

THE METAPHORICAL PERCEPTIONS OF PROSPECTIVE ENGINEERING TEACHERS TOWARDS THE “EDUCATION”, “TEACHER” AND “TEACHING” CONCEPTS

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Abstract: *The purpose of this study is to display prospective teachers' perceptions towards the concepts “education”, “teacher” and “teaching” through metaphors. This study is a qualitative research and data were collected via metaphors. The sample of this study consisted of 101 first year students studying in different faculties of Technical University of Cluj-Napoca, Romania and participating in initial teachers training in the spring semester of 2016-2017 academic year. Participants completed the sentences: “Education is like ... because ...”, “Teacher is like ... because ...” and “Teaching is like...because...” The collected data was analysed through content analysis technique and interpreted accordingly. As a result, 6 categories with 71 metaphors about education, 6 categories with 52 metaphors about teacher and 6 categories with 64 metaphors about teaching were produced. It was concluded that prospective teachers had positive perceptions towards education, teacher and teaching. As another result, it could also be observed that their metaphors differed according to the faculty profile at which prospective teachers are being taught. Based on these data, the study offers a set of curriculum development solutions, oriented towards a more efficient academic teacher training program. The results are discussed in relation to their potential relevance for creating more reflexive prospective teachers and for the optimization of the teaching practice.*

Keywords: *metaphor; prospective teachers; teacher training; education; teacher; teaching.*

1. Focus of the paper

Examining the perceptions of the prospective teachers towards concepts about education, teacher and teaching helps us clearly identify their thoughts, perspectives and attitudes. The most powerful instruments for clearly identifying the perceptions of the prospective teachers regarding the abstract concepts are the metaphors these student teachers develop about them.

The metaphors represent the theories on which we base our thinking and actions and they act as an ordering and reference system. To understand how our processing of information works towards development of our personal systems of knowledge, we need to understand this system and the contents of it. Access to this understanding is either through reflection or by direct observation of our actions and reactions in relation to events and objects. With greater understanding of the metaphor system that we use, we can reject it, modify it or retain it. Exercising reflection on the main important issues that teachers face in their professional practice should become a principle infused into the initial and continuing teachers' training.

Within this framework, the aim of the present study is to investigate the opinions of prospective engineering teachers through their metaphors about education, teacher role and teaching profession.

2. Theoretical framework for the study

According to Berger, the metaphor is a form of analogy or "a mode of communication in which meaning is generated by making comparisons" (Berger, 2012). A metaphor is actually a strong analogy which suggests equivalence between the two objects/things being compared (*idem*). The aim of metaphor is to understand and interpret an issue according to another issue (Lakoff & Johnson, 2008). Studies of Lakoff and Johnson (2008) on metaphors are considered as an important stage. Recently, data has been collected by using metaphors in qualitative studies. Metaphor is evaluated as a strong mental device that the individual uses in understanding and explaining a highly abstract, complex or theoretical phenomenon (Yob 2003). Metaphors direct individuals to the new ways of existence and thinking. Essentially, a metaphor is influential and meaningful (*idem*). The metaphor is a useful device which makes it possible to talk about a new concept (Cameron 2010).

Metaphors about education are present in the didactic discourse in schools and in the discourse about education in various contexts. Psychology and pedagogy appealed to them with openness and receptivity. The tendency of pedagogy to affirm and consolidate its scientific status in the world of recognized sciences is presently sustained by the efforts to define educational phenomenon. Due to the complexity of the metaphor there have been given

tens of definitions of education or even hundreds for the intelligence and the creativity.

According to the author Elaine Botha (2009), educational metaphors accepted and rationalized by teachers are reflected especially in various aspects regarding the organization of the didactic activity: choosing the didactic methodology, the general deployment of the activities and organizing teaching experiences for students, in the personal way where the interactions between the actors involved in the educational process are formed. As Botha states, there is a widespread recognition of the fact that metaphors play a significant aesthetical, ornamental and pedagogical role not only in literature, but also in education. Botha also added that metaphors are found in all diverse areas of education and they are also constitutive of the models and theories that form the subject matter of the various disciplines taught in schools and universities. In line with this, Yazıcı (2013) points out the significance of metaphors in the educational settings, as “metaphors are used to make teaching and learning of difficult concepts easier and as the consequence of this students learn complex definitions, recognize their interactions among them and organize them in their minds through the implementation of comparison, exemplification, association, visualization and interpretation processes”.

