LEARNERS' METAPHORICAL IMAGES ABOUT CLASSROOM MANAGEMENT IN A SOCIAL CONSTRUCTIVIST LEARNING ENVIRONMENT

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ABSTRACT: The purpose of this study was to understand the conceptual change teacher candidates went through in the process of a constructivist-learning environment in Classroom Management Course. Teacher candidates' metaphorical images about classroom management were obtained before and after a social constructivist curriculum implementation. Prior to the implementation the images depicted "controlling" or "leading" type of images of classroom management that indicated a disciplinary vision about classroom management. After the implementation, although the metaphorical concepts did not change much, the teacher candidates' images of classroom management depicted more leading type of images that entailed messages of cooperative aspects and awareness of individual differences. This study showed that the learning environment and classroom culture may be effective on teacher candidates' conceptions of classroom management.

Key words: Metaphors, classroom management, constructivist curriculum implementation, teacher education

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Introduction

Classroom management is one of the most debated issues in the Turkish Educational System. Especially, public schools have a reputation for their overcrowding settings which are the main sources of discipline issues. Ultimately, teachers are likely to use an authoritative approach. They tend to alert to students' unnecessary talk and have a tendency to respond to these talks. Teachers most specifically expect students to listen to them or follow instructions quietly (Atıcı & Merry, 2001). The main misbehaviors reported in research are being noisy, not waiting for one's turn, complaining about peers, inattentiveness, out of task behavior (Akkök, Aşka, & Sucuoğlu, 1995; Atıcı & Merry, 2001). Research showed that the differences found between the English context and the Turkish context is mainly cultural specific: dependent on the physical environment and the resources available for education. For instance, the majority of Turkish classrooms consist of rows and aisles, and misbehaviors are dependent whether the students sit in the front or either near the wall or window side of the classroom. Here the physical structure and poor conditions of classroom contexts are found to be the main sources that trigger the misbehaviors observed (Türnüklü and Galton, 2001).

The metaphors "raw material, factory, manufacturer" are described as "the most representative" metaphors that explain Turkish elementary schools, although not very much preferred by teachers. As for the images that the teachers want to use, these contain elements of student-centeredness. These are metaphors that depict images of flower/garden/gardener, child/family/parent, player/team/coach, customer/restaurant/chef, and

audience/circus/entertainer type of metaphors (Saban, 2003). In other words, the actual classroom environment is described from an authoritarian or teacher-centered perspective, while the ideal one contains images of softness, care, and entertainment that have student-centered orientations. Consequently, it can be argued that metaphors used for classroom management for lower education in the Turkish context are similar to the ones indicated in the literature.

Although, there is growing literature related to the use of metaphors in education, there is little research that explains whether teacher candidates' metaphorical images reveal a conceptual change after a social constructivist curriculum implementation. This paper examines the influence of social constructivist teaching in a Classroom Management course on preservice teacher candidates' images of classroom management. Literature on classroom management foci on the importance of teachers being well-prepared, and well-equipped to ensure and maintain a learning environment that supports instructional goals (Darling-Hammond, Lepage & Akar, 2005). Social constructivism indicates that dialogue is an essential tool to promote and build on learners' cognitive development. Use of language and cultural tools provide ways of assigning meaning to what individuals encounter visually. As such it enables to broaden or enhance the interpretations of what is seen (Weade & Ernst, 2001).

A recent study urges the need to design teacher education programs in a social constructivist approach so that teacher candidates may overcome the difficulties they face as decision-makers in classroom management issues (Vanci Osam & Balbay, 2004). It is essential that preservice teacher candidates raise awareness of the essence of new perspectives on classroom management so that they may translate their learning into their actual teaching environments. Since classrooms are dynamic unpredictable contexts whose ultimate purpose is to create

optimum learning environments, we assume that social constructivist learning environments may equip teacher candidates to construct knowledge on how to maintain effective learning environments.

We constructed our theoretical framework based on two dimensions. First, we wanted to expose our teacher candidates to a social constructivist learning environment so that their use of language would provide ways of assigning meaning to classroom management issues that they may encounter visually. Second, using metaphors not only hold cultural or social meanings, but also display possible effects of the individuals' trajectories (de Guerrero & Villamil, 2002).

Therefore, it occurred to be essential to understand whether the images on classroom management the students differed with the ones they have had after being exposed to social constructivist learning contexts. This study is important to the extent it provides insights about how social constructivist learning environments may lead to conceptual change in preservice teacher candidates' images on classroom management, and their possible future practices.

