Article

Analytical Study of Teacher Educators' Metaphors of Teaching

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Abstract

Teaching metaphor is an important phenomenon which can be used to determine teachers' perceptions regarding their job and their workplace (Turunen, 2003). This study was aimed to explore the metaphors of junior and senior teacher educators to get insights of what teaching was for them. A comparative analysis between the junior and senior teacher educators helped to understand how these metaphors changed over time. Data for the qualitative study were collected from the districts of Sargodha, Khushab and Mianwali situated in the province of Punjab, Pakistan. Fifty teacher educators teaching at postgraduate level participated in the study and filled in the survey questionnaire. The data were coded and analysed qualitatively. Six themes emerged from the data: religious obligations, economic activities, nature compatibility, life processes, emotional affiliations, and thought provoking activities.These themes were

compatible with Chen's (2013) classification of teachers' personal metaphors. The implications of metaphors could be used to enhance critical thinking of teacher educators to improve the quality of education.

Keywords: Chen's classification, comparative analysis, in-service, metaphors, teacher educators

Introduction

A picture provides only a static image while a metaphor gives a theoretical framework of how one thinks about a particular thing, event or an experience (Saban, 2007); thus, humans use words and images to interpret their reasons of existence, their practices, and even their world view. Lakoffand Johnson (1980) explain that a metaphor is a mechanism of mind, which allows us to interpret a physical or a social experience that we have been part of to provide understanding of countless other related subjects.The essence of a metaphor is to understand and relate one kind of thing in terms of another (Lakoff & Johnson, 1980). It is used as an intellectual tool for organizing and relating information. Metaphor is a common practice for talking about objects or events appropriate to other objects or events.

Over the past two decades, researchers and teacher educators (TEs) have shown a considerable interest in metaphors as a mean to better understand how teachers perceive and view school life, students, curriculum, teaching, and learning (Gillespie, 2005). What teachers think of their work and workplace will directly influence their teaching practices (Turunen, 2003); therefore, it becomes

vital to probe into their perceptions. These metaphors help researchers and policy makers to understand how the teaching and the learning community view the education system and it helps them to detect and mend the loopholes that exist in the system.

This study is aimed to explore personal teaching metaphors of junior and senior TEs as a source for assisting them in their professional growth and help administrators and policy makers understand what perceptions TEs carry about teaching and learning, so that they can help and assist them and further change their policies to fit their needs. Comparison of metaphors was carried out at two levels: metaphor comparison of junior and senior teachers and metaphor comparison against Chen's classification of metaphors. Thus, the study tried to answer the following questions:

1. What are the personal metaphors of junior and senior TEs?
2. What is the difference between the metaphors of senior and junior TEs?
3. Which classified teachers' personal metaphor categories (Chen, 2003) are more likely to be found in the TEs of Pakistan?

Literature Review

A metaphor is a charisma of communication in which some similarity between words or expressions is suggested that signify another word or expression. This could give assistance to the readers or auditors to comprehend something about the object or thought to which the metaphor is being specified. Metaphors make communications and inscriptions not only dynamic, but also energetic, enthusiastic, and fascinating. They communicate a large number of meanings through a single word, and thought provoking for readers

and listeners because they suggest direct relationship indirectly. According to Yob (2003), a metaphor is employed when one wants to explore and understand something obscure, abstract, original, or highly speculative.

The previous schools of thought take metaphors as linguistic singularities, which only have the characteristics of linguistic; however, the modern approach considers it as a communicative tool where the purpose of the communicator is to be more logical through its use(Yob, 2003). Therefore, its purpose is no more than what it used to be where metaphor was used for embellishment of literature to suggest a formal meaning in poetry or classical speech. Since 1950s, when intellectual science was introduced as a new subject of study, the use of metaphor has extended from philosophy and literary criticism to numerous other disciplines, for example, psychology, linguistics, cultural anthropology, social sciences, and education. Each has its own needs and uses of metaphors (Turunen, 2003). Nevertheless, even in 1970s and 1980s, metaphor was considered by most linguists and scholars to be an irregular part of speech, a poetic elaboration that was merely used as an ornament for a language (Turunen, 2003). According to Zhao, Coombs and Zhou (2010), metaphors are not just figures of speech, but constitute a vital mechanism of the mind allowing the modelling and reflection of preceding experiences.