Educational metaphors can transcend disciplinary fields in order to provide the possibility of interdisciplinary and multidisciplinary openings, which is fundamental for scientific contemporary development in a creative manner. The author Ken Robinson (2011) pointed out the necessity of a profound change of the contemporary educational systems, from the perspective of a holistic approach to training and human personality developing program, by avoiding the so called "toxic focus" exclusively on the academic area: "For the present the challenge is to transform educational systems into something much more suitable for the needs of the 21st century. In the center of this transformation must lie a totally different approach to human creativity and intelligence”. Also, Ken Robinson invites teachers to re-become farmers of the spirit, to identify the excellence area specific for each student and to "look after" it as plant. The statements refer to the role of the metaphor used in the child education in the 18th century of the enlightenment, when J. J. Rousseau aroused the interest of his time.

Some metaphor studies conducted in the field of education focused on concepts such as inspector (Toremén & Dos, 2009), school (Saban, 2008; Ozdemir & Akkaya, 2013), teacher (Saban, Koçbeker, & Saban, 2006; Kalyoncu, 2012), school director (Cerit 2008; Yalcin & Erginer 2012), university teacher (Tortop, 2013), student (Capan, 2010), education (Low, 2008), giftedness (Olthouse, 2014), academic writing (Wan, 2014), learning

to teach process (Gatti & Catalano 2015) and reflective thinking (Ersozlu, 2013).

The metaphor has long been used to successfully facilitate education, fulfilling several functions, such as creating new perspectives, enabling categorization or aiding memorization (Low, 2008; Mayer, 1993). The use of metaphoric analogies has been pointed out as an essential aspect of academic discourse and practice, especially in the creation of theories (Boyd, 1993; Holyoak & Thagard, 1995). Metaphors can help teachers communicate with learners who need to understand a theory or abstract concepts (Duit, 1991; Leino & Drakenberg, 1993); they allow learners to generate inferences and test predictions (Dagher, 1995); they enable teachers to individualize teaching approaches to different learners and their different level of understanding (Duit, 1991). The prominence of metaphor in a certain context can enhance the learner's recall information (Cameron, 2003), especially in the case of more concrete metaphoric constructs and expressions.

Several studies have shown that learners have improved their critical thinking, questioning and problem-solving skills and the ability to apply those skills to scientific texts and ideas (Wittrock & Alesandrini, 1990). The research on metaphor in oral educational contexts focused on the school classroom interaction (Cameron, 2003) and the university lecture (Littlemore, 2001) and paid a special attention to the metaphor's pedagogic functions, its role in structuring the discourse, its systematic and spontaneous uses, combined with gestures. Also, the presence of metaphors in the classroom discourse, their socio-cognitive functions and educational implications have been exceptionally illustrated by Badley and Brummelen (2012).

Integrating metaphors in the practicum of the teaching and learning process gives the learners inspiration and motivation, facilitates understanding relations, similarities and differences, bridges elements of the known and the unknown world, and furthermore, assists the process of conceptualising new knowledge. In addition, the application of metaphor analysis in education research will contribute to a better understanding of the hidden motives influencing the world of education (Fábián, 2006).

Although there is abundant research exploring faculty's conceptions of teaching (Kane, Sandretto, & Heath, 2002; Kember, 1997; Samuelowicz & Bain, 2001), research exploring the conceptions of prospective teachers is scarce. Few researchers have focused on the conceptions of engineering professors (Donald, 1992; McKenna & Yalvac, 2007; Van Driel, Bulte, & Verloop, 2007) and even fewer on the conceptions of future engineering professors (Huang, Yellin, & Turns, 2005).

3. Methodology

3.1. Research design

In this study, it was aimed to analyze the prospective engineering teachers' metaphorical perceptions towards the concepts such as education, teacher and teaching. It was also aimed to reveal the metaphors by determining the common characteristic of the metaphors and putting them under categories accordingly.

