



Developing a phenomenographic argument for the exit-level prospective teachers' conceptions about teaching and learning

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Abstract. This study presents a phenomenographic argument regarding Turkish prospective teachers' (PTs) beliefs about teaching and learning that vary depending on their experiences. A phenomenographic research study was conducted to capture and interpret the PTs' documentations regarding the conception of instruction. The participants were 54 senior pre-service student teachers. Qualitative data were gathered through phenomenographic interviewing. The data were analysed interpretatively, and categories of description were derived to establish an outcome space for supporting the phenomenographic argument. The outcome space incorporates three hierarchical levels of the PTs' conceptions of teaching and learning: subject-centred teaching, individual-centred learning, and learner-centred teaching-learning. It turned out that the PTs held considerably conventional, idealistic teaching and learning conceptions. Moreover, there was a sharp distinction between the individual-centred and learner-centred conceptions of the participant PTs. Concrete recommendations for teacher preparation are offered to enhance the PTs' shallow conceptions of teaching and learning.

Keywords: Conceptions, teaching, learning, prospective teachers, phenomenography

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INTRODUCTION

The recent reform-based initiatives in Turkey have been grounded on the adaptation of the instructional philosophy favouring that students should engage in the co-construction of the knowledge through learner-centred teaching sequences. These include problem-based teaching, inquiry-based teaching, project-based teaching, or collaborative learning that incorporates teachers' voices in addition to the student-led voices (Akınoğlu, 2008; Aksit, 2007). However, the educational reform-based initiatives have not been readily acknowledged and put into practice by classroom teachers who have adopted knowledge transmission modes of teaching (Erdoğan et al., 2011; Grossman et al., 2007).

The same thorny issue is also valid for the PTs who will be prospective classroom teachers. To support that, PTs would need to possess *espoused theories* and *theories in action* to make sense of their transition during the reform-based attempts (Fullan, 2006). The PTs' espoused theories will always be partial or incomplete because they may not have the complete information regarding what actually happens in classrooms or the concrete actualities of the classrooms (Fullan, 2000; 2007; 2008). The theories in use may not therefore be put into action as PTs may have contextually influenced instructional realities (Fullan, 2006; 2007). Thus, one of the contextually regulated phenomena for PTs in shaping and estimating their future actions and pedagogical decision-making is their belief system about learning and teaching (Bryan, 2003; Pajares, 1992; Richardson, 1996; Watts & Richardson, 2011).

As known, students who enter teacher-training programs are frequently accompanied by a collection of a set of personal beliefs about what characterises influential teaching and learning (Bryan, 2003; Pajares, 1992; Richardson, 1996). Therefore, it is imperative that the teacher educators be knowledgeable about PTs' beliefs about teaching and learning in predicting their pedagogical decisions and accompanying actions that favour reform-based initiations (Bolhuis & Voeten, 2004; Murphy & Mason, 2006). This perspective is supported by this quote from Clark (1988; p. 7) written nearly three decades ago:

“Students begin teacher education programs with their own ideas and beliefs about what it takes to be a successful teacher. These preconceptions are formed from thousands of hours of observation of teachers, good and bad, over the previous fifteen or so years. Undoubtedly, students’ conceptions of teaching are incomplete, for they typically see and hear only the performance side of classroom teaching.”

Bearing this in mind, a thoughtful teacher educator might ask: “What are the preconceptions about teaching and learning held by our students?” (p. 7). This proposal of Clark (1988) for a sensitive teacher educator that takes the initially held beliefs of PTs into account is still serviceable and instrumental in relation to the recent implementation and maintenance of reform-based initiatives (de Vries, van de Grift, & Jansen 2014; OECD, 2009; Tondeur et al., 2008; Wall, 2016). In this study, capturing the beliefs of the PTs about teaching and learning is essential for several reasons. The PTs’ engagement in reform-based initiatives in the national context can be monitored and evaluated by considering their explanations (conceptions) and documentation regarding the fundamental concepts of education as teaching and learning. Thus, the PTs’ teaching and learning explanations and their breadth will be a multifocal indicator regarding the understanding and comprehension with regard to the learner-centred teaching of the teachers of the future.

Furthermore, having systematic information about the profoundness of the PTs’ conceptions about (reform-based) teaching and learning would offer an interrogation tool by which teacher educators’ instructional practices can be questioned by looking at their past in-class (university-based) practices and revealing the belief (concept) explanations of exit-level PTs (Berry, 2007; Korthagen, Loughran, & Lunenberg 2005; Loughran, 2006). Over several years, exit-level PTs have mostly experienced the performance side of instruction by watching the teacher educators. Thus, the PTs’ ideas about teaching and learning might be considerably influenced by the teachers who provided either uniform or varying instructional experiences which shaped the PTs (future) conceptions and associated practices regarding teaching and learning (Cochran-Smith, 2003; Goodwin & Kosnik 2013; Murray, 2005). In this context, the research question of the current study can be put forward as:

In which ways and to what extent were the PTs’ explanations and documentation of their beliefs about teaching and learning shaped through their university-based instructional experiences?

Within the context of the present study, the PTs’ externalisations pertaining to teaching and learning were captured mainly based on their experiences gained during university-levelled instruction. This might be the researchers’ purpose, but psychologically-oriented structures such as beliefs, pre-theories, prior beliefs, personal theories or conceptions of teaching and learning may also be fluctuated by earlier experiences with different schooling systems. The researchers of course acknowledged the explicit and implicit influences of the previously-held experiences of the PTs that were grasped during different learning trajectories such as elementary, middle school and secondary school level.

More importantly, as subjected to the researchers’ informal observations, even though the researchers posed the questions during interviews to mainly capture the PTs’ *university-oriented verbal thinking regarding teaching and learning*, as evidently presented, there were signs of the previous schooling experiences of the participants within their articulations. As mentioned above and elaborated in below sections, there may be close and fine-grained interrelations between the pedagogical beliefs and conceptions when it comes to capturing one’s verbal thinking about teaching and learning (Bryan, 2003; Pajares, 1992; Richardson, 1996; Watts & Richardson, 2011). Through engaging in schooling over 12 years before involving in university-based education, every individual who is exposed to school science, mathematics, literacy or history would gather a pool of conceptions or beliefs about the nature and structure of the teaching and learning phenomenon by operating and establishing personal or individualised pre-theories (Bryan, 2003). Thus, as accepted within the present study, even though it was aimed at delving into mainly university-determined conceptions of teaching and learning, technically and inherently, this would not be possible to isolate the PTs’ previously-determined or priorly-seated theories or

conceptions (from kindergarten to 12th grade) from the emergent ones that were thought to be modified or (re)structured with the exposure to the university-based teaching.