Metaphors in Education

Metaphors are used for multiple purposes in education. They are remarkable tools that provide rich descriptions and meanings that reflect the culture of the individuals and the context they are in. Metaphors are possible means to illuminate cultural, institutional, and personal constructs (Wallace, 2001). Metaphors are also used as kernel comparison statements, e.g., metaphors for learning may indicate that cognitive acquisition and social participation (Elmholdt, 2003) may complement each other. While some reveal that metaphors shape our understanding of classroom practices (Marshall, 2001; Tobin, 2001) and teaching roles (de

Guerrero & Villamil, 2002), others view it as a way to describe a social phenomena of the time in which a particular theory is developed (Şimşek, 1997).

Their primary function in learning is to stimulate active learner-initiated thought processes, and working out the implications of these metaphors becomes the principal process of learning (Carroll & Mack, 1999). Students engage themselves in generating, negotiating, and situating ideas and meanings related to metaphors and their related concepts. In the case that students formulate opinions based on what they hear, they exhibit thinking which reinforces their learning. Such externalization may enable them to receive feedback from conversations. In return, this may be internalized through active assimilating and accommodating of the knowledge discoursed (Hung, 2002).

Vygotsky (1981, cited in Hung, 2002) views concepts or metaphors as tools that integrate social-cultural and the cognitive actions. Metaphors articulated are not only holding cultural or social meanings, but also display possible effects of the individuals' trajectories (de Guerrero & Villamil, 2002). Through associations and comparison of a concept with another one, the particular concept is made clearer because metaphors draw the links between words and propositions (Prawat, 1999). Social constructivist approach to teaching and learning entails the use of language as a social and cultural tool to promote and build on learners' cognitive development. Use of language provides ways of assigning meaning to what individuals encounter visually. As such language enables to broaden or enhance the interpretations of what is seen (Weade & Ernst, 2001).

Social constructivism is a culture, rather than a fragmented collection of practices. Teacher educators must be aware that one cannot make use of constructivism as a set of isolated

instructional methods grafted onto other traditional techniques. It "is a culture – a set of beliefs, norms, and practices that constitute the fabric of school life" (Windschitl, 1999, p. 752). This culture affects the way learners can interact with peers, relate to the teacher, and experience the subject matter. As such our philosophy in this study was to model a constructivist teacher who both coaches or scaffolds and collaborates during sessions. In other words, we tried to implement the notion that requires teacher educators to "do what they preach" (Holt-Reynolds, 2000; Jadallah, 1996; Kroll & Laboskey, 1996) both in the instructional as well as the classroom management approach.

Figure 1 illustrates a description of the dynamics in the social constructivist learning environment. As it can be seen in the figure, learning is an ongoing process fostered by previous knowledge and reflections on new learning. Collaboration is used as a means to reflecting on every individual's perceptions about the problems in groups, relate these to the cultural context, and find constructive solutions that were adaptable to the cultural environment. Collaboration was not an "ends" in itself, rather it was a "means" to new learning.

Insert Figure 1: Dynamics in Social Constructivist Learning Environment and Outcomes

Research on Classroom Management Metaphors

The earlier metaphors that described classroom management from an authoritarian, disciplinary or industrial perspective depicted teachers as managers or technicians (Bullough, 1994; Glasser, 1990; Lasley, 1994; McLaughlin, 1994). The traditional forms of teaching referred to the "banking" model that depicts the role of teachers as filling students by making

deposits of information. The student's role in the traditional sense is to store factual information (Friere, 1971, cited in Oldfather, Bonds & Bray, 1994). Later metaphors start to depict more learner-oriented models (Randolph & Evertson, 1994) that saw teachers as individuals holding efficient leadership qualities (McLaughlin, 1994; Weinstein, Woolfolk, Dittmeier, & Shanker, 1994). There is a shift from obedience to responsibility taking in student roles (McLaughlin, 1994). As such, research on constructivist teaching depicts teaching with the metaphor "midwife." A midwife's concern is to preserve the student's fragile newborn thought. Midwives as teachers focus on the students' knowledge rather than their own and contribute when they are needed (Belenky et al., 1987, cited in Oldfather et al., 1994).

According to Randolph and Evertson (1994) metaphors are used to conceptualize classrooms; and classroom events shape the thinking process by providing frameworks for what is possible in these settings. By trying to match images of learning and images of classroom management, the authors suggest that the work-oriented classroom and learning-oriented classroom differ in the way they are managed. They strongly believe that teacher education programs cannot divorce the discussion of classroom management from the one with content instruction because they see them as interwoven. This suggests that images of classroom management in such settings might represent more images of learning rather than controlling.