The metaphors were generated by prospective engineering teachers studying in different faculties of Technical University of Cluj-Napoca in 2016-2017 academic year. The question "What are the metaphorical perceptions of prospective engineering teachers towards the concepts of "education", "teacher" and "teaching"?" was searched for an answer and depending upon this question, the following sub-questions were asked:

1. What are the metaphors used by prospective engineering teachers for the concepts of "education", "teacher" and "teaching"?
2. Under which categories can the metaphors that were used by prospective engineering teachers for the concepts of "education", "teacher" and "teaching" be assembled?

3.2. Study group

The prospective engineering teachers who participated in this study attend the initial teacher training program. The participants consisted of the prospective teachers studying in different faculties of Technical University of Cluj-Napoca in 2016-2017 academic year. A total of 101 first year teacher students participated in the final study, 38 female and 63 male. The faculty profile which include these prospective teachers are given in the table below (Table 1).

Table 1. Demographical data of participants

		Frequency (f)	Percentage (%)
Gender	Female	38	37.62
	Male	63	62.38
	Total	101	100
Profiles	Building	20	19.80
	Electrical	51	50.50
	Mechanical	30	29.70
	Total	101	100

3.3. Procedure

This study whose aim was to determine the metaphorical perceptions of prospective engineering teachers towards the concepts such as education, teacher and teaching is a qualitative research. In order to reveal out the

metaphorical perceptions of prospective teachers, they were asked to complete the following sentences: “Education is like ... because.....”, “A teacher is like ... because ...”, “Teaching is like ... because.....”. Content analysis, which incorporates the phases of coding, finding the themes and organizing

the data into codes and themes, was used in the data analysis. Content analysis is implemented when the research is not theoretically stated in an explicit way or when a further in-depth analysis is needed (Creswell 2007).

In the analysis of data, five steps were followed which are: (1) recording the data, (2) eliminating and sorting, (3) developing categories, (4) validity and reliability, (5) frequency and interpretation.

Out of the 110 students participating in the study, 101 of them developed metaphors that had a validity, making it possible to be used in the study. The consistency in the explanations of the metaphors developed by the participants has been taken into consideration. Two separate researchers examined and coded the metaphors of prospective teachers on education, teacher and teaching. Reliability of the research was calculated by using the formula of $\text{Reliability} = \frac{\text{Consensus}}{\text{Consensus} + \text{Divergence}}$ (Miles & Huberman, 1994). Reliability coefficient was found as 85% in education metaphor of prospective teachers, 87% in teacher metaphor and 84% in teaching metaphor, respectively.

4. Results and discussions

This section includes the metaphors generated by prospective engineering teachers for the concepts of education, teacher and teaching. Categories which were comprised of the metaphors and characteristics of them were then explained by drawing on the metaphors generated by the participants. 101 prospective teachers produced 71 metaphors for the “education” concept under 6 categories, 52 metaphors for “teacher” concept under 6 categories and 64 metaphors for “teaching” concept under 6 categories.

4.1. Metaphors used by prospective teachers for concepts of education, teacher and teaching and categories derived from those metaphors

The 6 categories for “education” are as follows: Information source, Development, Enlightenment, Results, Key to success and Qualitative labels. The metaphors are mostly gathered under the “Development” (42.57%) and “Information source” (19.80%) categories. Under the category of “Development”, tree (n=7), human development (n=7), shaping (n=5), the cornerstone of the society (n=3), the scale of the sky (n=2), polishing the diamond (n=2), step to humanity (n=1), house (n=1), foundation (n=1), window to the future (n=1), hammer on hot iron (n=1), gardening (n=1),

