

Prospective Teachers' Metaphors: Teacher, Teaching, Learning, Instructional Material and Evaluation Concepts*

By

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Abstract

This study aimed to examine the prospective teachers' metaphors regarding the concepts of teacher, teaching, learning, instructional material, and evaluation. A total of 389 prospective teachers voluntarily participated in the study. The results revealed that the prospective teachers' metaphors regarding the concepts of teacher, teaching, learning, instructional material, and evaluation constituted meaningful and discernible categories each of which has both cognitive and affective aspects, with the exception of the categories regarding learning concept. Results of the current study lead to three major conclusions. First, prospective teachers' metaphors regarding the teacher, teaching, learning, instructional material, and evaluation constituted meaningful and discernible categories. Second, these categories, with the exception of the categories regarding learning, contained prominent cognitive and affective aspects. Finally, the affective aspects of these categories differed in terms of their valence. Implications for teacher education and directions for future studies were also discussed in the present study.

Keywords: *Metaphor; Teaching; Teacher; Learning; Instructional Material; Evaluation*

1. Introduction

As one of the crucial mechanisms of the human mind, metaphors are the mental structures reflecting individuals' self-related images, beliefs, emotions, and thoughts by means of which they understand and act within their worlds (Alger, 2009; Lakoff, 2009; Lakoff & Johnson, 1980). As such, metaphors enable people to simplify the complex and abstract aspects of their worlds (Farrell, 2006). They also provide a solid basis to understand the unfamiliar or new phenomenon in familiar terms (Dickmeyer, 1989; Saban, 2010).

Therefore, it is not surprising to observe that a growing body of research has examined the teachers' and/or prospective teachers' metaphors (e.g., McGlone, 2007; Saban, Kocbeker, & Saban, 2007; Thomas & Beauchamp, 2011). These studies have mainly focused on teachers and/or prospective teachers' metaphors regarding teaching, learning, learners, and educational technology concepts (Gok & Erdogan, 2010). As far as the researchers aware, no previous research has investigated prospective teachers' metaphors regarding the concepts of teacher, learning, and teaching together with their metaphors regarding the concepts of instructional material and evaluation, indicating that these issues remain to be challenged.

However, to examine prospective teachers' metaphors regarding the concepts of evaluation and instructional material together with their metaphors regarding those of teacher, learning, and teaching may provide a comprehensive picture which reveals how they envision their teaching-related future. In addition, given the fact that to attract talented and motivated people into the teaching profession and

* The paper was presented at 14th International Conference of the Balkan Society for Pedagogy and Education, *Evaluation in Education in the Balkan Countries*, Belgrade, Serbia, 16-18 June, 2011.

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increasing teaching and teacher quality are international concerns that occupy policy makers and researchers from a diverse range of countries (e.g., United States, the Netherlands, Turkey, and Australia (Bruinsma & Canrinus, 2012; OECD, 2005; Richardson & Watt, 2010; Roness, 2011), it is important to explore how prospective teachers' perceive the teaching profession in the early periods of their professional development (i.e., teacher education). Thus, this study is also important as it focuses on the prospective teachers' metaphors regarding the concepts of teacher, teaching, learning, instructional material, and evaluation, each of which is crucially relevant to the teaching profession.

Finally, both the concepts of teaching and learning are so broad in scope that they contain diverse elements of the teaching and learning processes such as teacher, learning, evaluation, and instructional material. This means that, when they are asked to write their metaphors about teaching and learning concepts, which was the case in most of the previous studies (e.g., Bullough, 1991), prospective teachers may respond with one or two of these aspects in their minds. This, in turn, may significantly prevent the investigation of prospective teachers' metaphors about teaching and learning in a detailed manner. Thus, the present study has focused on prospective teachers' metaphors regarding the teacher, learning, and teaching together with their metaphors regarding evaluation and instructional material, with the intention to explore their metaphors about teaching and learning-related concepts in a detailed manner.