Theoretical Underpinnings

Beliefs as Conceptions about Teaching and Learning

Beliefs, regardless of whether they are pedagogically oriented, can be a very influential determinant in guiding, influencing and shaping a person's intentions for future actions (Watts & Richardson, 2011). Richardson (1996) proposed that "beliefs are thought of as psychologically-held understandings, premises or propositions about the world that are thought to be true" (p. 4). Construction of a belief about an idea, another person, or phenomenon, for instance, can be accepted as a self-evident activity requiring mostly subjective judgements of the constructor (Pajares 1992); thus, they may not require a general consensus among people (Bryan, 2003).

PTs also hold beliefs regarding their profession that can be depicted as their experience-based conceptions about instruction. Kagan (1992) suggested that the beliefs about instruction are latent and ambiguous constructions regarding how teaching, learning, learners and schools are experienced, and then conceptualised by PTs. The origins of the beliefs about instruction (teaching-learning) are substantially diverse incorporating individualised ways of experiencing phases first as students, then as candidate teachers and later as in-service teachers (Bolhuis & Voeten, 2004). In this study, the PTs' diversified conceptions about instruction were investigated. Murphy and Mason (2006) found that before becoming in-service teachers (at the exit level), PTs held mostly robust and deep-seated conceptions about teaching and learning gained over time and mainly incorporated the traces of their (standard-based) university education.

Within the instructional process, beliefs about teaching and learning can be discerned as teacher-centred vs. student-centred (Meirink et al., 2009). These two mutually exclusive belief categorisations can be labelled by different conceptions as: the transmission of knowledge by teacher vs. student learning (De Vries et al., 2014); traditional vs. process-oriented (Bolhuis & Voeten, 2004); traditional vs. constructivist (Tondeur et al., 2008), and reception-direct transmission vs. constructivist (OECD, 2009). It should be noted that even though scholars have asserted that teacher-centred and student-centred beliefs seem to be inherently contradictory, they are the two ends of the same scale (Becker & Riel 2000; Leavy, McSorley, & Boté, 2007), and there are other camps of scholars who advocate that both teacher-centred and student-centred beliefs have importance in teaching subjects (OECD, 2009).

To support this statement, a PTs' instructional efficiency can be illustrated by referring to the extent to which and how s/he is able to use both reception-direct transmission and constructivist teaching modes in relevant and combined ways (Kyriakides, Creemers, & Antoniou 2009; Lipowsky et al., 2009). Above-located studies' outcomes are also supported and expanded by the national studies. For instance, in the studies of Soysal, Radmard and Kutluca (2018), Kutluca, Soysal and Radmard (2018), Soysal and Radmard (2018a; 2018b) and Soysal and Radmard (2017), a generic claim was proved that PTs may still have more conventional teaching conceptions and beliefs.

In addition, in the related studies, it was found out that there may be close interrelations between teaching beliefs and in-class practices that can be altered by means of modifying PTs' initial beliefs about teaching (e.g., Çetin-Dindar, Kirbulut & Boz, 2014; Uzuntiryaki, Boz, Kirbulut & Bektaş, 2010). More importantly, with the aid of *interventional approaches* at the level of university-based teaching, the PTs' teaching beliefs may be qualitatively changed, modified or enriched (e.g., Soysal & Radmard, 2017; Soysal & Radmard, 2018a; 2018b).

A phenomenographic argument for the beliefs of the PTs about teaching-learning

There are diverse ways of capturing the beliefs of the PTs. Prominent examples thereof are interviews, classroom observations, written reflections or metaphorical imaginings of participants, and qualitative analysis of verbatim transcripts of gathered data to compose higher-

order categories (Saban, 2003; Soysal & Radmard, 2018a, 2018b). In the current study, for particular justifications, a phenomenographic approach was put into practice in investigating the experienced-based beliefs of the PTs about teaching-learning.

Phenomenography is a research method (Hasselgren & Beach 1997) by which a researcher can inquire into the conceptions of individuals who experience a phenomenon slightly, moderately or sharply in a different manner in comparison with others since the experience has always been partial. Individuals may experience or discern a particular aspect of a phenomenon at a given time and within a specific context (Marton, 1995; Marton & Svensson, 1979). The differentiation or discernment of a phenomenon (e.g. teaching and learning) relies on the breadth of the awareness of the person who has experienced the phenomenon. Frequencies or variations of a person's awareness regarding an aspect of the phenomenon display a *potential for variation* (Marton & Booth, 1997). However, lowering the awareness of a person about the phenomenon demonstrates *the potential for uniformity* that implies that they have not had sufficient experience concerning the different aspects of that phenomenon (Marton, 1986; Marton & Booth, 1997).

Each analytical aspect of the way of experiencing a phenomenon confirms the existence of a larger whole (Marton, 1981). This can be coined as the collective sum of the ways of experiencing. Whole ways of experiencing are normally attached to each other since they are registered for the same phenomenon. Whole ways of experiencing, therefore, are structurally related and attached, which indicates a part-whole relation (Marton, 1986; Marton & Booth, 1997). Varying ways of experiencing the same phenomenon signal an inclusivity of the awareness of the experiencer. Once the inclusivity of awareness is increased, a person can perceive rather sophisticated aspects of the phenomenon being experienced. On the other hand, a decrease in the frequencies of the discerned aspects of the phenomenon confines its variation into a taken-for-granted context (Marton & Booth, 1997).

In the context of this study, learner-centred teaching can be accepted as incorporating incremental frequencies of the aspects of instructional experiences that are expected to be discerned as potentially varying (Marton & Booth, 1997). Learner-centred teaching can, therefore, be considered as pedagogically multifaceted. Learner-centred teaching has not been acknowledged as taken for granted as in teacher-centred teaching in which there may be reducing ranges of experiences of teaching-learning that have not yet discerned and presented as *non-potentially varying* ways of experiencing (Marton & Booth, 1997). Furthermore, this does not suggest that a teacher-centred teacher's ways of experiencing instruction are wrong; rather, their conceptions of instruction are incomplete (Åkerlind, 2008). A teacher-centred teacher candidate may have been suffering from a lack of sufficient awareness of the enlarged or breadth aspects of the teaching-learning phenomenon that can be expressed in a more sophisticated manner by a learner-centred teacher candidate (Åkerlind, 2003; 2004; 2007; 2008).

