.32	4.85	4.36
Traditional conception						
Pre-service	374	18.00	73.00	41.70	9.89	2.30
In-service	192	19.00	69.00	45.61	10.21	2.53

On average, pre-service (M=53.26%, SD=5.21) and in-service EFL teachers (M=52.32%, SD=4.85) demonstrate a relatively high constructivist conception of teaching and learning. They seem to have a strong belief in learner-centered approaches and the active construction of knowledge through interaction and collaboration. However, there is a significant variability in the scores of traditional conceptions of teaching and learning within each group (M=41.70%, SD=9.89 for pre-

Table 4
Themes related to teaching-learning conceptions.

Themes and codes	Pre-service		In-service	
	N	%	N	%
Knowledge Constructed by Students				
Possible through interaction	36	87.8	14	73.7
Possible if guided well	5	12.2	5	26.3
Effectiveness of Transferring Information to Students				
Repetition and practice	22	55	12	63.2
Not enough for learning	12	30	4	21
Repetition	6	15	3	15.8

service EFL teachers and $M=45.61\%$, $SD=10.21$ for in-service EFL teachers. This suggests that they still have some teacher-centered and transmission-based views of education.

The qualitative analysis reveals that most pre-service teachers (87.8%) believed in the possibility of knowledge construction through interaction, while a slightly lower percentage of in-service teachers (73.7%) shared this belief. More in-service teachers (26.3%) than pre-service teachers (12.2%) believed in the construction of knowledge by students if they are guided well. This may suggest that pre-service teachers are more optimistic. In-service teachers cite factors such as education system, teachers' ability, and student readiness that affect knowledge construction. In this sense, in-service teacher 19 stated that "They can construct knowledge by learning from and helping each other. Each student has different intelligence types and perspectives, so they can complete each other with the guidance of the teacher." In addition, in-service teacher 14 asserted that "It can be constructed by the students, but it is very hard with our education system because of the inability of teachers, classroom environment and students' readiness level."

However, their views on information transfer provide contradictory results with their constructivist conceptions. Most in-service teachers (63.2%) and pre-service teachers (55%) believed that learning occurs with repetition and practice. Some believed that learning occurs with repetition only (15% for pre-service teachers and 15.8% for in-service teachers). While a significant portion of pre-service teachers (30%) expressed that transferring information alone is not enough for learning, a smaller percentage of in-service teachers (21%) shared this viewpoint. Pre-service teacher 41 stated that "Repetition and practice are not enough for learning. The students should be active in the learning process." As a final response, in-service teacher 19 asserted that "First of all, the information is not learnt but memorized when it is transferred. For this reason, instead of transferring, we should show the way to reach information and make the students use it."

3.3. Sense of Self-efficacy of Pre-service and In-service EFL Teachers

Table 5 presents the descriptive statistics and Table 6 presents the content analysis related to the sense of self-efficacy of pre-service and in-service EFL teachers.

Table 5
Pre-service and in-service EFL teachers' sense of self-efficacy

Dimensions and Groups	N	Min	Max	Mean	SE	Mean (Likert scale)
Efficacy for classroom management						
Pre-service	374	17.00	40.00	29.72	4.13	3.71
In-service	192	21.00	40.00	31.83	4.01	3.97
Efficacy for student engagement						
Pre-service	374	19.00	40.00	30.55	3.64	3.81
In-service	192	19.00	39.00	30.34	3.81	3.79
Efficacy for instructional strategies						
Pre-service	374	20.00	40.00	30.82	3.76	3.85
In-service	192	21.00	40.00	31.93	3.97	3.99

Table 6
Themes related to the sense of self-efficacy

Themes and codes	Pre-service		In-service	
	N	%	N	%
Classroom management				
Very successful	14	33.3	10	52.6
Moderately	15	35.7	8	42.1
Have some difficulties	13	31	1	5.2
Student engagement				
Very successful	26	61.9	12	63.1
Moderately	14	33.3	6	31.6
Have some difficulties	2	4.8	1	5.3
Use of instructional strategies				
Very successful	29	69	15	78.9
Moderately	11	26.2	3	15.8
Have some difficulties	2	4.8	1	5.3