Metaphors are usually accessible and comprehensible for communicators and the communicated. They are useful in this respect when they associate an unfamiliar or abstract with something familiar or concrete. It is specifically the acquaintance and the tangibility of a metaphor that may enable clarity of a vision

or a thought. Even though a metaphor is a product of the thoughts, yet it has usually been identified with the art of poetry and literature (Massengill & Mahlios, 2008). The brain is always vigorously busy in developing ideas through metaphors to make logic, give inspiration to the description, and highlight certain clarifications (Fenwick, 2000). If metaphors could be considered a frame of awareness, a one-sided and incomplete vision can be viewed in a characteristic way(Fenwick, 2000). Thus, metaphors can be understood as a psychological modelling experience leading to new forms of conceptual insight (Zhao, Coombs, & Zhou, 2010). Hence, it can be concluded that to relate metaphors to only poetry, arts and music would be unjust to the phenomenon of metaphoric creation. The conceptualization and usage of a metaphor is a much more complex process of a human brain that deals with a wider range of one's communication skills.

Our consideration of the world around us is infiltrated by theoretical metaphors and all languages have metaphors (Lakoff & Johnson, 1980). It exists in everyday conversation and has a definite level in culture and tradition. People use metaphors to give sense to their lives for better comprehension and sharing knowledge. As metaphors give logic and self-understanding to our lives (Lakoff & Johnson, 1980), it is expected that the metaphors should help teachers convey knowledge to students during the teaching process (Delmas, 2004). It is recommended to the educators training in the fields of mathematics, science, and statistics education to use metaphors and other types of analogy as teaching devices (Delmas, 2004). According to Buaraphan (2011), metaphor creation is an effective method to extract the complexity of opinions about teaching and learning that are deeply rooted and nested in prospective teachers.

Metaphors are helpful in describing, visualizing, and making sense of the world around us. They offer a great way to help create images for others of what teaching means to a teacher. Not only are metaphors a wonderful way to portray understanding of teaching to others, it is a helpful way for teachers to focus on their own teaching style. Many educational metaphors exist that describe the processes of teaching. These are the metaphors with which educators are most comfortable as teachers and communicate clearly their philosophy of teaching, reveal how teachers see themselves in relationship to students and what they think it means to teach (Thomas & Beauchamp, 2011).

Metaphors are used to explore teachers' thinking and beliefs. Numerous scholars have worked on metaphors of teaching and have donated to a growing body that proposes teachers metaphorical imagery of the process of teaching. This helps them to visualize their attitude towards teaching and how they go about implanting the teaching metaphors in their work (Martinez, Sauleda & Huber, 2001; McGrath, 2006).Teaching metaphors can also be used to assess and strengthening the capability to highlight positive and negative experiences, thus helping teachers to express themselves more freely (Kemp, 1999). Researchers in the field of education identify the enormous potential of metaphors for research and practice. It has been experienced that metaphors help expose the ways teachers and learners "construct representations of themselves and their experiences" (Kramsch, 2003, p. 125). A classification system for metaphors of teaching was developed by Chen (2003). Chen's classification system of teachers' personal metaphor uses five categories each with its own descriptors, which are as follows:

Art-oriented metaphors. Teaching is considered as a unique experience of creativity and imagination. Art oriented metaphors also focus on the creative side of teaching including conclusion, insight, sensitivity to the needs of students, and spontaneity in responses to the students' questions and demands.