2. Literature Review

Considerable research has demonstrated that metaphors are beneficial in understanding how teachers and/or prospective teachers perceive their teaching roles in educational settings (e.g., Leavy, McSorley, & Boté, 2007; Saban et al., 2007), how they perceive the role of educational technology (Bagci & Coklar, 2010), how they conceptualize teaching, learning, and learner (Parks, 2010), and how they describe their professional identities (Thomas & Beauchamp, 2007, 2011). For example, Bullough (1991) examined the changes in prospective teachers' metaphors about the teacher, and found that some teachers' metaphors (e.g., teacher as butterfly) considerably changed (e.g., teacher as chameleon) as they proceeded through student teaching while other teachers' metaphors remained the same (e.g., teacher as husbandman of the young, devil's advocate). Similarly, Bullough and Stokes (1994) examined prospective teachers' personal teaching metaphors, and found that the prospective teachers' initial metaphors (e.g., teacher as bridge builder, teacher as a guide) either changed in terms of their functions (e.g., from teacher as bridge builder to teacher is bridge) or changed in terms of their contents (e.g., from teacher as a guide to teacher as a policewoman). Importantly, the results of their study revealed that the prospective teachers' metaphors did not only include cognitive aspects (e.g., teacher is expert), but also consisted of affective aspects of the teaching (e.g., teacher as nurturer).

On the basis of a sample of 363 final year Turkish prospective primary school teachers, Saban (2004) examined prospective teachers' metaphors regarding the concepts of elementary school teacher, cooperating teacher, and self-as a future teacher. Saban (2004) found that the prospective teachers' metaphors can be classified as teacher-centered metaphors (e.g. customer, shopkeeper, and race horse) and student-centered metaphors (e.g., flower, explorer, and player) within the framework of each theme (i.e., elementary school teacher, cooperating teacher, and self-as a future teacher) (see, for similar results, Saban et al., 2007 and Saban, 2010). Alger (2009) investigated high school teachers' metaphors about teaching in different time points (i.e., envisioned teaching metaphors prior to teaching and current teaching metaphors), and in terms of one affective aspect (i.e., currently desired teaching metaphors).

Of particular relevance, she found that the reported use of "guiding" and "molding" metaphors increased with teaching experience, whereas use of "nurturing", "transmitting", and "providing tools" metaphors appeared relatively stable across teaching experience levels. Based on a sample of 131 Turkish prospective teachers, Bagci and Coklar (2010) examined the prospective teachers' metaphors about educational technology. They found that "teacher", "user", "designer", and "computer" were the most used metaphors by the prospective teachers. They also found that these metaphors can be classified under

the headings of “being important/useful”, “assistant/guide”, “user”, “producer/designer”, “learner”, and “attitude” themes. More recently, Pinnegar, Mangelson, Reed, and Groves (2011) examined how prospective teachers position themselves, obligations, responsibilities, and duties they prepared to enact, the expectations they hold for students in terms of definition, the role of teacher and the role of student. Consequently, they demonstrated that the prospective teachers' metaphors (e.g., teacher as expert) significantly matched with their definitions (e.g., teachers have a thorough knowledge of their subject matter), perceived obligations as teachers (e.g., be knowledgeable about subject matter), and perceived role of students (e.g., trust and respect to teacher).

The results of the above mentioned studies reveal that (a) prospective teachers' metaphors significantly relate to diverse aspects of the teaching profession such as teacher, learner, learning, and teaching; (b) prospective teachers' metaphors about teaching and learning do not only consist of cognitive aspects, but also include affective aspects; and (c) prospective teachers' metaphors are both domain-specific and malleable by nature; namely, they both differ from one context to another and change over time. Accordingly, it can be said that it is both reasonable and important to examine the prospective teachers' metaphors regarding the concepts of teacher, teaching, learning, instructional material, and evaluation all together in order to broaden our understanding in terms of how prospective teachers envision the major aspects of their future profession at the beginning of their career (i.e., teacher education).

Aim and Research Question

The aim of this study is to examine Turkish prospective teachers' metaphors regarding the concepts of teacher, teaching, learning, instructional material, and evaluation. In line with this aim, one research question is formulated as follows: “What are the prospective teachers' metaphors regarding the concepts of teacher, teaching, learning, instructional material, and evaluation?”