On average, both the pre-service ($M=29.72$, $SD=4.13$) and in-service EFL teachers ($M=31.83$, $SD=4.01$) demonstrate a moderate level of self-efficacy in classroom management. In-service teachers have a slightly higher mean score. Despite this similarity, they reported a mix of success and failures in classroom management as the qualitative analysis reveals. A higher percentage of in-service teachers mentioned being very successful (52.6%) or moderately successful (42.1%) in classroom management compared to pre-service teachers (33.3% and 35.7%). In contrast, a higher percentage of pre-service teachers (31%) expressed having some difficulties in classroom management compared to in-service teachers (5.2%). This could indicate that in-service teachers have gained more experience. They may have developed more effective classroom management strategies over time. This may also be because pre-service teachers are still students and they do not have much experience in teaching except the practicum. The thematic analysis uncovered variations in their self-efficacy beliefs within and between the groups as can be seen in the following extracts. For example, pre-service teacher 8 stated that "I think that I am really good at classroom management. I try to learn the interests of problematic students, and I change the techniques that I use considering the individual differences." On the other hand, in-service teacher 17 asserted that "I can successfully manage by using a variety of activities. When I feel that they are getting bored, I change the activity and the classroom atmosphere as well." As a final example, in-service teacher 15 highlighted that "Since my classrooms are very crowded, I have difficulty to do this, and I give (-) and (+) to manage their behaviors."

In terms of student engagement, both groups also show a moderate level of self-efficacy, with a mean score of 30.55 ($SD=3.64$) for pre-service and a slightly lower mean score of 30.34 ($SD=3.81$) for in-service teachers. These teachers have some confidence in engaging the students in lessons. The qualitative analysis reveals that most in-service teachers (63.1%) and pre-service teachers (61.9%) mentioned being very successful in student engagement. Pre-service teachers, however, reported a higher percentage of moderate engagement (33.3%) than in-service teachers (31.6%). Additionally, a small percentage of pre-service teachers (4.8%) and in-service teachers (5.3%) expressed having various difficulties in student engagement, for instance, with students who have learned helplessness as in the following extracts. In-service teacher 16 stated that "I can effectively engage the students in the lesson. I try different techniques based on their interests and I communicate with parents to achieve student engagement." In-service teacher 16 indicated that "I believe that I can mostly attract their attention by using games in my lessons. But of course, it may not work all the time." As a final example, in-service teacher 19 pointed out that "Since the unsuccessful students have learned helplessness, it is not easy to achieve student engagement."

Regarding efficacy for instructional strategies, both groups show a moderate level of self-efficacy, with a mean score of 30.82 ($SD=3.76$) for pre-service and a slightly higher mean score of

31.93 (SD=3.97) for in-service teachers. However, the qualitative analysis reveals that the majority of participants in both groups mentioned being very successful in using instructional strategies, with a higher percentage among in-service teachers (78.9%) compared to pre-service teachers (69%). A smaller percentage of in-service teachers (15.8%) and pre-service teachers (26.2%) reported using instructional strategies moderately. Some in-service teachers (5.3%) expressed having difficulties using different instructional strategies, often due to crowded classrooms. This suggests that in-service teachers have more confidence and experience in implementing instructional strategies effectively. In this sense, pre-service teacher 22 stated that "I have some difficulties using different strategies. It requires a lot of effort." In-service teacher 19 asserted that "When I conduct my lessons in a traditional way, no one listens or participates, so I try to use various instructional strategies, and change them often." Another in-service teacher asserted that "I cannot use different instructional techniques because the classes are very crowded, and I mostly try to manage the classroom (In-service teacher 15)."

3.4. The Difference in Epistemological Beliefs, Teaching-learning Conceptions, and Sense of Self-efficacy

3.4.1. The difference in epistemological beliefs

The *t*-test analysis results of epistemological beliefs are given in Table 7. The table provides information on the sample size (N), mean, standard deviation (SD), *t*-value, and *p*-value.