maturation (n=1), a worm that turns into a butterfly (n=1), a person's past (n=1), bridge on a human life is concerned (n=1), art (n=1), human survival (n=1), life from another person's perspective (n=1), lifeline (n=1), building a better world (n=1), plasterin (n=1), guidance (n=1) are ranked. A sample statement regarding the "Development" category is: *"... is like guiding knowledge. Because s/he trains teacher for becoming teacher."* Under the category of "Information source", there are the metaphors of source of knowledge (n=4), soul nourishment (n=1), the lock of knowledge (n=1), gate to knowledge (n=1), the sky speaker (n=1), exploring the information (n=1), the art of self-discovery and creativity of uniqueness (n=1), the mind-company (n=1), the cultivation of soul and mind (n=1), the dictionary of life (n=1), map for knowledge (n=1), culture (n=1), island to be gradually discovered (n=1), source of life (n=1), meeting between the individual and society (n=1), knowing the fire without getting burned (n=1), the desire to know (n=1). A sample statement regarding the "Information source" category is: *"... is like a map for knowledge. Because it makes us find our road in teaching world."* Under the category of "Qualitative labels", there are the metaphors of heaven on earth (n=1), is better than pearls (n=1) salt in food (n=1), it is vital life (n=1), freedom (n=1), the aorta of life (n=1), life (n=1), lifestyle (n=1), water (n=1), the drop of brightness (n=1), the white coat (n=1). Metaphor sample in "Qualitative labels" category is as follows: *"...like salt in food. Because without it, it is savourless."* Under the category of „Results”, the metaphors are listed in descending order as follows: Lego toy (n=1), fruit (n=1), ore (n=1), motor (n=1), diamond (n=1), gold (n=1), the plate cake (n=1), product (n=1), the stick man helper blind, deaf human hearing aid and poor man's fortune (n=1), honey (n=1). Under the category of „Key to success”, successful future (n=5), bright way to reach success (n=3), compass towards infinity (n=1), key to success (n=1) are ranked. A sample expression related to metaphors in "Key to success" category is as follows: *"... is like a key to success. Because opens all questions' door."* Under the category of "Enlightenment", there are the metaphors of fire (n=2), intellectual light (n=1), the eye of a storm (n=1), the light at the end of the tunnel (n=1), the second birth (n=1), the transition from darkness to light (n=1).

The 6 categories for the "teacher" concept are as follows: Model, Guide, Knowledge provider, Enlightener, Negative social status and Specific features. The metaphors are mostly gathered under "teacher" concept as "Guide" (45.55%) and "Model" (19.80%) categories. Under the category of "Guide", the metaphors are listed in descending order as follows: guide (n=21), parent of education (n=6), pioneer (n=4), pillars (n=2), leader (n=2), scale of the sky (n=1), gate to wisdom (n=1), mentor (n=1), catalyst (n=1), tree root (n=1), master (n=1), driver (n=1), motor (n=1), coach of a team

(n=1), key for closed roads (n=1), water nest (n=1). A sample statement regarding the "Guide" category is: *"... is like a guide. Because we are guided by his/her knowledge and experience"*. Under the category of "Model", there are the metaphors of model (n=7), gardener (n=3), sculptor of personality (n=3), the artist (n=2), jewellery (n=1), farmer (n=1), the casting mold (n=1), example to follow (n=1), worker (n=1). Under the category of "Knowledge provider", the metaphors are listed in descending order as follows: source of knowledge (n=4), interactive book (n=3), living water spring (n=2), dictionary (n=1), chain huge of knowledge (n=1), erupting volcano every day (n=1), knowledge mill (n=1), learning mother (n=1), immortal knowledge wings (n=1). Metaphor sample in "Knowledge provider" category is as follows: *"... is like a dictionary. Because s/he explains us professional knowledge"*. Under the category of "Specific features", owl (n=1), child (n=1), Saint Sunday (n=1), oxygen in water (n=1), hearth (n=1), nature (n=1), container that is not empty (n=1), intelligent (n=1), hero in time combat (n=1), engineer can solve anything (n=1), friend (n=1), working bee (n=1) are ranked. Under the category of "Enlightener", there are the metaphors of candle (n=2), inspiration for the soul (n=2), angel of light (n=1), light guide (n=1), window through which the light comes (n=1). Metaphor sample in "Enlightener" category is given below: *"... like a candle. Because s/he enlightens around, s/he is the person who guides the society."* Under the category of "Negative social status", there is the metaphors of The Glabrous of the Harap-Alb Fairytale - necessary evil (n=1).