The literature on classroom management metaphors reveals context-based and experience-based images. Martinez, Sauleda, and Huber (2001) analyzed the reflections of 50 experienced, and 38 teachers with no classroom teaching experience yet in a course on instructional psychology. Results showed that most novice teachers revealed more constructivist metaphors than did experienced teachers. This finding provides teacher

educators with implications to implement teaching strategies focusing on collaborative reflection on metaphors as a way to promote an understanding of socially situated nature of learning. Ben-Peretz, Mendelson, and Kron (2002) found that metaphorical images selected by teachers were context-related. Most of the teachers with high-achieving students chose "the conductor" metaphor since it reflects giftedness, harmony, and togetherness, while most of the teachers with low achieving students preferred the caring image of "the animal keeper" metaphor. The above studies reveal that metaphorical images show context-related or experience-based influences. One wonders if there would be similarities or differences in the metaphorical images of classroom management when teacher candidates are subjected to social constructivist learning environments.

The specific research question is: To what degree does a social constructivist-learning environment promote conceptual change in teacher candidates' metaphorical images of classroom management?

Method

In this study a case study design was used. The participants were selected among 144 teacher candidates attending their third year as pre-service teachers in the Department of Foreign Language Education at Middle East Technical University (METU) in Ankara, Turkey. All students were randomly assigned to four sections as a common policy of the institution. For this study, two sections out of four were randomly selected for the social constructivist curriculum implementation (n = 76). The implementers of the study were the first author of this paper and a volunteer instructor with eleven and eight years of undergraduate teaching experience respectively. Among those 76 subjects only findings of 50 teacher candidates were

included due to the following reasons: few learners were absent either before (n = 4) the implementation, or after (n = 8) the implementation when the Metaphors Form was administered; and other learners (n = 14) did not include sufficient details to clarify the metaphorical image they reported in their Metaphors form.

Classroom Management course is a four-hour compulsory undergraduate course in teacher education. The course aims at improving participants' understanding of the concepts of classroom management and developing skills in establishing and maintaining an environment for learning in the classroom setting. The course is 4 hours per week and lasts for 14 weeks in total. Two hours are devoted to theoretical issues, and two hours for practice every week. With practice we mean, conducting social constructivist learning activities through using videos on classroom management issues, solving problem-based cases, conducting role plays and simulations, dealing with reflective writing tasks, and conducting debates based on theories or research articles read, and dealing with peer teaching and peer evaluation tasks for group work activities overall.

The theoretical hours consisted of recitation, discussions, small group discussions, and reflections based on the literature and research based on classroom management and the teacher candidates' personal experiences. Although the instructional planning was prepared as a blueprint, regarding the needs and interests of teacher candidates and the nature of constructivist learning environment, some worksheets, activities and tasks were flexibly used or new ones were added in the implementation process. Consequently, the students were exposed to social constructivist learning in which dialogue, collaboration, research, peer teaching, peer evaluation, authenticity, and problem solving tasks were emphasized.

The content of Classroom Management course is mainly based on current literature by Fred Jones, Carolyn Evertsen, Paul R. Burden, Larry Koenig, and Carol Weinstein. The instructional design was constructed by the authors based on constructivist theory. Both the first author and the volunteer instructor met every week for 1 to 2 hours to discuss their conducts in Classroom Management course as the implementers of the study. Also, after each four-hour session, both instructors reflected on the sessions and the activities they used for further planning and improvement. In other words, formative evaluation was used to validate that the sessions were conducted based on the weekly instructional plans. In addition, participant observations were conducted with an external observer for 4 weeks, and 4 four 2 hour sessions were video-taped in each group to validate the social constructivist curriculum implementation by the instructors. The field notes based on videotapes and observations were analyzed utilizing content analysis. Finally, data were compared with the instructional plan of the particular sessions, the implementers' reflections, and participant observers' field notes. Cross analysis of data indicated that the implementation was reliable.

Data Collection

In order to find the answer to our research question: Do social constructivist-learning environments promote conceptual change in teacher candidates' metaphorical images of classroom management, we used a Metaphor Form as means to collect data. Data were collected prior to and after the social constructivist implementation in Classroom Management Course as a reflective activity. To understand the conceptual knowledge the teacher candidates held regarding classroom management, they were asked the following questions prior to the implementation: "What metaphors or images come to your mind when you think about

classroom management? Why do you associate that particular metaphor with classroom management?"

The participants wrote down their thoughts in a reflective diary and reflected on their images of classroom management in small groups. Then, the groups reported and discussed their findings with the entire class. Next, the teacher candidates were subjected for 11 weeks to social constructivist curriculum implementation in their Classroom Management course, and were asked the same questions after the implementation. The teacher candidates were required to submit a report involving a reflective report comparing and/or contrasting the metaphorical images they articulated prior to they started taking Classroom Management course and when they finished the course. Since the teacher candidates were in their final examinations period, we were unable to have those reports shared with the entire class.