No specific hypotheses are suggested due to the explorative nature of the present study. Nevertheless, previous studies provide a solid basis to predict that the prospective teachers' metaphors regarding the concepts of teacher, teaching, learning, instructional material, and evaluation can be explained through the meaningful categories (e.g., Bagci & Coklar, 2010; Saban et al., 2007). In addition, given that the prospective teachers' metaphors not only consist of cognitive aspects, but also contain affective aspects (Bullough & Stokes, 1994), both cognitive and affective categories can be expected in terms of the prospective teachers' metaphors regarding the concepts of teacher, teaching, learning, instructional material, and evaluation concepts.

3. Method

Participants

The data were collected in six faculties of education at different universities, located in the Black Sea (n = 161), Central Anatolia (n = 68), Marmara (n = 68), Aegean (n = 49), and the Mediterranean (n = 43) geographical regions of Turkey. A total of 389 prospective teachers (271 female), majoring in Science Teaching (n = 63), Mathematics Teaching (n = 110), Primary School Teaching (n = 73), English Language Teaching (n = 64), and Computer Education and Instructional Technology Teaching (n = 79), voluntarily participated in the study. The sample consisted of 90 first-year, 141 second-year, 86 third-year, and 72 final-year prospective teachers. The participants ranged in age from 18 to 28 years (M = 20.37; SD = 1.78).

Research Instrument and Procedure

Based on the previous studies (e.g., Alger, 2009; Saban et al., 2007), a semi-structured questionnaire was developed in the present study. The questionnaire consisted of three identical prompts for each of the teacher (i.e., A teacher is like... because...) teaching (i.e., Teaching is like... because...), learning (i.e., Learning is like... because...), instructional material (i.e., Instructional material is like... because...), and evaluation concepts (i.e., Evaluation is like... because...). The questionnaire also contained one example

(e.g., A teacher is like a book because s/he knows a lot) regarding each concept in order to enable participants to respond appropriately. The questionnaire was distributed to the volunteer prospective teachers in autumn semester of 2010/2011 academic year. Six colleagues who work in the abovementioned faculties of education helped the researchers to administer the questionnaire to the participants.

Data Analysis

Both qualitative (i.e., content analyses) and quantitative methods (i.e., frequency analyses) were used to address the research question (Bryman, 2006; Creswell, 2008). First of all, a content analysis was conducted in order to examine the prospective teachers' metaphors regarding teacher, teaching, learning, instructional material, and evaluation concepts in a qualitative manner. In the content analysis, labeled as the refinement phase, prospective teachers' metaphors and reasons with regard to these metaphors were examined in terms of three criteria: (a) relevancy (i.e., whether the metaphors and reasons with regard to these metaphors are relevant); (b) coherency (i.e., whether the metaphors and reasons with regard to these metaphors are compatible with each other); and (c) meaningfulness (i.e., whether the metaphors and reasons with regard to these metaphors are meaningful). Following the refinement phase, a series of frequency analyses was conducted in order to see which metaphors were particularly used to describe the concepts of teacher, teaching, learning, instructional material, and evaluation. The frequency analyses were conducted using the SPSS 15 frequency analysis module (Gerber & Finn, 2005). Finally, another content analysis, labeled as the category construction phase, was conducted in order to explore the underlying categories of those metaphors which met the mentioned criteria.

The category construction phase was conducted with the assistance of one colleague who was blind to the aim of the present study. This procedure is crucial in qualitative studies in order to establish interpretative validity which directly addresses whether the facts and/or events in a particular environment are interpreted similarly by different people (Creswell, 2008; Maxwell, 1992). During the category construction phase, disagreements were resolved through the discussion on the categories, as well as through the discussion on the metaphors constituting these categories. In order to calculate the inter-rater agreement on the content of the categories, final metaphors were examined in relation to their category memberships with the assistance of another colleague who was also blind to the aim of the present study. The inter-rater agreement was computed based on the Cohen's coefficient Kappa (Cohen, 1988).

4. Results

The prospective teachers described 4351 metaphors. The criterion-based (i.e., relevancy, coherency, and meaningfulness) selection procedure (i.e., refinement phase) has resulted with 1260 metaphors. Specifically, 614, 145, 120, 220, and 161 metaphors for the concepts of teacher, teaching, learning, instructional material, and evaluation met the mentioned three criteria respectively. These metaphors are presented in Table 1 in terms of their frequencies.