In this study, the authors have tried to establish a phenomenographic argument (Åkerlind, 2008) by virtue of revealing the breadth of the beliefs of the PTs about teaching-learning. The generic phenomenographic argument implies that the developing conceptions of PTs or teachers can be considered as either teacher-centred or learner-centred (Martin & Balla, 1991; Martin & Ramsden, 1992; Prosser & Trigwell 1999). As given above, a PT who has a teacher-centred pedagogical tendency would present a narrower description of the teaching-learning phenomenon (Åkerlind 2003). The variations for teacher-centred teaching conception would consider that there is only one primary knower in the classroom and knowledge is distributed/disseminated from the primary knower (teacher) to the less knowledgeable others (students). Thus, when the teaching-learning process includes just telling and transmitting prescribed truths to the students, unexpected events as deviations from teacher's agenda are not possible since teacher's voice is accepted as the dominating and determining one.

For the learner-centred case, teachers may be conceived as class members who welcome other members' intellectual contributions to the phenomenon under consideration. When embracing the legitimacy of the offerings of the other class members, the instruction has to be less structured in order to be more open-ended because when student-led utterances concerning their intellectual contributions are taken into account, this would lead to several classroom

incidents, which would disrupt the teacher's pedagogical planning and actions. Thus, it is likely that the learner-centred teaching conception will incorporate anticipated (structural) and unexpected (emergent) streaming related to the utterances and contributions of both sides. Thus, teacher-centred PTs' conceptions would merely reflect the teacher's utterances, but learner-centred PTs' ways of experiencing would include the teacher's voice in addition to the students' voices (Åkerlind, 2008; Soysal & Radmard, 2018a). The co-existence of the voices allows for more enlarged and enriched teaching-learning experiences that can shape the belief orientation of the teacher candidates.

In a phenomenographic sense, if a teacher candidate has held a teacher-centred collective sum of experiences, s/he would create teaching-learning descriptions in a narrower sense. This clarifies that s/he sees or experiences the teaching-learning phenomenon in a more simplistic and linear way. This may also confirm that the variations in his or her teaching-learning experiences may not be fruitful or enriched. On the other hand, a learner-centred teacher candidate may compose broader conceptions assisted by involvement in varied teaching-learning experiences. This would indicate that s/he comprehends the teaching-learning phenomenon as rather sophisticated and multifaceted in contrast to a person who holds a set of more statically oriented teacher-centred beliefs. Thus, in the current study, by establishing the phenomenographic arguments based on the data, the authors have tried to estimate the complexity or simplicity of the conceptions of the PTs to estimate whether they had been well-prepared for the core requirements of the reform-based initiations which favour a learner-centred teaching-learning philosophy.

The lack of phenomenographic understanding in Turkish qualitative research context and the contribution of the current study

In this study, when making search for the national studies by virtue of phenomenographic approach, a huge theoretical and practical gap and miscomprehension regarding this invaluable thinking tool (phenomenographic reasoning) was noticed. As a crucial note, within the national/Turkish context, no studies that have been dedicated to the thorough analysis of the PTs' belief-related conceptions regarding teaching and/or learning by applying an authentic or true phenomenographic analysis were found. This has been the theoretical gap within the national literature that has been handled in the present study. More importantly, the national studies incorporating the term "phenomenography" within their keyword list were mostly devoted to simply explicate or describe what phenomenography is or how it is used in a qualitative research (e.g., Çekmez, Yıldız & Bütüner, 2012). In addition, within several studies, the aim and scope of phenomenographic approach was considerably *misunderstood* and *misused* (e.g., Genç, Demirkaya & Karasakal, 2010; Melanlıoğlu, 2012).

In only one study, conducted by Aksakallı (2019), a *shallow* phenomenographic analysis was attained. To clarify, Aksakallı (2019) did not have a tendency to locate *hierarchical categories of description* and *outcome space*. In the study of Aksakallı (2019) or any other national studies incorporating phenomenographic approach, whilst the data analysis and outcomes would be acknowledgeable for generic qualitative tenets, for the sake of phenomenographic thinking, we feel that the analysis has not been taken far enough. In none of the studies, Turkish scholars did not show structural relations in awareness between the different categories of description and the subcategories within each larger category.

Furthermore, as we identified, there are too many *non-hierarchical* relations that fully challenge phenomenography's theoretical assumption of awareness, the methodological aim of stripped and parsimonious descriptions. We have often noticed that within the national studies, unfortunately, *non-phenomenographers* challenged the assumption of a *hierarchy of expanding awareness* and claimed that there were no inclusive hierarchies in their data. We are of the idea that *novice phenomenographers* or *non-phenomenographers* also often have difficulty constituting the categories in a way that highlights inclusivity.

Our experience is that this is all a matter of how one (e.g. a Turkish qualitative researcher) looks at the data. In this study, we initially created a complex set of alternating *horizontal* and

hierarchical structural relations for the outcome space (see details within “Findings” section) unlike the other Turkish scholars had. Our initial analysis took about five months; the further analysis to eliminate the horizontal relations and arrive at hierarchical relations took another six months. We therefore try to mention that *achieving a hierarchy* is not about forcing the data to fit into a certain structure, but about further sophisticated analysis that was not found in any national study except for the present one.

Our position includes specific argumentations to invite Turkish qualitative researchers to take a more serious position in phenomenographic reasoning and interpretation that were evidently taken in this study. *As a note, we do not desire to underestimate the invaluable efforts of Turkish qualitative researchers favouring a qualitative research paradigm in general and phenomenographic style in particular. Instead, we, as Turkish scholars, try to make the aforesaid misunderstanding/misusing pertaining to the phenomenographic reasoning visible and concrete for any methodological enhancement within Turkish qualitative research culture.*

First, it must be kept in mind that “categories of description” must represent a *stripped description of a conception that is considered or featured* and that represents variation in awareness of only the *critical aspects* of the phenomenon. There should be much variation in awareness of the phenomenon present in any phenomenographic data that represent non-critical aspects. The determination of what critical or non-critical variation in awareness is is very much up to the analysis of the Turkish researchers – *but must be surely justified in the data*. As a whole, to achieve an inclusive hierarchy, Turkish researchers must often give up emphasising a variation in awareness. As a whole, it can be claimed that this study may be a triggering prototype for further national studies that are thought to incorporate *authentic* phenomenographic analyses.

METHODS

Research Programme

The purpose of this study was to reveal the manifold nature of the teaching-learning conceptions of the PTs which are considered to be embedded in their belief expositions; thus, the research method of phenomenography was applied. For the current study, the purpose of undertaking phenomenographic research (PR) was to examine the variations in the PTs’ ways of experiencing regarding teaching-learning (Marton, 1981). By undertaking PR, the authors aimed to grasp and document the conceptions of the PTs based on the diversifying breadth of their awareness on the teaching-learning phenomenon (Marton & Booth, 1997).