Data Analysis

Data analyses of the metaphorical images reported were conducted by exploring the themes and examining the conceptual change in the images of classroom management reported prior to and after the implementation. First, the images expressed by learners were categorized meaningfully to draw conclusions. With a field professor specialized in curriculum and instruction, the themes were mutually identified and called as images that depicted controlling or leadership aspects, caring aspects, diversity aspects, chaotic or unpredictable contexts, and images that depicted goal-oriented aspects. These themes were shown in tables, and the themes were crosschecked with an external participant. Finally, the metaphorical images were put in tables, and were analyzed with regard to whether conceptual "change" was observed.

The reliability of the thematic coding was verified by a non-participant researcher. For reliability purposes, the non-participant researcher looked at all the metaphorical images from a holistic perspective and discussed with the authors on why she agreed or disagreed with the themes constructed, e.g. relating flower garden to diversity images. The most difficult part was finding a suitable concept for the themes that brought together the images bridge, catalyst, chain under one roof. The authors negotiated with the non-participant researcher based on the reported data, and concluded that this theme be called goal-oriented images. Also, the non-participant researcher randomly picked the reports of 10 teacher candidates in the first raw data reports. Next, she took the final reports of the same 10 sample, and crosschecked the images and descriptions provided in the thematic tables, and the researcher concluded that the report was found to be completely consistent with the raw data.

Results

Results show that most of the teacher candidates mainly held a traditional view of classroom management that depicted a controlling, ruling and empowering image of CM as an entry behavior. However, after the implementation data indicate that teacher candidates converted the descriptions of their metaphors into images that show awareness of individual differences and use of leadership skills to enhance collaboration and success. In other words, the control-oriented images converted into learning-oriented images. In reporting the findings, we undertook each theme separately and provided a table to enable the reader to compare the images that were reported before the social constructivist curriculum implementation and after the implementation.

Metaphors Related to Leadership and Controlling Images

As Table 1 displays, metaphors such as "coach and orchestra conductor" were used to describe a control-oriented image of Classroom Management prior to the implementation. Teachers were described as persons who manipulate students, and possess power and authority. For instance, a team coach possesses all the expertise, the power to control his or her players and lead them to success. While the orchestra conductor is the person in power to bring harmony and preciseness in the group, there is no interaction among the players. Rules are set strictly and players or learners need to obey those to enhance harmony. Thus, success is in line with harmony, obedience or discipline. Classroom management is described from a disciplinary teacher centered perspective.

On the contrary, data obtained after the implementation revealed similar metaphors holding different understandings. For instance, the coach or conductor is not perceived as the authority rather is perceived as the leader who is aware of individual differences and needs, and through successful collaborative work both parties enhance a mutual goal. The teacher is the motivator and facilitator. She or he provides cooperation among all members so that they can be successful in enhancing their goals. The roles among players are divided justly and everybody is considered as an active participant in the learning process. The student's needs, interests and skills are of main concern to be successful. Thus, student-centeredness is an important aspect in classroom management issues. Knowledge about classroom management pedagogy and experience in teaching are the assets required to become a successful teacher.

****insert Table 1: Metaphors Related to Controlling and Leadership Images****

Metaphors Related to Caring Images

The second theme of metaphors depicted caring images. Table 2 shows that although the metaphors are about caring images, they indicate teacher-centeredness. The teacher is perceived like a mother who is in charge, and knows what is best for the child. The teacher seems to take all responsibility to take care and protect the students. Although students are likely to be the focus, the teacher is completely responsible to build a peaceful environment distant from any disruptions or threats. Quietness or peace in the class seems to be more prominent than the instructional process. However, after the implementation those control-based peaceful contexts have converted into images that reflect variety, and diversity for classroom learning. Active learning, joyful learning, increased student teacher interaction, respect towards all kinds of differences have become the se qua non's of the caring images after the implementation. Caring also includes positive attitude towards the learners and classroom and this attitude of the teacher candidates retains. For example , the image "plus " reflects a positive images prior to and after the implementation.

**** insert Table 2: Metaphors Related to Caring Images****

Metaphors related to Elements of Diversity

Table 3 displays the metaphorical findings that relate to diversity images. It can be seen that the metaphors depicted images that contained certain qualities such as "goodness and badness" or "organized and disorganized" contexts. The teacher as the expert knows how to separate the good and the bad or how to plough a garden to retain the good quality or the greengrocer

knows how to separate the fresh or good vegetables from the rotten or bad ones. The students are labeled as good ones or bad ones. Obedience relates to goodness, and misbehaviors of students relate to badness. Ultimately, the teacher needs to be equipped to control that particular cultural context. After the implementation, the same metaphors that depict elements of diversity are used, but those bear different meanings. The images refer to a teacher-centered environment in which the teacher needs to deal with differences and diversity in the classroom. Rather than labeling characteristics of bad or good quality, images of diversity reflect differences or diversity in student needs, in their characteristics and skills. The teacher is described as a person who is aware of those differences and takes measures, such as different instructional strategies, to meet student needs.