Table 7

Difference between pre-service and in-service EFL teachers' epistemological beliefs

<i>Dimensions and Groups</i>	<i>N</i>	<i>Mean</i>	<i>SD</i>	<i>t</i>	<i>p</i>
Learning process/Expert knowledge					
Pre-service	374	42.90	4.65	-0.82	.415
In-service	192	43.23	4.10		
Innate-Fixed Ability					
Pre-service	374	20.54	4.76	-3.24	.001
In-service	192	21.90	4.68		
Learning effort					
Pre-service	374	18.16	3.09	-1.22	.221
In-service	192	18.49	2.88		
Certainty knowledge					
Pre-service	374	14.93	3.22	-5.07	.000
In-service	192	16.42	3.44		

The results revealed a significant difference in two dimensions of epistemological beliefs of pre-service and in-service EFL teachers, specifically, in their beliefs about innate-fixed ability ($t(564)=-3.24$, $p < .05$) and certainty knowledge ($t(564)=-5.07$, $p < .05$). In-service teachers (Mean=21.90) scored higher than pre-service teachers (Mean=20.54) in innate-fixed ability. These results suggest that the in-service teachers tend to have higher beliefs in innate-fixed ability compared to pre-service teachers. Similarly, in the dimension of certainty knowledge, in-service teachers (Mean=16.42) scored higher than pre-service teachers (Mean=14.93). In-service teachers tend to have higher beliefs in certainty knowledge than pre-service teachers. However, the results did not reveal a significant difference in their epistemological beliefs regarding the dimensions of learning process/expert knowledge ($t(564)=-0.82$, $p < .05$) and learning effort ($t(564)=-1.22$, $p < .05$). In other words, the beliefs regarding learning process/expert knowledge and learning effort in both groups are similar.

3.4.2. The difference in teaching-learning conceptions

Table 8 presents the difference in teaching-learning conceptions. The table provides information on the sample size (N), mean, standard deviation (SD), *t*-value, and *p*-value.

Table 8
The difference in teaching-learning conceptions

Dimensions and Groups	N	Mean	SD	t	p
Constructivist conception					
Pre-service	374	53.26	5.21	2.08	.038
In-service	192	52.32	4.85		
Traditional conception					
Pre-service	374	41.70	9.89	-4.40	.000
In-service	192	45.61	10.21		

A significant difference was found in the constructivist conception ($t(564)=2.08, p < .05$) and traditional conception ($t(564)=-4.40, p < .05$) of both groups. Regarding the constructivist conception, the mean score is 53.26 (SD=5.21) for pre-service teachers and 52.32 (SD=4.85) for in-service teachers. Pre-service teachers tend to have slightly higher scores in the constructivist conception. The mean score of traditional conception is 41.70 (SD=9.89) for pre-service teachers and 45.61 (SD=10.21) for in-service teachers. In-service teachers have higher scores (Mean=45.61) in the traditional conception compared to pre-service teachers (Mean=41.70).

3.4.3. The difference in sense of self-efficacy

Table 9 presents the difference between pre-service and in-service EFL teachers' sense of self-efficacy in three dimensions: efficacy for classroom management, efficacy for student engagement, and efficacy for instructional strategies. The table provides information on the sample size (N), mean, standard deviation (SD), *t*-value, and *p*-value.

Table 9
The difference in sense of self-efficacy

Dimensions and Groups	N	Mean	SD	t	p
Efficacy for classroom management					
Pre-service	374	29.72	4.13	-5.81	.000
In-service	192	31.83	4.01		
Efficacy for student engagement					
Pre-service	374	30.55	3.64	0.62	.536
In-service	192	30.34	3.81		
Efficacy for instructional strategies					
Pre-service	374	30.82	3.76	-3.29	.001
In-service	192	31.93	3.97		

The results show that there is a significant difference in efficacy for classroom management dimension ($t(564)=5.81, p < .05$) and efficacy for instructional strategies dimension ($t(564)=3.29, p < .05$). Pre-service teachers have lower scores (Mean=29.72; SD=4.13) in efficacy for classroom management than in-service teachers (Mean=31.83; SD=4.01). Pre-service teachers also have lower scores (Mean=30.82; SD=3.76) in efficacy for instructional strategies than in-service teachers (Mean=31.93; SD=3.97). Efficacy for student engagement did not differ significantly ($t(564)=-0.62, p < .05$). The mean score is 30.55 (SD=3.64) for pre-service teachers and 30.34 (SD=3.81) for in-service teachers.

4. Discussion

This comparative study aimed to explore the epistemological beliefs, teaching-learning conceptions, and sense of self-efficacy of pre-service and in-service EFL teachers. This study found that pre-service and in-service EFL teachers had relatively more sophisticated beliefs about Learning process/Expert knowledge and Learning effort. It was revealed that both groups valued knowledge acquisition and effort in learning, which can also be seen in the qualitative findings.