As seen in Table 1, each concept was described by distinctly different metaphors although there were similarities among some metaphors regarding different concepts. For example, light metaphors were frequently used to describe all of the concepts at hand (see Table 1), while the torture metaphor was among those metaphors that were used to describe the evaluation concept only. Similarly, the mother metaphor was among those that were used to describe the teacher concept only. Furthermore, some metaphors were used in a different manner within the contexts of different concepts, although they were conceptually similar to each other. For example, the construction metaphor was used to describe both the teaching and learning concepts. However, in the context of the teaching concept, the construction metaphor refers to a teacher centered process, whereas in the context of the learning concept, it refers to a learner centered process. This means that the metaphors were not described superficially by the

prospective teachers. Rather, they were used to address the nature of the concepts of teacher, teaching, learning, instructional material, and evaluation in a selective manner.

Table 1 Summary of the frequency analysis regarding the metaphors

Concepts and metaphors									
Teacher (%)	Teaching (%)	Learning (%)	Material (%)	Evaluation (%)					
Tree	15 (2.4)	Construction	5 (3.4)	Construction	5 (4.01)	Accessory	3 (1.4)	Creditor	3 (1.9)
Mother	74 (12.1)	Art	45 (31)	Deep hole	2 (1.7)	Vehicle	38 (17.3)	Mirror	15 (9.3)
Friend	22 (3.6)	Journey	5 (3.4)	Sapling	2 (1.7)	Friend	5 (2.3)	Cloud	4 (2.5)
Father	10 (1.6)	Game	6 (4.1)	Journey	20 (15.9)	Walking		Fine	
Sun	44 (7.2)	Shopping	2 (1.4)	Life	3 (2.5)	stick	2 (0.9)	Sieve	13 (8.1)
Treasure	15 (2.4)	Love	2 (1.4)	Treasure	2 (1.7)	Movie	4 (1.8)	Harvest	5 (3.1)
Light	42 (6.8)	Growing a		Light	2 (1.7)	Treasure	4 (1.8)	Light	4 (2.5)
Book	70 (11.4)	flower	2 (1.4)	Discovery	3 (2.5)	Map	3 (1.4)	Torture	2 (1.2)
Library	10 (1.6)	Challenging	2 (1.4)	Stairway	5 (4.01)	Light	3 (1.4)	Cat	2 (1.2)
Leader	13 (2.1)	Light	2 (1.4)	Game	5 (4.01)	Assistance	28 (12.8)	Court	2 (1.2)
Model	11 (1.8)	Compass	2 (1.4)	Space	5 (4.01)	Book	4 (1.8)	Recipe	2 (1.2)
Candle	25 (4.1)	Guidance	2 (1.4)	Cooking	5 (4.01)	Toy	21 (9.5)	Race	13 (8.1)
Compass	20 (3.3)	Painting	3 (2.1)	Other	51 (42.5)	Game	4 (1.8)	Invest-	
Guide	82 (13.4)	Theatre	2 (1.4)			Road	4 (1.8)	igation	5 (3.01)
Other	161 (26.2)	Other	65 (44.8)			Other	97 (44.1)	Other	91 (56.5)

Note: For the teacher concept, metaphors mentioned less than 10 times were not shown; whereas, for the concepts of teaching, learning, material, and evaluation, metaphors mentioned less than twice were not shown in order to establish a balance between the different numbers of metaphors in the Table.

The abovementioned results suggest that it is reasonable to examine the underlying categories of the metaphors regarding the teacher, teaching, learning, instructional material, and evaluation. Thus, with the assistance of a colleague who was blind to the aim of the study, these metaphors were examined by the researchers in terms of their underlying categories (i.e., category construction phase). Each category was represented by five metaphors which best describe the nature of the category. By doing so, it was aimed to describe the categories in a both robust and concise manner. As a result of the category construction phase, it was found that the teacher concept was defined through three categories such as “Teacher as a loving and caring person” (Teacher-LCP), “Teacher as a source of knowledge” (Teacher-SK), and “Teacher as a guide” (Teacher-GU) (see Table 2).