**** insert Table 3: Metaphors Related to Diversity Images ****

Metaphors Related to Chaotic or Unpredictable Contexts

Findings indicate that a few of the teacher candidates have associated CM with that of a battlefield, fight, and Columbia rebellion in their reports prior to the implementation (see Table 4). These images show that the teacher candidates in this study viewed classroom settings as unpredictable environments where lots of disruptions occur. Such findings may relate to student teachers earlier experiences with overcrowded classrooms and the dispositions they carry to make students sit quietly. This indicates that student teachers prioritized control over instruction in their early metaphors. Unpredictability in the classroom is a tiring process for the teacher. In the traditional sense, the students are urged to show complete obedience to the teacher so that teachers can continue with their instruction in a smooth way.

After the implementation, although the same metaphors are reported, the meaning of those metaphors changed. For instance, the battlefield that describes a class full of problems and chaos is described the teacher's struggle to promote efficient learning environment. After the implementation the unpredictable events in the classroom bear new meanings. The student teachers treat chaos as understanding the reasons behind disruptions and overcoming those by taking essential precautions. Those images imply that student teachers gained awareness of possible events in the classroom and understanding those problems with regard to student needs and choices is emergent for the teacher. The Columbia image, for instance, refers to instability in the classroom. After the implementation, the Columbia image converts into a symbolic country (classroom) in which the leaders or managers collaborate and respect and try to meet the needs of all citizens. Thus, a single teacher is not accepted as the sole responsible person in the class. There are a number of people who share this responsibility and need to promote a healthy learning environment in which learning differences are respected. Classrooms are unpredictable contexts like the box of Pandora, but student teachers consider their preservice education as an environment that fills their needs about classroom management pedagogy and the box is not mysterious anymore. Rather it is filled with essential knowledge on classroom management pedagogy.

**** insert Table 4: Metaphors Related to Chaos and Unpredictability ****

Metaphors Related to Goal-oriented Images

Beside all the metaphorical images reported above, there is a set of metaphors that depict "goal-orientedness" images prior to and after the social constructivist curriculum implementation. Knowledge about classroom management pedagogy is accepted as a tool or a

"catalyst" for the teacher. When the teacher is equipped with the essential skills the teacher can cope easily with unpredictable contexts. Knowledge about classroom management pedagogy brings an organizational structure that combines the different dimensions of education to reach a specific goal. Being equipped with classroom management skills in that sense alleviates the instructional process for the teacher and contributes to student learning.

**** insert Table 5: Metaphors Related to Goal-oriented Images ****

Conclusions and Discussion

Results show that most teacher candidates held a traditional teacher-centered view of classroom management (CM) that depicts a controlling, ruling and or empowering image of CM as an entry behavior. Those images are described as the orchestra conductor, football match, coach, theatre play, leader, boss, shepherd, and lion. There is a strong link observed between classroom management and discipline. Especially, the metaphorical images that reflect chaos and unpredictability are indicators of such a disciplinary environment. Student teachers saw the classroom as a battle field or the coach as the leader who controls (or disciplines) learners and the teacher needs to be equipped with those strategies to cope successfully with emerging unpredictable issues. These findings imply that student teachers may have traditional dispositions about classroom management before they were exposed to social constructivism, because research says that preservice teachers' applications are mainly influenced by their past educational experiences as students (Bramald, Hardman, and Leat, 1995).

This study is in line with other research with respect to the images of classroom management. Martinez et al. (2001) found that many of the teachers shared a traditional view of teaching

and learning in their metaphorical images. The learners seemed to be encouraged to report their conceptual understandings about classroom management that did not originate from their textbooks, but rather were expressions of how they internalized the culture of the learning environment (Weinstein et al., 1994). In this study, the metaphorical images reported prior to the implementation showed control-based or disciplinary images and converted into images that reflected knowledge and awareness about different learning styles, and individual differences and needs after the implementation. For instance, an orchestra conductor is precise and well-planned, responsible to direct an organized environment, there is no interaction among players, and rules are obeyed to enhance order. On the contrary, after the implementation, teacher candidates reported that an orchestra conductor holds essential knowledge to help learners enhance course objectives, operates cooperatively with all musicians, uses time efficiently and cares about individual differences, makes learning more attractive, and cares about having a safe environment.