For "teaching" concept the 6 categories are as follows: Process, Disseminating information, Guidance, Socialization, Preparing for the future and Reflections. Prospective teachers mostly associated the concept of teaching with Disseminating information (40.59%) and this is followed by Process (21.79%), Guidance (17.82%), Reflections (9.90%), Socialization (4.95%) and Preparing for the future (4.95%) categories that embodied more metaphors than the first respectively. Under the category of "Disseminating information", there are the metaphors of sharing of new knowledge (n=17), fruit planting, sowing (n=7), full mine of jewels (n=1), cascade (n=1), coal (n=1), the Jordan of Education (n=1), arch of the lessons (n=1), power (n=1), cookbook (n=1), story (n=1), rainbow of knowledge (n=1), flight information (n=1), inheritance (n=1), gift (n=1), tree irrigation (n=1), solar wave emission (n=1), presentation of a label (n=1), writing a book (n=1), Swedish buffet (n=1). A sample expression related to metaphors in "Disseminating information" category is as follows: *"... is like a cookbook. Because it contains recipes of knowledge of different fields."* Under the category of "Process", the metaphors are listed in descending order as follows: way of transmitting knowledge (n=9), continuous journey tending to

infinity (n=2), transfer (n=2), path to life (n=1), grinding process (n=1), the magic (n=1), knowledge interpretation (n=1), the triggering (n=1), change of substance in containers (n=1), storm mind (n=1), journey to the center of the earth (n=1), hierarchy (n=1), how an animal takes its chick to hunt (n=1). Under the category of “Guidance”, guidance (n=2), forming (n=2), modelling (n=2), help (n=2), art (n=2), perfecting (n=1), continuous netting (n=1), sculpture of the brain (n=1), dough (n=1), building (n=1), the helm of a ship (n=1), creating a straight path for a tortuous field (n=1), forging (n=1) are ranked. Metaphor sample in “Guidance” category is given below: “... is like guiding knowledge. Because s/he trains the teacher for becoming the teacher.” Under the category of “Reflections”, there are the metaphors of overflow experiences (n=2), language learning (n=1), care (n=1), vital process (n=1), difficult (n=1), sacrificing (n=1), dedication (n=1), essential (n=1), the lioness who takes care of her cubs (n=1). Under the category of “Socialization”, the metaphors are listed in descending order as follows: interaction (n=1), the need to share with others what the teacher is already known (n=1), discussion during the road (n=1), way of socialization (n=1), bridge of ideas, experiences (n=1). Under the category of “Preparing for the future”, there are the metaphors of preparing the unknown (n=1), helping to take off (n=1), occupation (n=1), opportunity (n=1), way to start independent life (n=1).

4.2. Distribution of metaphors used by prospective teachers according to their faculty profile

The distribution of metaphor categories used by prospective teachers for “education” concept according to faculty profile at which they are taught was examined. Results based on that scope are given in Table 2.

Table 2. The distribution of metaphor categories according to faculty profile for “education” concept

	Information source		Development		Enlightenment		Results		Key to success		Qualitative labels		TOTAL	
	f	%	f	%	f	%	f	%	f	%	f	%	f	%
Building Profile	1	5	10	50	2	10	2	10	1	5	4	20	20	19.80
Electrical Profile	12	23.53	21	41.17	2	3.92	5	9.80	7	13.72	4	7.84	51	50.50

Mechanical Profile	7	23.33	12	40	3	10	3	10	2	6.66	3	10	30	29.70
TOTAL	20	31.86	43	131.17	7	23.92	10	29.80	10	25.38	11	37.84	101	100

When Table 2 considered, it is seen that faculty profile of prospective teachers at which they are taught differed on their metaphors used for “education” concept. For instance, teacher students of Building Profile used metaphors in “Development” category (50%), but in a small extent the students used metaphors in “Information source” and “Key to success” categories. Teacher students of Electrical Profile (41.17%) and Mechanical Profile (40%) also used mostly metaphors in “Development” category. The fact that the majority of students that fall into this category of answers equal education with building, developing and shaping personality signals an initial orientation of them towards teaching as supporting students’ positive evolution. Electrical (23.53%) and Mechanical (23.33%) Profiles had a balanced distribution whereas teacher students of Building Profile have insufficiently associated education with “Information source” (5%) category. Furthermore, metaphors in “Key to success” category were mostly used by students of Electrical Profile. We notice the generally positive attitude towards the education as a key to personal and professional success. The three profiles had a balanced distribution in “Results” category. Given the little formal knowledge experience first year students have at the beginning of their studies, their focus on education as a product was to be expected. We anticipate that the deeper insight they will have in the training years on the processes of teaching and learning will make them increasingly aware on the importance of processes in education as well as that of products. 20% of students’ visions of Building Profile on education were expressed through synthetic qualitative labels that lead to the idea of general recognition the importance and necessity of education.