In this study, teaching-learning was considered as a phenomenon being experienced that was “the thing as appears to us” (Marton 2000; p. 105). In advance, it was considered that every teacher candidate participating in the current study might hold unique instructional experiences mostly based on their university-based teaching and this might lead them to conceive the phenomenon under research as slightly, moderately or sharply qualitatively different compared with their peers (Marton, 1981; 1986). During the university-based teaching, it was presumed that the PTs might have developed diversified ways of experiencing that would guide the researchers to contrast and compare their conceptions in terms of the richness of the witnessed instructional events, cases, incidents or shallowness of the facets of the experiences of the same group of PTs (Marton & Pong, 2005).

Participants

The participants were 54 senior students (Females = 39; Males= 15) enrolled in a university located in the Marmara Region in the northwest of Turkey. The participants were in their senior year. The participants’ ages ranged from 23 to 29 years (M = 24.6; SD = 1.9). Most of the participants had resided outside the region where the university was located. The PTs came from diverse socio-cultural and socio-economic statuses, and either received a scholarship based on the degree of nation-wide examinations’ results or paid an instruction fee completely.

The sample comprised prospective classroom teachers (n = 10), Turkish Language teaching teachers (n = 9), English language teaching teachers (n = 6), elementary and middle school science teachers (n = 21) and elementary mathematics teachers (n = 8). As observed informally, the participants were truly volunteer and eager to document their conceptions of teaching and learning. The PTs had completed many on-site theoretical courses supported by on-site practicum courses. Most of the courses taken by the PTs were narratively oriented. Possible modifications in the streaming of the courses in a more practical and applied manner were dependent on the instructional choices of the teacher educators.

Data Collection

Semi-structured interviews were administered to gather the conceptions of the PTs (Booth, 1997) through a prepared and validated interview protocol. Interviewing is considered as one of the best ways of probing and eliciting the comprehension of participants within phenomenographic studies (Booth, 1997). Previously structured questions were used as conversation openers to probe the responses provided by the participants. Interview protocol incorporates 12 main questions accompanied by several sub-questions or probing questions. Sample interview questions are listed below.

Before interviewing, we conducted a pilot study to detect whether main questions and probes are instrumental in grasping the PTs' documentations of teaching and learning. The pilot study was completed by capturing three PTs' articulations based on the questions we posed. As inferred during the pilot data gathering process, the PTs did not have a tendency to isolate the teaching phenomenon from learning phenomenon when uttering their conceptions regarding them. Thus, by carefully taking the flow of the responses into account, teaching and learning phenomenon were intentionally inserted into the questions in a combined and pragmatic manner to grasp more verbalised data from the PTs.

- (1) What do you mean by learning/teaching? Could you explain, please?
- (2) Could you tell me about a process, case, incident or any other moment that you refer to as an example of "learning" (or ...as an instance of "teaching")?
- (3) Could you provide a specific example of your own learning when a teacher educator was teaching your class?
- (4) In your opinion, how would your students learn (acquire, comprehend, understand) the topic when you are teaching?

First, in addition to the authors, six research assistants (PhD candidates) were trained to support the authors during intensive data collection. The interviewees and interviewers came together in a meeting room, and one of the authors explained the purposes of the current research and data collection processes through a 20-minute presentation. As aforesaid, during the pilot study, all research community (we as researchers and supporting research assistants) had chances to experience data collection processes in-depth.

Besides, the supporting research assistants worked in collaboration with the expert researchers in the field, mostly favouring the qualitative research paradigm. There was a cognitive apprenticeship between us and the supporting assistant contributing to their generic research skills, capabilities and capacities. Consent forms were then delivered to and signed by the PTs. Previously allocated offices were used to conduct the interviews which lasted from 35 to 50 minutes. The authors previously organised the order of the interviews, places, timings and any other technical facilities (high-quality voice recorders) in order to ensure the smoother operation of the interviews. Data collection was undertaken over four days within the same week from Monday to Thursday (workdays). To ensure that as much information as possible was gained from interviewees, the interviewers took care to allow each PT enough time to consider the question and to respond in as much detail as they wished. There was no intention to judge or evaluate the interviewees' responses. The control of the conversation flowed from the interviewers to the interviewees and vice versa.

Data Analysis

Important concepts of phenomenographic research informed the streaming of the data analysis procedures as: conceptions or ways of experiencing, categories of descriptions and outcome space. Conceptions (ways of experiencing) were the analytical expressions, explanations or documentation of the PTs regarding their beliefs about teaching-learning. The conceptions of the PTs regarding teaching and/or learning were considered as their abstractions from their reality. These could therefore be formulated in diversified ways that depended upon the contexts of the realities that were the provided or facilitated instructional activities in which they engaged during their university-based teaching. Thus, the authors triggered the first phase of the analysis by differentiating each of the conceptions of teaching-learning uttered by the PTs. Extracting the conceptions of the PTs was more possible when their “utterances found to be of interest for the question being investigated are selected and marked” (Marton, 1986, p. 42).

For a rigorous differentiation, selected and marked conceptions of the PTs were continuously compared and contrasted to reach a consensus regarding whether they presented similar or divergent aspects of the phenomenon. First, most of the articulated and featured conceptions of the PTs were detected, and these were the PTs’ main utterances that disclosed their conceptions. Then, the participants established additional conceptions around the main idea(s) that were prominent compared to the less remarkable ideas. Furthermore, for this differentiation, the positions of the utterances within the flow of the interviewees’ transcripts were also considered to reveal whether they attached importance to them. Thus, within the transcripts, intentional focusing or zooming in on specific parts of the utterances was strictly noted. This is because emphasized utterances were considered as more valuable from the perspective of the PTs. Overall, the authors utilised the three tips for the differentiation procedures (frequency, position, pregnancy) proposed by Sjostrom and Dahlgren (2002).

When a phenomenographer labels all analytical aspects of conceptions of an individual for a phenomenon by means of pools of meanings, s/he composes categories of description. In the current study, the categories of description incorporated all detected characteristics of the phenomenon from the PTs’ language that clarified the diversified core meanings of the selected conception. The derived categories of description depicted the differences and the communalities in meanings and reflected the frequencies of qualitatively distinctive aspects of the phenomenon under examination (Marton, 1981; 1986).

Composing the categories of description, therefore, constituted the second phase of the analysis, in which several categories of description were abstracted. Similar to the constant comparison of the provided ways of experiencing, categories of description were also consistently compared and contrasted through the process of exploring all emerged categories of description.

Finally, the researchers tried to establish an outcome space by taking the emerged categories of description into account. For the current study, the outcome space was a data-driven diagrammatic representation displaying the logical, theoretical and empirical orders or hierarchies within the detected categories of description (Marton 1986). Marton (1981) stated that an outcome space can be conceived as a system of conceptual order as in the form of the PTs’ “collective intellect” regarding their beliefs about teaching-learning (p. 198). In the current study, a collective intellect or outcome space was designed as a mapping system of the “qualitatively different ways in which people experience, conceptualize, perceive, and understand various aspects of, and phenomena in, the world around them” (Marton, 1986, p. 31).