Business-oriented metaphors. This metaphor believes in knowledge as a service and learning and teaching as receiving and delivering process. Teachers give knowledge, stimulate the value of good, and provide excellent follow-up service for students in the form of responding to questions after lesson by providing feedback, appreciation, and encouragement. Business metaphor places an emphasis on the satisfaction of students' needs.

Science-oriented metaphors. Since there are guidelines and principles of teaching, the rules of teaching can be studied and modelled making it possible for anyone to reproduce the results created by expert teachers. Teaching is a process with observable laws that can be verified empirically, aiming to imparting knowledge and skill to the learners in a consistent and predictable manner. Science oriented metaphors focus on teaching strategies, planning, and schemes made for teaching process.

Power-oriented metaphors. These metaphors focus on the issues of control; whether the teaching should be teacher oriented, student oriented or shared control.The role of a teacher is of a leader, facilitator, and collaborator. Power-based metaphors suggest that the teacher does not have to be a decision maker all the time.

Personal dynamics-oriented metaphors. This focuses on the impact of the teaching on teacher's life. Teachers agree to the fact that the teaching profession is not problem-free. Teaching is a complex process that requires self-management by the teacher inside and outside the classroom. It can be thrilling one day, frustrating the next. The abilities required from teachers are to manage stress, perform multi-tasks, and balance school and home responsibilities.

It is supposed that individuals' opinions and attitudes are associated with performance. Metaphor well-thought-out as a methodology consequently considers the value of metaphoric language in revealing the unconscious views, attitudes, and opinion (Seferoğlu, Korkmazgil & Ölçü, 2009). Hence, metaphors chosen by TEs in order to represent the teachers and the learners reveal their ideas; therefore, their attitudes towards issues connected to teaching and fundamental opinion behind the practices of teachers can be depicted.

Methodology

Data were collected by asking teachers to fill in an open ended questionnaire and explaining their point of view regarding teaching through narrations.This research study was aimed to explore and compare the junior and senior TEs' metaphors about the teaching profession. Furthermore, the metaphors found were contrasted with Chen's (2003) classification to observe the similarities and differences.

The sample

The sample of the study was representative of three districts of Sargodha division; Khushab, Mainwali and Sargodha. Purposive sampling was preferred by keeping in view specific criteria of the sample selection, that is, years of service and qualifications of the TEs. Firstly, the criteria of sample selection for junior teaches were minimum one year of service, while for senior teachers it was minimum five years of service. Secondly, minimum qualification for junior teachers was master's while for senior teachers it was Ph.D.The overall sample size was 50 educators from various government institutes. There were 16 junior and 21 senior TEs from Sargodha district; four junior and six senior TEs from Khushab district, and three junior and zero senior TEs from Mianwali district. A total of 23 junior and 27 senior TEs voluntarily participated in this study. Consent was taken from the participants and the size of the sample was considered manageable

The instrument

The data collection instrument was an open ended self-developed questionnaire. The questionnaire consisted of three parts: the first part included examples of metaphors; in the second part, the participants had to write their metaphors about teaching; and in the third part, they were asked to elaborate these metaphors using detailed narrations in English or their own native language. It was kept in mind that the narrations of TEs could prove helpful to understand the complex aspects of their conceptions about teaching, experiences, motivators, values, ethics, standards, stressors, and other features.

Data analysis

This study was aimed to analyse junior and senior TEs' personal metaphors of teaching. The data collected through open ended

questionnaires were coded and analysed qualitatively. Thematic analysis was used to unveil the perceptions and experiences of TEs and a code book was created by using the responses of the participants. Open coding and axial coding were used to code the qualitative data. Metaphors collected from TEs were analysed with Chen's (2003) classification of metaphors.

Findings

In order to explore the insights of TEs, their metaphors of teaching was explored. The participants were asked to fill in a questionnaire and inscribe their personal metaphors of teaching. Six themes emerged out of the data: religious obligation, economic activity, nature compatibility, life process, emotional affiliation and thought provoking activity.