Their beliefs about Innate-Fixed Ability and Certainty knowledge were found to be moderate. They believed in innate abilities in language learning, and they also questioned the uncertainty of knowledge. Notably, in-service teachers showed slightly stronger beliefs in Innate-Fixed Ability and Certainty knowledge compared to pre-service teachers.

These findings align with studies that indicate pre-service teachers' beliefs in learning effort, uncertain knowledge (Yalçın, 2019), and sophisticated epistemological beliefs (Pan & Yelken, 2016). However, Kırmızı and Irgatoğlu (2021) found that pre-service EFL teachers do not believe that their abilities are fixed at birth and have doubts about whether scientists reach the truth if they try hard. The findings of Rakıcıoğlu's (2005) study present contrasting results to those of this study. Rakıcıoğlu (2005) argued that knowledge is certain, and that learning is quick and fixed at birth for pre-service EFL teachers. One possible reason for this discrepancy may be the difference in participant characteristics. Rakıcıoğlu (2005) conducted her study with pre-service teachers from all four grades, predominantly consisting of Freshman students, whereas the pre-service teachers in the current study are senior students. According to Perry (1970), King and Kitchener (1994), and Schommer (1990), students' epistemological beliefs get more sophisticated as they gain more diverse educational experiences and progress in their grade levels. Therefore, the seniority of the participants in this study may account for their more nuanced beliefs. Additionally, it's worth noting that Rakıcıoğlu (2005) employed a different measurement scale than the one used in the present study, which could contribute to variations in the results. Ketabi et al. (2014) also reported divergent findings that indicate pre-service EFL teachers predominantly hold beliefs in innate/fixed ability and certainty knowledge. The disparities in these results may stem from the limited autonomy that language teachers in Iran possess, which hinders their ability to make decisions and engage in activities such as classroom action research or reflective teaching (Ketabi et al., 2014).

Regarding the epistemological beliefs of in-service EFL teachers, the results also align with those of Öner (2019) and Soleimani (2020) but contradict with those of İsmail (2017), who found that in-service teachers hold naïve epistemological beliefs on "source of knowledge", "certainty of knowledge", "structure of knowledge" and "control of knowledge" dimensions, while they hold sophisticated beliefs in only "speed of knowledge acquisition" dimension. The reason can be differences in contexts, scales, and total number of participants.

In terms of teaching-learning conceptions, both groups demonstrated a relatively high constructivist conception. This suggests that teachers prefer learner-centered approaches and active construction of knowledge through interaction and collaboration. However, they demonstrate contradictory views regarding constructivist conception. Most pre-service and in-service teachers believed in the role of repetition and practice in learning while some believed that information transfer alone is not enough for learning. These are indicators of traditional conception. The reason for this contradiction can be the belief in theory but difference in practice (Çalışır-Gerem & Yangın-Ekşi, 2019; Farrell & Lim, 2005; Ng & Farrell, 2003; Uztosun, 2013).

The findings align with those of Yalçın (2019), Sarıçoban and Kırmızı (2021), Tavakoli et al. (2015), Zabihi and Khodabakhsh (2017), Mardiha and Alibakhshi (2020), Kaymakamoğlu (2017), Doğan (2020), Soleimani (2020), Öner (2019), Özdemir (2020) and Grasha (1996). However, Ketabi et al. (2014) found that pre-service EFL teachers in Iran preferred traditional teaching conceptions, which contradicts with the results of this study. Ketabi et al. (2014) state that the difference might result from the emphasis on preparing students for exams. The practicum experience of the participants in this study might have an impact on their beliefs.

In terms of self-efficacy, both groups demonstrated a moderate level of self-efficacy in classroom management, student engagement, and instructional strategies. Although they exhibited similar levels of self-efficacy, in-service teachers generally displayed slightly higher mean scores, indicating potentially greater confidence and experience in these areas. These findings align with those of Dağlıoğlu (2013), Dolgun (2016), Eslami and Fatahi (2008), Taşçı (2019), İlgör (2019), Yılmaz (2020), Taşer (2015), Can (2019), and Doğan (2020). The findings of pre-service

teachers are also in line with those of Sevimel and Subaşı (2018), who reported moderate level of perceived teacher efficacy.