The authors obtained several categories of description; however, as recommended, the outcome space of the study was frugally composed to contain three broader orders of conceptions (Sjostrom & Dahlgren, 2002). The outcome space consisted of the logical relationships among the categories of description based on the research purposes of the current study (Marton, 1986). The categories of description that were revealed consisted of either equal value or were sequential (hierarchical). The authors, therefore, ordered the categories of description in the form of x that was seen something y in the sense of the language of the PTs.

Trustworthiness of the study

In this study, there was only a source of qualitative data, complementary and compensatory validity standards were taken in order to enhance the reliability of the data collection, analysis and interpretation processes. At the outset, our colleagues supported the study by playing devil's advocate role in operating their external audit roles (Lincoln & Guba, 1985). To put it in a different way, during data collection, analysis and interpretation procedures, our colleagues who were external to the study tried to challenge the extracted categories of description or outcome space's structure that are considerably significant in showing a phenomenographic research's validity. This was a continuous procedure by which external audits engaged in the study and showed us how we had unconsciously *over-interpreted* or *over-generalised* our findings. This process was essential for the crystallisation of the study findings as our colleagues tended to lead us to be more objective pertaining to representing or abstracting conceptual themes that were uncovered through in-depth phenomenographic analysis.

Second, methodological triangulation was conducted (Miles & Huberman, 1994) in which both an in-depth qualitative analysis and phenomenographic thinking were treated for the same qualitative data to triangulate the methods of analysis (Patton, 1980). In a sense, this study was not designed as a basic qualitative research. To our knowledge, within a basic qualitative research, gathered data were analysed through specific stages as open-coding, axial-coding and selective-coding (Lincoln & Guba, 1985). Due to limited data source, we had no chance to operate a selective coding procedure, however, we executed a fine-grained phenomenographic analysis by continuously juxtaposing, comparing and contrasting data pool with itself. Then, a data-based and saturated system was attained through the collective efforts of our colleagues who were able to see and analyse the social phenomenon under investigation phenomenographically.

RESULTS

This study aimed to develop a phenomenographic argument about the beliefs of the PTs by investigating the variation and fruitfulness within their conceptions or breadth of their ways of gaining experiences. After a fine-grained phenomenographic analysis, an outcome space was established (Table 1).

As shown in the outcome space (Table 1), there are three levels of the understanding of the PTs. All levels of the outcome space stored several categories of descriptions which were derived from the pool of meanings covering the particular conceptions of the PTs. There was both a linear and hierarchical structural relation between the categories that emerged from the descriptions. The hierarchical order between the levels defines a broader comprehension regarding the phenomenon under research. For instance, Level 2 covers the aspects represented within Level 1 that does not encapsulate the aspects represented in Level 2.

For each level, there were categories of description, and in each level, there were categories of description dominating the thematic scope of that level. Thus, less dominant categories of description were located under the featured categories of description that are (displayed in bold in Table 1). In other words, the prominent categories of description within each level were characterised through the less featured categories of description.

For Level 1, there were 11 categories of description that alluded to subject-centred teaching. Five categories were extracted to Level 2 and labelled as individual-centred learning. Three categories consisting of learner-centred teaching-learning conceptions were derived for Level 3. Thus, most of the derived categories of description were accumulated around Level 1 (58%) compared to other distinctive conceptions (Level 2: 26% and Level 3: 16%). On the initial interpretation, the PTs seemed to have experiences related to the diverse aspects of the subject-centred teaching.

An important note based on the language of the participants is that Level 1 included *only the teacher* for the instruction whereas Level 2 incorporated only the *student* or *individual* for teaching-learning. Level 3 indicated that there were collective meanings making experiences by virtue of the sequences of the social negotiation of meanings in the presence of the discursive

scaffolding of the more knowledgeable members of the learning groups. In other words, Level 3 consisted of both teacher and learner for the instruction from the lens of the PTs.

Table 1. *Outcome space*

<i>Conceptual hierarchy</i>	<i>Categories of descriptions</i>	<i>f</i>	<i>%</i>
	<i>Altering in thinking and talking</i>	4	40
<i>LEVEL-3: Learner-centred teaching-learning</i>	... by engaging in argumentative and dialogical instructional contexts	4	40
	... through ensuring making the conceptual conflicts of learners public to negotiate them	2	20
	<i>TOTALS</i>	10	100
		<i>f</i>	<i>%</i>
	<i>Learning through self-activity</i>	18	62
<i>LEVEL-2: Individual-centred learning</i>	... depending upon the varying needs of the students	2	6,9
	... as maintained life-long	1	3,5
	... by virtue of the created or provided self-discovery moments	3	10,4
	... in the presence of the jointed past or present experiences	5	17,2
	<i>TOTALS</i>	29	100
		<i>f</i>	<i>%</i>
	<i>Permanent changes in the behaviours of the individuals through direct instruction</i>	68	59,2
<i>LEVEL-1: Subject-centred teaching</i>	...by virtue of physical maturation	3	2,6
	...through interacting with the social environment	8	7
	...as maintained life-long	5	4,2
	...requiring practice and drill	4	3,5
	...attaching to cognitive and emotional entities of a person	3	2,6
	...incorporating real-life applications	9	7,9
	...by means of explicit experiences	7	6,1
	...as a result of adaptation to the environment	4	3,5
	...necessitating explicit reinforcement	2	1,7
	...entailing one-to-one interaction	2	1,7
	<i>TOTALS</i>	115	100

LEVEL 1: Subject-centred learning

This level indicates that the form of instruction may bring about a permanent change in the behaviours of the individuals mostly through direct instruction. The long-lasting traces of direct instruction on the individuals' behaviours can be possible by virtue of the process of physical maturation over the period of the timewhen s/he interacts with her/his environment. Permanent behaviour change can be maintained over the person's whole life which necessitates countless drill-practice or real-life applications including explicit experiences. This permanent behaviour changing in the course of learning a phenomenon may be attached to the cognitive and emotional entities of an individual who is in need of explicit reinforcement for the continuity of the learned or changed behaviours. Furthermore, by engaging in one-to-one interaction with more knowledgeable others, an individual may accommodate their behaviours and changes for the requirements of the social and physical environment in which they inhabit.

During an individual's life, learning takes place as a result of the interactions with a person or environment. It must give rise to the permanent changes in his or her behaviours. I mean this [learning] can be mutual one. So, two people can learn from each other. But someone who is a scholar can teach one thing to another. It [learning] can be through reading a book, talking to a person, or interacting with others.