After the social constructivist implementation teacher candidates mostly preferred to use the same metaphors, however, they attached different meanings to those images. The metaphors after the implementation converted into images that showed awareness of individual differences and the essence of holding of leadership skills as tools to enhance collaboration and success in the classroom. Especially, most of the images that describe learning-based contexts supersede metaphors that mostly contain obedience-oriented images.

According to the literature mental processes or images are the products of the social environment (McLaughlin, 1994; Weinstein, Woolfolk, Dittmeier, & Shanker, 1994). It may be that the learning context the students were subjected to build awareness of learning-based environments. Especially, in the way teacher candidates experienced the social constructivist

tasks and activities, and the instructors' attitude overall may have been a model for them, and those experiences may have shaped their metaphorical images about classroom management. Yet, to claim the latter, more descriptive research is needed. Morine-Dershimer and Reeve (1994) suggest that the metaphoric language used by prospective teachers may bring tacit beliefs about teaching and learning to the surface and question them.

Consequently, having focused on different approaches related to classroom management and creating effective learning environments, student teachers may have adopted these into their knowledge construction (Weinstein et al, 1994). Consequently, they may have constructed a student-centered approach about classroom management that mainly focuses on the instructional process and student-centered needs and interests.

This study may offer to the understanding of teaching and learning theories in teacher education from several respects. First, using metaphors in teacher education is relatively a new approach. In this study it is found that the use of metaphors can be a powerful tool to help teacher candidates promote new understandings of CM through social interactions and individual internalizations (reflections) of new understandings. Second, when teacher candidates are put in social learning environments that model collaborative learning, a significant difference can be seen in the description of the metaphoric images. Although this finding cannot be generalized, it underscores that modeling in teacher education may promote conceptual change in teacher candidates' knowledge construction. Such conceptual change is hoped to reflect teacher candidates' actual teaching practices.

A limitation, however, is that we could not further research if teacher candidates apply the conceptual change they acquire into their actual teaching practices. We hope that this study

will be an incentive to conduct a longitudinal study in this respect. Third, the use of metaphors in teacher education, specifically in dealing with classroom pedagogy, may appeal to teacher educators and practitioners. A new collaborative culture and understanding in their classroom practices can be constructed for the sake of modeling what teacher educators preach. Finally, creating constructivist teaching and learning environments in teacher education is becoming widespread. Understanding the conceptual change teacher candidates go through in the description of metaphorical images can be an incentive to increase the use of metaphors and social-constructivist learning environments in teacher education programs.

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FIGURES AND TABLES

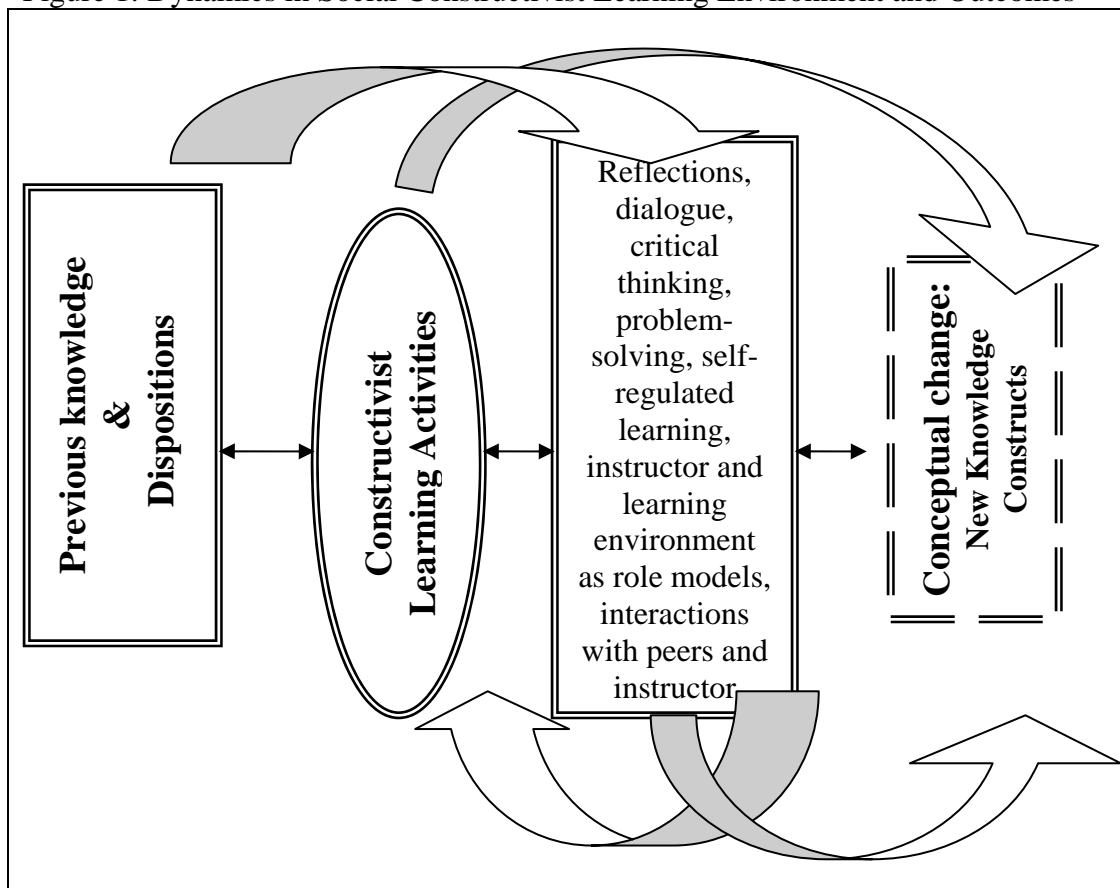Figure 1: Dynamics in Social Constructivist Learning Environment and Outcomes