The comparative analysis revealed some significant differences in terms of epistemological beliefs. The in-service teachers demonstrated higher beliefs in innate-fixed ability and certainty knowledge compared to pre-service teachers. These findings suggest that experienced teachers tend to place greater emphasis on the influence of inherent traits and the certainty of knowledge. However, no significant differences were found in the beliefs regarding learning process/expert knowledge and learning effort. This indicates similar perspectives in these dimensions between the two groups.

Regarding teaching-learning conceptions, a significant difference was found in the constructivist conception between the two groups, with in-service teachers holding slightly lower mean scores. This finding suggests that in-service teachers, although they endorse student-centered approaches, might still incorporate some traditional practices such as teacher-centered instruction and reliance on textbooks. The persistence of traditional conceptions among in-service teachers could be attributed to various factors, such as learning practice and teaching beliefs and methodology (Framanlu & Abdolmanafi-Rokni, 2014), institutional influences, classroom contexts, and personal teaching experiences. Nonetheless, both groups recognized the importance of constructivist approaches, which reflects a positive shift towards student-centered education.

This study found significant differences in efficacy for classroom management and efficacy for instructional strategies. In-service teachers reported higher mean scores in these two areas. The difference might be attributed to the practical experiences of in-service teachers, professional development opportunities, and the continuous refinement of their teaching skills. Nevertheless, both groups exhibited a moderate level of self-efficacy in managing classrooms, engaging students, and implementing instructional strategies effectively.

5. Limitations and Recommendations

The primary limitation of this study is that only four universities gave the permission to collect data although the researcher applied to seven universities with a permission request. Therefore, the number of universities the pre-service teacher participants attend is a limitation of the study. In forthcoming studies, more universities may be included to reach more generalizable results. As a second limitation, although the findings have been obtained from a variety of instruments, only one of them provided qualitative data. Including more qualitative data in future studies may provide deeper insight to the studies. Another limitation of the study is that this study focuses on perceptions and views of pre-service and in-service EFL teachers; however, the findings may not truly show what is actually happening in the classroom context, which may be illuminated by classroom observations. Finally, the instruments used in the study consisted of 84 items in total, 20 in Epistemological Beliefs Questionnaire, 30 in Teaching-Learning Conceptions Questionnaire and 24 Teachers' Sense of Efficacy Scale. This may be overcome by more precise instruments that will save time of the participants.

6. Conclusion

This study revealed that both groups had moderate epistemological beliefs about the learning process/expert knowledge. The study also reveals that pre-service and in-service teachers prefer a constructivist conception of teaching/learning. Moreover, they have a moderate self-efficacy in different dimensions of teaching. Some differences were found between pre-service and in-service teachers. Although they held traditional conceptions and differed in self-efficacy, their similarities outweigh their differences.

In teacher education programs, more importance could be given to activities that promote constructivist approaches and enhance self-efficacy beliefs of pre-service teachers. Furthermore, professional development can support in-service teachers in developing their constructivist practices and strengthening their self-efficacy in specific areas of teaching. The findings suggest

that teachers' beliefs about learning effort and certainty knowledge can influence their instructional practices. Teachers should be encouraged to create a supportive and motivating learning environment that acknowledges individual differences in learning abilities, emphasizes the value of effort, and promotes active student engagement because teacher quality is the most influential factor in determining students' success (Darling-Hammond, 2000). Adopting student-centered and inquiry-based pedagogical approaches can empower students to construct their own knowledge, develop problem-solving skills, and critically evaluate information. Adopting a relational pedagogy approach can help students to transform their naive epistemological beliefs to more sophisticated ones (Baxter-Magolda, 1996; Brownlee, 2004).

Further research is encouraged to explore additional factors that may influence these constructs and their impact on teaching practices. Future research can also focus on exploring the potential effects of interventions aimed at challenging fixed beliefs and fostering more constructive and student-centered epistemological orientations.

Acknowledgements: This article is based on a doctoral dissertation titled "Pre-Service and In-Service EFL Teachers' Epistemological Beliefs, Teaching-Learning Conceptions and Sense of Self-Efficacy". (10419977) [Doctoral dissertation, Çukurova University]. Council of Higher Education Thesis Center.

Author contributions: All authors have sufficiently contributed to the study and agreed with the results and conclusions.

Declaration of interest: There is no conflict of interest between the authors of the article. There is no ethics committee approval because this article was produced from the doctoral dissertation, which obtained all the necessary approvals before collecting the research data.

Funding: No funding source is reported for this study.

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