For instance, one participant (above-located excerpt) presented a personal definition of learning by directly referring to the permanent changes of the behaviours when a learner

interacts with his or her environment. The interaction can be internally or externally oriented. The verbal or social interactions can be reciprocal, and one person can learn from one another. More importantly, when learning occurs, there must be a more knowledgeable person who can manage and handle the teaching of the less knowledgeable others. According to the participant, knowledge is something that is conveyed or delivered from one person to another similar person like a chemical diffusion procedure depicted as the transmission of particular substances from an ample source to a limited one. This participant also described the sources of the knowledge such as textbooks or other more knowledgeable members; thus, her experiences seemed to place knowledge as an entity that is external to the learner. This means that once knowledge is external to a learner, s/he can be considered as the consumer of the knowledge instead of the producer or constructor.

Learning is a permanent behavioural change. If anyone applies acquired information into daily life, this ensures learning. For example, if a pupil uses addition while s/he is shopping in the market, this displays a learning I mean, at first, we grasp the knowledge... From teachers, my mother, my father, my sister... Then, we put into practice effectively for our lives. That's how learning happens. It's like being theoretical and practical. We are given theories from others, and when its time comes, we should apply it.

Another participant (above-located excerpt) mentioned the same learning style as permanent changes to an individual's behaviours. According to her, learning tends to be mostly attained when a person is able to create real-life applications through previously acquired knowledge. She provided a typical instance regarding how the real-life applications are performed through the acquired knowledge. She talked about learning mathematical knowledge that had been previously taught in her elementary school years by calculating the remaining money during a shopping trip using her experiences of numerical calculations. In the following explanations, she seemed to portray a transmission mode of teaching factual knowledge from external knowledge sources to people. She listed the external sources of knowledge as the more knowledgeable people (e.g. teachers and parents). Once a person acquires knowledge from more knowledgeable others, s/he could utilise it. She explained a person's process of learning in a similar way to theory-practice integration. She also focused on the idea that when a person imports theory from a teacher, s/he may use the obtained theories in the form of real-life applications.

Overall, there are two prominent points. First, it seemed that there was no deeper awareness or consciousness within the ways of experiences of most of the PTs pertaining to teaching-learning phenomena. Most of the PTs referred only to the teachers or more knowledgeable others, ignoring the existences of the other voices such as the learners. Secondly, there were ample categories of description for subject-centred teaching. In other words, most of the PTs were able to provide elaborate and in-depth examples of the direct transmission modes of instruction. Namely, it seemed that most of the PTs were guided to experience knowledge transmission modes of instruction during their university-based teaching. Therefore, they were knowledgeable and held a breadth of awareness regarding how the facts and truths are conveyed to students.

LEVEL 2: Individual-Centred Learning

In this level of categorising, the PTs approached teaching-learning in a qualitatively distinctive way. In addition to the delivering content to people, in this level, some of the PTs were also able to express their own experiences implying the existence of the learners and their active roles and responsibilities in the course of learning process. As displayed in the outcome space, since learning hinges on the learners, their varying needs should be considered and included when planning, designing and implementing teaching activities. There should be individual-led revelation moments for individualised learning to permit learners to engage in self-discovery. In

addition, from the lens of the PTs, if an individual's existing conceptual schema and newly introduced concepts were accommodated and associated in an instrumental sense, the learning processes would be more facilitating. An example of this perception can be seen in the extract from one of the PTs (see also below-located excerpt).

For many years, most of the students in Turkey have been caged within an instructional life which has been teacher-centred. The subjects are always directly transferred to us... But I do not think it should be like this. There is learning in student-centred approach. While teachers play an active role in teacher-centred approach, students play an active role in student-centred approach. For me, the learners must be the foci instead of the teachers. Thus, actual learning would eventually take place. I mean, in my opinion, teaching is related to the learners. Because s/he [the student] is the one who is already learning... I think that learning is about learners and once they are active, it [learning] occurs. Students would therefore learn content not only theoretically but also practically and actively. I know that, during active learning, students will have opportunity to put their ideas on the problems and apply their ideas that can be exchanged in group works.

This participant PT firstly criticises in-class implementations as the reflections of the existing educational policies that have been enacted in the national context that he coined as imposed teacher-centred approaches. He defined teacher-centred teaching as a way of conveying facts to learners. He indicated his experiences concerning how his previous teachers or present university-based scholars directly delivered the content that he and the other students had to receive.

He presented a sharply divergent conceptualisation of teacher-centred and learner-centred teaching. He simply made a categorisation of the teaching approaches implying that teacher-centred phenomenon includes only the teacher, or *the teaching* and learner-centred phenomenon covers only the student or *the learning*. He attributed teachers as the active people within teacher-centred teaching processes whereas students are defined as passive recipients. Moreover, within learner-centred teaching, students are considered as the active participants or organismic producers of the knowledge claims whereas teachers are the less passive members.

This PT reinforced his idea by referring to the focus point of what happens in the classroom in that learning or teaching is more about learners rather than teachers. Thus, learners must be centralised and became the focal point. He strongly advocated the idea that the job of teaching is more related to the students instead of teachers and their pedagogical actions. He clarified his idea by attributing to a learner, the role of the owner or the person that undertakes the job of learning. He continued to explain that learning is associated with learners and once learners are triggered to learn, their acquisition of the content is ensured. He also commented that self-activated learners are not the passive receivers of the theoretical knowledge bases; instead, they are open to learning when they have the opportunity to engage in hands-on and minds-on in-class implementations. Self-activated students can state and compose their own ideas, engage in intentional communications with their peers in work groups, and find the diverse applications of the asserted hypothesis.

To summarise, for the Level 2 categories of description, the learning-teaching phenomenon is separated into two exclusively mutual poles: teacher-centred and student-centred, which are two ends of the same scale. In other words, in this level, the roles or existences of teachers are invisible as the teaching-learning phenomenon is mostly about learners. The PTs who registered their conceptions within this level did not give a place for teachers for teaching-learning phenomenon.

In essence, Level 2 suggests a more inclusive awareness about teaching-learning phenomenon. In addition to the ways of delivering topics to learners, the PTs advocated that learners should play an active and producer role in undertaking the responsibility for their learning. In this manner, Level 2 presented a broader conceptualisation of the learning-teaching phenomena. However, in a rigorous manner, the PTs did not attribute any status or position to

teachers in scaffolding or guiding learners in their teaching. Thus, this level is labelled as individual-centred learning since it contains only the actions, decisions, implementations and endeavours of learners and these enactments of individuals are truly isolated from the in-class roles, guidance and scaffolding strategies of the teachers that are seen in Level 3.