Table 2 Categories and metaphors regarding teacher concept

Category	Metaphor
<i>Teacher as a loving and caring person</i>	Teacher is like a mother because she cares for students. Teacher is like a mother because she loves students. Teacher is like a mother because she understands students' feelings. Teacher is like a brother or sister because s/he is sensitive to students' feelings. Teacher is like a father because he protects and cares for students.
<i>Teacher as a source of knowledge</i>	Teacher is like a book because s/he informs students. Teacher is like the sun because s/he illuminates students with her or his knowledge. Teacher is like a treasure because s/he has a great deal of knowledge for students. Teacher is like the internet because students can learn a lot from him or her. Teacher is like a tree because s/he feeds students with fruits of knowledge.

Teacher as a guide

Teacher is like a compass because s/he shows the right direction to her or his students.

Teacher is like a lighthouse because s/he enlightens the way of her or his students.

Teacher is like a guide because s/he helps students to achieve their goals.

Teacher is like a friend because s/he assists students to be successful.

Teacher is like an architect because s/he helps students to build meaningful experiences.

Inter-rater agreement (K = .90)

On the other hand, the teaching concept was defined through three categories: “Teaching as an art” (Teaching-ART), “Teaching as a constructive process” (Teaching-COP), and “Teaching as a joyful process” (Teaching-JOP) (see Table 3). The learning concept, however, was described through two categories: “Learning as a challenging and explorative process” (Learning-CHA) and “Learning as a basic human need” (Learning-HUM). The categories and metaphors regarding the teaching concept were shown in Table 3 while the categories and metaphors regarding the learning concept are depicted in Table 4.

Table 3: Categories and metaphors regarding teaching concept

Category	Metaphor
<i>Teaching as an art</i>	
	Teaching is like painting because it forms students’ personality.
	Teaching is like performing a work of art because it requires a special ability.
	Teaching is like performing a work of art because it requires creativity.
	Teaching is like playing a musical instrument because it is not an easy process.
	Teaching is like performing a work of art because it requires a great deal of effort.
<i>Teaching as a constructive process</i>	
	Teaching is like building a house because it is a process through which students’ build their own knowledge
	Teaching is like construction work because it takes time to built knowledge.
	Teaching is like cooking delicious food because it requires connecting the different aspects of students’ knowledge.
	Teaching is like a communication process because it requires interaction between students and teacher in order to build knowledge.
	Teaching is like library work because teacher assists students to build their own knowledge just like a librarian helps people to find the books they are looking for.
<i>Teaching as a joyful process</i>	
	Teaching is like playing a game because it is entertaining.
	Teaching is like eating chocolate because it makes you happy.
	Teaching is like smiling because it is an amusing process.
	Teaching is like listening to music because it is a joyful process.
	Teaching is like a holiday because it is full of joy.
<i>Inter-rater agreement (K = 1.00)</i>	

Table 4: Categories and metaphors regarding learning concept

Category	Metaphor
<i>Learning as an challenging and explorative process</i>	
	Learning is like building a big house because it is a challenging process.
	Learning is like a turtle’s gait because it happens gradually.
	Learning is like a long bridge because you have to pass in order to know the previously unknown.
	Learning is like discovering a new planet because it is an explorative process.

Learning is like an adventure because it is both challenging and explorative process.

Learning as a basic human need

Learning is like eating because we cannot live without learning.

Learning is like drinking water because we cannot live without learning.

Learning is like breathing because humans cannot survive without learning.

Learning is like a good friend because we need to learn during our life time just like we need good friends.

Learning is like a vitamin because we need to learn in order to survive.

Inter-rater agreement (K = 1.00)

Similarly, the instructional material concept was defined through two categories: “Instructional material as a tool” (Material-TOOL) and “Instructional material as a motivational tool” (Material-MOT). The evaluation concept was described through three meaningful categories: “Evaluation as a summative process” (Evaluation-SUM), “Evaluation as a competitive process” (Evaluation-COM), and “Evaluation as a fearful process” (Evaluation-FEAR). The categories and metaphors regarding the instructional material concept are shown in Table 5, while the categories and metaphors regarding the evaluation concept are depicted in Table 6.