Table 1: Metaphors Related to Controlling and Leadership Images

Prior	Post
1. **Orchestra conductor** is precise and well-planned; responsible to direct an organized environment; no interaction among players; rules are obeyed for enhancing order. (n=7)	1. **Orchestra conductor** holds essential knowledge to help learners enhance course goals; operates cooperatively with all musicians; uses time efficiently and cares about individual differences; makes learning more attractive; and cares about having a safe environment.(n=7)
2. **Football match** requires knowledge about a bunch of tactics to succeed. (n=3)	2. **Football match** emphasizes cooperation, in which the coach is the monitor in the play. (n=5)
3. **Coach** holds knowledge of tactics. **Team coach** deals with problems, and leads the team to success. (n=3)	3. **Coach** is the motivator and facilitator. Provides cooperation among members to enhance goals. **Team coach** holds good organizational skills and considers individual differences. (n=4)
4. **Tree** is a like a teacher as knowledge transmitter and one who provides order (the branches radiate from the trunk). (n=3)	4. **Boss** sees students as coworkers and gains their cooperation in decision-making regarding the context they are in. (n=1)
5. **Theatre play** in which the teacher is the director and students know their roles. (n=2)	5. **Shepherd** shows the way that is safe and fruitful for development. The sheep cooperate with the shepherd to reach their goal. (n=1)
6. **Director** in a film studio sets rules to succeed. (n=2)	6. **Tree** means to combine different aspects in the classroom to construct effective classroom management. (n=2)
7. **Lion** is the manager, and the ruler. (n=2)	7. **Navigating** (replaced with mothering) is about the skills and talents the teacher needs to direct a ship. Good navigation requires knowledge about good teaching
8. **Leader** is a teacher who manages the classroom in an organized way.	

(n=1)

9. **Boss** as a loving, and caring person [this concept matches with a caring image as well]. (n=1)

10. **Shepherd** is a ruler, and administrator. (n=1)

11. **Brain** which represents the idea that it controls the whole body. (n=1)

12. **Driving** requires a license which helps one to be careful and think about the consequences. (n=1)

skills, knowledge about how to handle with problems and minimize disruptions. "A navigator knows what to do on a stormy day." (n=1)

8. **Governing a country** requires planning with regard to people's differences, needs, and readiness for unpredictability. (n=1)

9. **Horse-cart** in which the horse rider is the leader. The teacher holds the halter. There is balance between authority and laissez-Faire approach. (n=1)

10. **Driving** requires knowledge of diversity in class, diverse strategies and rules. To drive safely the teacher needs the essential skills and experience to be successful in class. (n=1)

Table 2: Metaphors Related to Caring Images

Prior	Post
1. **Butterfly** (represents a student) is vulnerable, and should be handled with care, and smoothness. (n=1)	1. **Butterflies** are fragile. They need caring environments where learning can occur joyfully and efficiently. The teacher and the learners should have a close relationship that is distant from any threats. (n=1)
2. **Peace** is about effective classroom management. Teaching requires a peaceful environment. (n=1)	2. **Snow flake** reminds one of a smooth disciplined environment. Each snowflake has different characteristics (shapes), yet they represent a well-arranged view. There is an orderly movement that indicates respect to individual differences. (n=1)
3. **Snow flake** is like a puzzle that needs to be put together, in a very delicate way. (n=1)	
4. **Mothering** is an example of good behaviors of kids in class, and the teacher having good mothering skills. (n=1)	3. **Plus** has a changing meaning. Empathy, harmony, interaction between individuals, and pleasure in teaching impact positively on the learning and teaching process. (n=1)
5. **Plus** represents empathy, positive attitude in class, and pleasure in the teaching process. (n=1)	4. **Window** represents that knowledge about classroom management is like looking through a clear window. The teacher is equipped with effective instructional strategies, issues related with rules, managing time, and misbehaviors, and those skills make the teacher see clearly. (n=1)
6. **Window** is an image of having clear ideas about classroom management. It is like looking from the window. (n=1)	