LEVEL 3: Learner-centred teaching

In addition to the knowledge transmission modes of teaching and centralising individuals' enactments for learning processes, for this level, the PTs included the learned subject and the teacher and learners in the system. Level 3 was labelled as learner-centred teaching-learning containing several elements of instructional processes as a whole. For this level, the PTs perceived the teaching-learning phenomena as an alteration of the concepts in the form of shifting thinking and talking about the concepts under negotiation. For this instructional purpose, the PTs expressed the need for involvement in argumentative (evaluative) and dialogical instructional contexts. The argumentative-evaluative and dialogical verbal interactions and exchanges during instructional processes can be more plausible and possible through making the learners' cognitive contradictions public in augmenting the scope of the negotiations that are conceived as necessary for teaching-learning for the PTs.

I understood that it [learning] was much easier to learn something through discussion with my peers throughout my high school and college life. Later on, I noticed that I gain more in terms of learning when I am able to apply my own acquisitions individually. Indeed, through scaffolding from my peers and teachers in the first realisation phase of my actions [pondering about topics] made my learning much easier. I liked asking essential questions while I was trying to solve a problem I was working on. When I received meaningful responses, I determined that my comprehensions were a way of measuring the extent to which I gained [learned]. Particularly, in the course of arguing, the questions that I directed and the questions that were posed to me were quite influential in determining whether my thinking was correct, incorrect, plausible, logical or absurd.

A participant (see also above-located quotation) gave a background outline and commented on her secondary school and university years. As she spoke, she stated that learning a topic is substantially easier when she was involved in discussions with her peers. She also commented on the internalisation process, from social to individual or from intermental to intramental planes, when she individually applied formerly negotiated topics to different or familiar contexts. A striking point was that she also explained that during the initial phases of learning, receiving scaffolding from others (e.g. peers and teachers) was dramatically facilitating. As a self-learning and instructional strategy, she also emphasised *questioning* when she was pondering problems she was trying to solve. This was crucially important for her. When she received scaffolding and guiding responses for her own questions that emerged in her mind while working on the problems, she had concrete reference points to evaluate and revise her streaming of reasoning. These evaluation and revision procedures were also maximised during the negotiations of meaning within learning groups in which she determined whether her reasoning, ideas, arguments or articulations about the topic under negotiation were logical and convincing in comparison with the utterances of others.

Learning is attainable through experimenting by looking at the different perspectives, changing concepts, making definition alterations, debating, running into contradictions... I never forget, in a course, the teacher asked, "Was Robin Hood a thief?" My friends began to group in terms of different responses about the question. Then, a friend said, "Yes, a thief!" She was in conflict during our ongoing discussions, and then changed her mind and said, "No, he was not a thief." When we pondered on the Robin Hood case, there were several different ideas and debates. Simply, the idea

of robbery had to be reconsidered, and the process was rigorously persuasive but deterrent. At this point, the teacher was the person who simply faced different ideas. Or she offered a different idea when we did not present a different idea. She always gave controversial responses to our ideas. But it was not easy to abandon our initial ideas. We tried to defend our initial utterances, even if they were totally illogical. I think this is how I conceive learning. It is necessary for students to face conflicts to learn about something. There has to be a debate... That's what I think.

Another participant (see also above-located quotation) presented a personal experience from the moment she had in a university-based course. He presented an extended portrayal of the learning phenomenon by referring to specific jargon such as considering alternative points of view, conceptual change, altering individual-led descriptions, engaging in argument, resolving cognitive conflicts, or placing someone in a dilemma. He commented on the conception of one student during a discussion on whether Robin Hood was a robber. He indicated that most of his peers immediately accepted that Robin Hood was a thief. But in evaluating, judging, criticising and legitimating the discursive atmosphere, there were students who mostly modified their assertions regarding Robin Hood being a robber. Furthermore, he commented on the nature of that discursive process in which they were negotiating about the different ways of robbery, there were alternative or counterarguments causing in-depth negotiations. According to this participant, the students had to reconsider the concept of robbery in a broader manner in the sense of convincing and intimidating counter ideas.

The participant allocated a discursive and guiding role to the teacher who managed the discursive interactions and exchanges. He explained that the teacher behaved as a person who was at odds with the pedagogical posture. In the absence of the alternative or counter ideas, the teacher proposed distinctive claims to trigger discussable points to support the discursive interactions and learning as the ultimate end or outcome of the negotiation of meaning. The participant was also aware of the thorny aspect of the established claims about the concepts as they were not simply subject to change even though they were falsified during rigorous negotiations. As a whole, he experienced or conceptualised the above-stated moment as learning. He highlighted two points for learning: there should be a discussion or negotiation, and discussions should be regulated by the conceptual conflicts of the class members. To summarise, within Level 3, the PTs were able to present profound articulations about the rather sophisticated nature of the learning-teaching phenomenon. In this level, learner-centred teaching was depicted as an inclusive conception of teaching-learning by the PTs. By both teacher and students being part of the negotiations, there were some particular moments in which class members' alternative or counterclaims competed with each other. This augmented the scope of the negotiations by leading the students to experience different ways to comprehend the phenomenon under discussion.

DISCUSSION and CONCLUSIONS

The aim of the current study was to discern the scope and breadth of the participant PTs' conceptions that originated from their experiences through establishing a phenomenographic argument based on the language they used. This approach was considered to be illuminative in terms of detecting the reflections of the current reform-based initiations to standard-based teacher education in the national context of Turkey. There were two prominent discussion points: the overly subject-centred conceptions of the PTs and the sharp distinctions between the individual-centred and learner-centred conceptions of the PTs.

Firstly, it was considered that the PTs provided a wide range of conceptions of the phenomenon. Three hierarchical higher-order categories including several categories of the description were derived from the articulated conceptions of the PTs. The tendencies revealed in the levels displayed that the PTs held overly subject-centred conceptions. In phenomenographic sense, the PTs had experienced the diversified ways of the knowledge transmission modes of

instruction. There were some signs of the learner-centred conceptions, but these seemed to be considerably restricted.

The three hierarchical levels within the outcome space seem to match with the current classification of the paradigms of instruction as follows; behaviourist (Level 1: subject-centred teaching; 58%), cognitive (Level 2: individual-centred learning; 26%) and sociocultural (Level 3: learner-centred teaching-learning; 16%) worldviews regarding the teaching-learning phenomenon. As mentioned above, there were few signs of the learner-centred teaching-learning experiences or the conceptions of the PTs, in addition to individual-centred learning compared to pervasive subject-centred teaching conceptions of the PTs. This finding is supported by other studies (e.g. Buaraphan 2011, Saban, 2010), and particularly parallels the study of Martinez et al. (2001) who quantitatively compared teacher candidates' and in-service teachers' conceptions about teaching and learning with regards to the three paradigms with the following results; behaviourist: candidates 22%; in-service 38%; cognitive: candidates 56%, in-service 57%; and co-constructivist: candidates 22%, in-service: 5%.