It can be said that faculty profile at which students are taught may have effect on the education indicating complexity and expressing the fact that the scope of education is the development, the modeling of the students' personality, the source of knowledge, the cultivation of the soul and the mind, ensure a successful future, it is essential and vital in life. A function of education is visible here, with more emphasis on development on personality than on social integration and development.

The distribution of metaphor categories used by prospective teachers for “teacher” concept according to faculty profile at which they are taught was examined. Categories of prospective teachers from the three profiles on "teacher" concept are given at Table 3.

Table 3. The distribution of metaphor categories according to faculty profile for “teacher” concept

	Model		Guide		Knowledge provider		Enlightener		Negative social status		Specific features		TOTAL	
	f	%	f	%	f	%	f	%	f	%	f	%	f	%
Building Profile	7	35	6	30	4	20	2	10	0	0	1	5	20	19.80
Electrical Profile	5	9.80	2	54.90	7	13.72	3	5.88	1	1.96	7	13.72	51	50.50
Mechanical Profile	8	26.66	1	40	4	13.33	2	6.66	0	0	4	13.33	30	29.70
TOTAL	20	71.40	6	124.00	15	47.05	7	22.54	1	1.96	1	32.00	10	100

As seen in Table 3, the teacher students of Building Profile used metaphors in “Model” category (35%), but did not use any metaphor in “Negative social status” category. Prospective teachers of Electrical (54.90%) and Mechanical (40%) Profiles used mostly metaphors in “Guide” category and saw the teacher as a guide referring to specific teaching and school learning activities. Teachers who develop individuals’ current skills and help students’ learning, who don’t just give the information to the students, but also want them to gain methods of obtaining information as well as to gain the skill of using knowledge that can educate the future individuals. Furthermore, metaphors in “Knowledge provider” category were mostly used by students of Building Profile (20%). Participants developed metaphors belonging to this category because they thought that teacher plays an important role in keeping and sharing knowledge in order to make decisions about the effectiveness of the process, structuring of the teaching process and directing the students in accordance with their interests and talents. Electrical and Mechanical Profiles had a balanced distribution whereas students of Building Profile associate insufficiently the teacher with “Specific features” category, but more with “Enlightener” category. Most of the students referred to teachers both as model, knowledge provider and as illustrators of certain specific features which recognize that the responsibilities and mission of teachers is driven not only by the formal professional attributions, but also by dedication, commitment, intelligence, communication. Building (35%) and Mechanical (26.66%) Profiles were extensive in “Model” category. Among the metaphors generated by students for the “teacher” concept, there is only one negative which means there may be some negative perceptions towards teacher depending on various factors such as personal experiences. Prospective students believed that a teacher is a person who is a guide, a model, a subject specialist in his/ her subject area, an enlightener who reads, investigates, finds out the unknown and seeks to

be helpful for students. Categories of prospective teachers from the three profiles on "teaching" concept are given at Table 4. When the findings about the metaphors that first year students use about "teaching" concept are concerned, it is seen that they expressed their opinions through metaphors organized in 6 categories.

Table 4. The distribution of metaphor categories according to faculty profile for "teaching" concept

	Process		Disseminating information		Guidance		Socialization		Preparation for the future		Reflections		TOTAL	
	f	%	f	%	f	%	f	%	f	%	f	%	f	%
Building Profile	4	20	8	40	5	25	0	0	1	5	2	10	20	19.80
Electrical Profile	9	17.64	23	45.09	9	17.64	4	7.84	2	3.92	4	7.84	51	50.50
Mechanical Profile	9	30	10	33.33	4	13.33	1	3.33	2	6.66	4	13.33	30	29.70
TOTAL	22	67.6	41	118.4	18	55.9	5	11.17	5	15.5	10	31.1	100	100