Table 3: Metaphors Related to Diversity Images

Prior	Post
1. **Cooking** requires patience; care for different goods; and trial and error method for the best result (n=1). 2. **Cookbook** contains different recipes for different tastes. (n=1) 1. Flower **garden** in which the gardener has the foundations of how to grow different plants efficiently. (n=1) 2. **Greengrocer's** may have good and bad vegetables. The greengrocer knows how to retain the products in healthy conditions. (n=1) 3. **Shopping center** contains an orderly arrangement of goods. It requires storing of all important information for effectiveness. (n=2) 4. **Keyboard** has a lot buttons that one can use for effectiveness. (n=1) 5. **Country** with different people and the teacher needs to govern this class. (n=1) 6. **Scuba driver** is a person who needs the skills to survive in the unknown. (n=1)	1. **Cooking** represents the image of a teacher who is not only explaining, but is motivating the students to gain their cooperation. Teacher's knowledge about strategies helps teachers cope and provide ways to give learners choice. (n=2) 2. **Flower gardener** holds awareness of diverse student needs, knows about the physical arrangement. Classroom management is about having a place surrounded with sunshine and a fence. (n=2) 3. **Shopping center** (replaced with peace) represents variety and harmony for learning. Shopping can be pleasant an enjoyable. There is participation in different classroom activities. (n=2) 4. **Greengrocer's** skills provide effectiveness of all kinds of differences in the class regarding race, gender and ethnicity. (n=2) 5. **Country's** management requires knowledge about governance and laws. As such the teacher needs to know about the foundations of classroom management and teach according to individual differences to become successful. (n=2) 6. **Scuba diver** dives into the ocean that is complex and full with different animals that represent diversity of students (culture, intelligence) that are mysterious. The

	teacher's task is to discover the depths to be helpful. (n=2)
	7. **Keyboard** helps one operate the computer efficiently and use different programs. The teachers needs to hold knowledge about how to manage recitations group work and other issues by using different skills and strategies to have effective classrooms. (n=1)

Table 4: Metaphors Related to Chaos and Unpredictability

Prior	Post
1. **Traffic with jams** need to be avoided. Police officer organizes the flow in traffic. Driving license enables the teacher to act carefully and think of its consequences. (n=1)	1. **The flow of the traffic** is in the hands of the **officer**. The officer (teacher) needs to know the foundations of how to have effective classrooms distant from disruptions. The purpose is to go on with the instructional program in a smooth way to enhance learning. (n=2)
2. **Box of Pandora** in which the foundations of classroom management will help one handle the unknown. (n=1)	2. **Box of Pandora** is not the unknown if the teacher holds knowledge about classroom management skills and strategies. Conversely it is filled with knowledge about classroom management. (n=1)
3. **Battle field** classroom management is like a battle between the teacher and students. (n=1)	3. **Battle field** is field in which the students and the teacher use the right skills and materials to battle enhance learning. The teacher's role is to consider the needs of students and should make decisions about different dimensions in the classroom, which all indicate the struggles or battle of the teacher. (n=1)
4. **Columbia**: There is true peace observed between the people and governments. (n=1)	4. **Columbia** represents a country where there is collaboration among diverse parties. The teacher and the students collaborate. Individual differences are respected and healthy learning environment is created. (n=1)
5. **White**: symbolizes the unknown; attracts the idea of discovery. It is a spectrum of seven different colors. (n=1)	5. **Playing the piano** (replaced with white): Effective classroom management requires expertise, practice, and effectiveness. It requires engagement in presentations, demonstrations, preparations of portfolios before playing in the concert (in the actual classroom). (n=1)

Table 5: Metaphors Related to Goal-oriented Images

Prior	Post
1. **Bridge** represents achieving the aims. One cannot pass the river without knowing the foundations. (n=1) 2. **Catalyst** gives speed to the ongoing action, and classroom management techniques provide the teaching process to occur in a fast and organized way. (n=1) 3. **Chain** links the forms of teaching with management. (n=1)	1. **Bridge** represents the learning process. Going over the bridge is a complex activity. (n=1) 2. **Catalyst**'s main goal is to teach. Knowledge about classroom management skills is like a catalyst to realize effective learning of students to enhance their goals. (n=1) 3. **Chain** represents an environment that is not limited with effective instruction only. It provides endurance, fulfillment of goals, effective use of material, and flow of activities. (n=1)