As confirmed in this study, the PTs seemed to maintain their overly teacher-centred conceptions upon graduation (exit level); they also held partially and poorly learner-centred ways of experiences, and this has been confirmed by several studies (e.g. Bryan, 2003; Holt-Reynolds, 2003). Most of the conceptions about instruction provided by the PTs incorporated excellent samples and instances of transmitting knowledge using a diffusion method just by dictating the facts to learners. The PTs ways of experiencing were, therefore, substantially compatible with the knowledge-source concept (Leon-Carillo, 2007), the transferring concept (Fox, 1983), the delivery concept (Gurney, 1995), and the school learning concept (Hadar, 2009).

In a phenomenographic sense, LaBoskey (1993) proposed that there may be a close correlation between bearing teacher-centred belief orientations and an unwillingness to share or deepen experiences or conceptions about the teaching-learning phenomenon. On the other hand, while adopting learner-centred teaching belief orientations, teachers may tend to expound upon and comfortably express their ideas about their changing beliefs as conceptions (LaBoskey, 1993). This assertion has been supported by several studies including larger samples (e.g. Becker & Riel, 2000; OECD, 2009; Van Veen & Slegers, 2006). However, in terms of the phenomenographic argument of the current study, it has to be questioned as to why the PTs were suffering from constructing extended conceptions.

This study provides a response to this question. To explicate, Wall (2016) confirmed that most PTs enter teacher education programmes with idealistic and naive conceptions about teaching-learning. Wall (2016) also proposed that one of the best ways of modifying or extending PTs' comprehensions may be to confront them with instructional realities that cause "a cognitive dissonance" (p. 372). This cognitive dissonance refers to the idea that PTs should be faced with diverse and distinctive instructional experiences, some of which can present a challenge to their existing beliefs or ways of experiencing. This process may disclose a close relation between the ranges of articulating conceptions and the supply of instructional experiences through which PTs develop their conceptions and may contain challenges in terms of instructional actualities. However, this was not valid for the current study since the PTs participants were at the exit level of their teacher education program. Thus, the PTs were anticipated to be challenged, and in turn, to be experienced through alternative or distinctive ways of teaching activities during their university-based teaching that were mainly planned, designed and implemented by the efforts of the teachers of the PTs. Alternatively, the unwillingness of the PTs to articulate their conceptions might be due to their lack of the essential thought-provoking university-based instructional experiences that were provided by their course teachers.

Secondly, individual-centred learning conceptions were found to be moderately distinct from the learner-centred teaching-learning conceptions of the PTs. In the context of this study, the individual-centred learning conceptions implied the exclusion of teachers from instruction. The learner-centred teaching-learning conceptions, on the other hand, signify the co-existence of teachers and learners within the same instructional system for collective and authentic meaning-making.

Several studies have reported that teachers may hold a combination of subject-centred and learner-centred conceptions, and teacher candidates may hold two mutually exclusive types of conceptions of instruction (De Vries et al., 2014; Meirink et al., 2009; Tondeur et al., 2008). However, in the current study, the co-existence of teacher and learners for teaching and learning did not imply a *conceptual-practical dichotomy* as reported by other studies which classify teachers' or PTs' conceptions as either subject-centred (including only teachers) or individual-centred (including only students) or rather sophisticated combinations of the two ends of the same scale.

The phenomenographic argument of the current study confirms that the necessary inclusion of both teachers and learners in the system reflects a *conceptual-practical consensus* requiring and incorporating both camps' voices, roles, strategies, reasoning and thinking, and in turn, class members' hands-on and minds-on existences for meaning-making as understood from the conceptions of the PTs. Substantial research has revealed that teachers as change agents who strongly favour reform-based initiatives should be able to adopt the inclusion of both themselves (their voices and crucial instructional roles as strategies) and their students (student-led voices and their learning liabilities) in the system as the vital aspect of the instructional sequences (OECD, 2009).

In other words, a teacher's effectiveness may be best illuminated by knowing to what extent and how s/he is able to use both teacher-led inputs and student-led outcomes in relevant, pragmatist and influential ways (Kyriakides et al., 2009; Lipowsky et al., 2009). However, the conceptual-practical dichotomy was more distinguishable within the conceptions of the PTs whereas there were little or no signs of the conceptual-practical consensus that is necessary to abide by the current core requirements of the reform-based initiatives both in national and international contexts.

Implications for Teacher Education

This study brings several facets of teacher preparation into question regarding maintaining reform-based initiatives in Turkey. In the phenomenographic sense, it was understood that the PTs did not possess sufficient diversifying instructional experiences, and thus conceptions about the what and how aspects of teaching-learning. The authors, as prospective teacher educators, have attributed the source of the confirmed phenomenographic problematic to the lack of the provided instructional experiences that are thought to be acquired or experienced during university-based teaching. Thus, the recommendations for teacher preparation and further research will be based upon the data collected from the teachers of the PTs.

It has been proposed that there must be "more attention to what teachers of teachers themselves need to know, and institutional supports need to be in place in order to meet the complex demands of preparing teachers for the 21st century" (Cochran-Smith, 2003, p. 6). It is widely accepted that teacher educators are a poorly understood professional group (Berry 2007; Korthagen, Loughran & Lunenberg, 2005) and an under-researched field of inquiry (Loughran, 2006; Murray, 2005). Investigating teacher educators can be considered as a must for researchers in the sense of reform-based attempts as Goodwin and Kosnik (2013) declare that "given the critical role teacher educators can and should play in educational reform, attention to their preparation, knowledge, and quality becomes more important than ever" (p. 336). Furthermore, there has also been a remarkable silence regarding the quality of teacher educators (Margolin, 2011).

In responding to the untouched field of inquiry, some scholars have captured and interpreted teacher educators' conceptions of teaching-learning in their own context (Åkerlind, 2003; 2007; 2008). Thus, at the very first stage, the range of Turkish teacher educators' conceptions regarding teaching-learning should be determined to detect in what ways and to what extent they would be able to create varying instructional environments for PTs. This is essential for them to augment their conceptions of teaching-learning and accompanying in-class practices that would fulfil the emerging requirements of the current reform-based attempts. However, this would require concrete nation-wide policies and internally consistent applications

of the principles of the developed policies because becoming a teacher educator has been acknowledged as a self-evident journey or activity (Zeichner, 2005; 2006); thus, there is a need to create and apply specific standards (Margolin, 2011). These standards must be consistently created and applied and represent consensus of the field of classroom teaching, and they must be precise and stated in an analytical and concrete manner (Goodwin & Kosnik, 2013).

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