When Table 4 is examined, it is seen that faculty profile of prospective teachers at which they are taught differed on their metaphors used for "teaching" concept. First year students of Building Profile used metaphors in "Disseminating information" category (40%), but did not use any metaphor in "Socialization" category. Prospective students of Electrical Profile (45.09%) and Mechanical Profile (33.33%) used mostly metaphors in "Disseminating information" category, also. We emphasize that teaching is not limited to passing a volume of knowledge to a particular subject, but it involves systematic actions and operations undertaken to organize, develop and guide the learning activities performed by students. The three profiles had a balanced distribution in "Process" category, which means the teaching is seen as a process that involves students and is focused on the method of transmitting information, a continuous process of triggering, creating a hierarchy, transferring knowledge and maintaining the learning activity of the students. In this respect, students are actively involved in understanding and knowledge, taking into account the assumption that the mere presentation of content does not mean anything to the student unless it suggests/recommends/indicates concrete ways of cognitive and metacognitive regarding that content. Furthermore, metaphors in "Guidance" category were mostly used by students of Building Profile (25%), followed by Electrical (17.64%) and Mechanical (13.33%) Profiles. Naturally, we can talk about the predominance of a category, but it is essential that the major purpose of teaching is to promote and support learning and, implicitly, to achieve the proposed educational goals. These standards are designed to

provide guidance for understanding how students learn, what should be taught and the teaching skills necessary to support meaningful student achievement. While some students learn to self-regulate their learning, others need guidance, not only to acquire the strategies, but also to develop the conditional knowledge necessary to know how, when and where to these strategies can be applied appropriately. Teaching for learning is enhanced when students receive guidance for improvement work in an appropriate atmosphere, socializing, communicating ideas, feelings, experiences. Participants from Electrical (7.84%) and Mechanical (3.33%) Profiles developed metaphors belonging to “Socialization” category because they thought that communication, interaction, constantly changing ideas and feelings are an indispensable part of the process of teaching. The three profiles had a balanced distribution in “Reflections” category, which means first year students appreciate that present teaching is a vital and essential process, involves care, sacrifice and dedication. It is also important to notice the balanced distribution in “Preparing for the future” category for the three profiles is consistent with the main issues expressed by the actual policies and theories in education.

5. Conclusions

The present study was conducted to investigate prospective teachers’ metaphorical perceptions towards the concepts of education, teacher and teaching. The research method of metaphor analysis proves to be a potent tool for investigating the values, beliefs and attitudes of the participants of educational processes.

This study concluded that almost all of the 187 different metaphors generated by prospective teachers for the concepts of education, teacher and teaching were positive, which indicated that prospective teachers had positive perceptions towards these concepts. Among the metaphors generated by prospective teachers for education, teacher and teaching, there is only one which is negative. When the metaphors generated in the present study were analyzed, it was indicated that education was perceived as development, information source, results, key to success and enlightenment or given qualitative labels. The fact that the majority of students that fall into this category of answers equal education with building, developing and shaping personality signals an initial orientation of them towards teaching as supporting students’ positive evolution. Teacher students generally considered teacher as a person who is a guide, a model for students, plays an important role in keeping and sharing knowledge, is an illustrator of certain specific features. Characteristics of teacher can be perceived differently according to different variables such as faculty profile, level of education or experience. Prospective engineering teachers identified teaching as

disseminating information, process, guidance, attributes associate with teaching, socialization and preparing for the future. We emphasize that teaching is not limited to passing a volume of knowledge to a particular subject, but it involves systematic actions and operations undertaken to organize, develop and guide the learning activities performed by students. In this respect, students are actively involved in understanding and knowledge, taking into account the assumption that the mere presentation of content does not mean anything to the student unless it suggests/recommends/indicates concrete ways of cognitive and metacognitive regarding that content.

We consider that training the prospective teachers' reflection and self-reflection capability is crucial for raising awareness and for structuring personal and professional experiences, a principle that is pertinently argued by the studies of Korthagen et al. (2006). The investigation of pedagogical metaphors that describe the psycho-pedagogical vision proper to each student can represent not only an assumption, but also an essential step in the adoption of a metacognitive behavior in the act of designing and achievement of the educational act, and in increasing the capacity of students to become aware of their thoughts.

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