Table 5: Categories and metaphors regarding instructional material concept

Category	Metaphor
<i>Instructional material as a tool</i>	
	Instructional material is like a car because it takes you wherever you want to go during your learning journey.
	Instructional material is like a plane's wing because a plane cannot take off without it.
	Instructional material is like a ship because you cross the learning ocean through the instructional material.
	Instructional material is like a bridge because it has to be passed in order to construct knowledge during learning.
	Instructional material is like a pair of shoes because it is difficult to teach effectively without instructional materials just like, without shoes, walking on the street is difficult.
<i>Instructional material as a motivational tool</i>	
	Instructional material is like a magnet because it attracts attention during teaching.
	Instructional material is like a game because it increases student interest during teaching.
	Instructional material is like rainbow because it is interesting.
	Instructional material is like a coach because it motivates you to learn.
	Instructional material is like a detective story because it arouses curiosity.
<i>Inter-rater agreement (K = 1.00)</i>	

Table 6: Categories and metaphors regarding evaluation concept

Category	Metaphor
<i>Evaluation as a summative process</i>	
	Evaluation is like a story because it ends either good or bad for the students.
	Evaluation is like a mirror because it shows us how much we learnt.
	Evaluation is like a balance because it is impossible to estimate knowledge without it.
	Evaluation is like an important experience, because, at the end, you learn what you should do or should not do in order to be successful.
	Evaluation is like a scoreboard because it shows our situation regarding course achievement.
<i>Evaluation as a competitive process</i>	
	Evaluation is like a race because there are always winners and losers at the end.
	Evaluation is like a ruler because we measure whose performance is better through the evaluation.

Evaluation is like to compare one thing with another thing because students' achievement levels are compared with each other through the evaluation.
Evaluation is like a horse race because there is always one winner, but a lot of losers.
Evaluation is like a knowledge contest because if you know more than other contestants you win the contest.

Evaluation as a fearful process

Evaluation is like a nightmare because you already know that there is nothing to do with it.
Evaluation is like a serious problem because you know that you will always be evaluated during your life time.
Evaluation is like a stressful event because it makes you anxious.
Evaluation is like a cloud because you never know what it brings.
Evaluation is like a car crash because it may result for in a horrible manner.

Inter-rater agreement (K = .90)

Finally, as seen in the relevant Tables, the inter-rater agreement rates regarding the categories of teacher, teaching, learning, instructional material, and evaluation concepts were quite high (Cohen, 1988). This means that each of the categories regarding teacher, teaching, learning, instructional material, and evaluation concepts was reliably represented with their metaphors. Thus, the results were discussed in terms of the mentioned categories.

5. Discussion

In line with the results of previous studies (e.g., Bullough & Stokes, 1994; Saban et al., 2007; Thomas & Beauchamp, 2011), results of the present study demonstrated that the Turkish prospective teachers' metaphors regarding the concepts of the teacher, teaching, instructional material, and evaluation were reliably classified into both cognitive and affective categories. Accordingly, it can be said that the prospective teachers' metaphors regarding teacher, teaching, instructional material, and evaluation concepts reflect how they perceive of and feel about these educational concepts, each of which is formed through their educational experiences when they were students (Boekaerts, 2003). Thus, it can be suggested that teacher educators should focus on their students' metaphors in order to uncover how prospective teachers' educational experiences shape their current thoughts and feelings about the crucial aspects of the teaching profession such as teacher, teaching, instructional material, and evaluation.

On the other hand, the current results also showed that the prospective teachers' metaphors regarding the learning concept was represented by cognitive categories only (i.e., Learning-CHA and Learning-HUM). This may be due to the fact that the prospective teachers' were exposed to effects of the traditional teaching and learning processes when they were students, which, in turn, may form their beliefs that learning is a process which requires students to use cognitive processes only. Although this explanation is reasonable because teachers' teaching and learning-related behaviors and beliefs are significantly affected by their earlier educational experiences when they were students (Pajares, 1992; Rodgers & Scott, 2008), it requires a further investigation due to the reason that the prospective teachers' beliefs about teaching and learning were not examined in this study.

In the present study, it was also observed that the affective categories of teacher (i.e., Teacher-LCP), teaching (i.e., Teaching-JOP), and instructional material (i.e., Material-MOT) concepts have positive valences whereas the affective category of the evaluation concept (i.e., Evaluation-FEAR) has a negative valence. This means that the prospective teachers perceived the teacher, teaching, and instructional material concepts more positively than the evaluation concept. The existence of negative metaphors regarding the evaluation concept is regrettably meaningful and should be given serious attention during teacher education because evaluation is one of the crucial aspects of education (Nitko, 1996).

Thus, it can be said that teacher educators should examine why prospective teachers have negative metaphors about the evaluation concept, such as nightmare, stressful event, and car crash, in order to turn these negative thoughts about evaluation into positive ones during teacher education. Meaningful and

positive educational environments and practicum processes, in which prospective teachers find valuable opportunities to observe that evaluation process promotes student learning and motivation may be beneficial to change their perceptions about the evaluation from negative to positive. To enable prospective teachers to reflect on the evaluation concept on the basis of their educational experiences when they were students may also be beneficial to change their perceptions about the evaluation from negative to positive as the reflection process has strong potential to uncover their negative beliefs about the evaluation concept.

Apart from the affective aspects of the categories regarding the evaluation concept, results of the present study also revealed that the prospective teachers' metaphors regarding the evaluation concept contained the categories of evaluation as a summative process and evaluation as a competitive process. Given that these categories are highly related to one another due to their performance oriented nature (Elliot, 1999), the current result of the present study can be explained by the competitive nature of the Turkish education system which is highly based on ranking type examinations, such as student selection examinations (Erdogan, 2010).

Indeed, if prospective teachers' perceive the evaluation as a summative process through which students' learning are evaluated as a product, or as an end-state, of their class-related tasks and activities, then it is not surprising to observe that they also perceive the evaluation process as a competitive process because summative evaluation is required teachers to evaluate students' learning performances on the basis of highly structured and school-based extrinsic norms. It is obvious that such evaluation referring to "one size fits all" approach, provides a basis for students to compare their performances with each other rather than to focus on their performances as a degree to which their progress in learning. It should be noted that formative evaluation is also quite an important part of the evaluation process, because it provides a basis for the development of educational or instructional processes. Therefore, prospective teachers should be informed about formative evaluation sufficiently to expand their understanding of the evaluation process beyond summative evaluation during teacher education.

Limitations and Directions for Future Studies

This study has some limitations, each of which provides a meaningful basis for future studies. First, although the sample of the study was adequate to examine the prospective teachers' metaphors regarding the concepts of teacher, teaching, learning, instructional material, and evaluation, future studies through which prospective teachers' metaphors will be investigated based on the larger samples may increase the extension of the current view regarding prospective teachers' metaphors. Second, the potential relationships among the categories of the mentioned concepts were not examined in the present study. Therefore, it can be suggested that the relationships among these categories should also be considered in future studies.

Thirdly, the present study was a cross-sectional study in nature, indicating that the current results drew one picture in which the prospective teachers' metaphors were apparent in one point of time. Thus, longitudinal studies are needed in order to examine how prospective teachers' metaphors regarding the concepts of teacher, teaching, learning, instructional material, and evaluation change over time, as well as to examine how these metaphors relate to each other during teacher education. Finally, the present categories were obtained based on qualitative analyses. Thus, the validity and reliability of these categories should also be investigated in a quantitative manner in future studies.

6. Conclusions

The results of the current study lead to three major conclusions. First, prospective teachers' metaphors regarding the concepts of teacher, teaching, learning, instructional material, and evaluation constituted meaningful and discernible categories. Second, these categories, with the exception of those regarding the

learning concept, contained both cognitive and affective aspects. Third, the affective aspects of these categories differed in terms of their valence.

Overall results of the study suggest that the prospective teachers' metaphors should be considered during teacher education in order to understand what they think about teaching and learning-related concepts (e.g., teacher) and processes (e.g., teaching) more comprehensively. Finally, and most importantly, it can also be suggested that the affective aspects of the prospective teachers' metaphors regarding the concepts of teacher, teaching, instructional material, and evaluation should be considered during teacher education in order to understand how they feel about the crucial aspects of the teaching and learning-related processes, evaluation in particular. By doing so, teacher educators may not only find an opportunity to touch their students' 'minds', but also find an opportunity to touch their students' 'hearts' during teacher education, which, in turn, may provide a solid basis for prospective teachers to cope with their possible fears such as fear of evaluation more effectively.

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