Table1. Frequency of themes of metaphors of junior and senior teachers

S#	Categories	Junior Teachers	Senior Teachers
1	Religious obligation	5	4
2	Economic activity	3	2
3	Nature compatibility	6	6
4	Life process	5	4
5	Emotional affiliation	-	5
6	Thought provoking activity	4	6
	Total	23	27

Using these six themes, the metaphors of junior TEs were compared with metaphors of senior TEs and also written metaphors were analysed and compared by using Chen's (2003) classification for metaphors of teaching: Art-oriented, Science-oriented, Business-oriented, Power-oriented, and Personal dynamics oriented. Chen's (2003) descriptors were used to situate participants' metaphors. The indicators of Chen's (2003) classification were compared with the responses of TEs and percentage was drawn. The percentage also showed the category of Chen's (2003) metaphors, which are most likely found in the TEs of Pakistan. The content, theme and the awareness collected from the Personal Metaphor of Teaching (PMT) was identified and discussed.

Comparison of junior and senior TEs' personal metaphors of teaching

The results of this study showed that senior teachers confidently expressed metaphors with sufficient details and explanation as they were experienced in their field and had theoretical knowledge about the teaching profession. The results of category wise comparison of junior and senior teachers showed that both groups of TEs expressed equally in all the categories except emotional affiliation. This may be due to the fact that the juniors spent less time teaching as compared to their more senior counterparts. Since emotional affiliation is a time related metaphor; therefore, it can be accepted that if more time is spent in a particular environment, a person tends to become emotionally affiliated to it. Metaphors of senior teachers were a blend of maturity, knowledge, involvement, understanding, and experience which were rare in the metaphor of junior teachers. The metaphors of junior teachers showed that they related their teaching with the latest technology, which gave the expression of interest in innovation, modernization, and progress. Both junior and senior TEs equally narrated metaphors in economic activities which showed that financial concerns were equally essential for both groups.

Table 2. Comparison of TE metaphors with Chen's metaphor classification

Chen's classification	Emerged Themes	Metaphors narrated
Art-oriented metaphors	Nature compatibility	flower, painting, canvas, candle
Business-oriented metaphors	Economic activity	shop-keeping, leadership, shopping mall
Science-oriented metaphors	Life processes	solar system, heart-beat, mobile phone, mirror, lamp
Power-oriented metaphors	-	-
Personal dynamics-oriented metaphors	Emotional affiliation, Thought provoking activity	stream, shelter, ocean, valley umbrella, rain, tree, road trip,
-	Religious obligation	reciprocal change in behaviour.

Art-oriented metaphors. In the perspective of Pakistani TEs they expressed 24% art-oriented metaphors, that is, flower, painting, canvas, and candle. According to the explanation of Chen (2003) classification, the TEs consider teaching as a unique experience of creativity and imagination and focus on the creative side of teaching; coloured by the unique personality of each teacher.

Business-oriented metaphors. Metaphors of 10% TEs were business-oriented metaphors: shop-keeping, leadership, and shopping malls. Conferring to Chen's classification, the teachers' deliberate teaching as an efficient process of producing students which will satisfy the needs of the market.

Science-oriented metaphors. In this category, 10% TEs expressed metaphors such as catalyst, solar systems, heart-beat, mobile phones, mirror, lamps. As Chen (2003) states that "TEs consider teaching as a scientific process aimed at imparting knowledge and skill to the learners in a consistent and predictable manner. It focuses on the rules and principles of teaching that make it possible for anyone to reproduce the results of expert teachers" (p. 28).

Personal dynamics-oriented metaphors. In this category, 66% TEs expressed their metaphors, that is, religious responsibility, angelic, stream, shelter, ocean, valley umbrella, rain, tree, road trip. As Chen (2003) stated, "Teachers consider teaching as a complex process that requires self-management by them inside and outside the classrooms. This category emphasizes the functional dynamics of teaching in a teacher's life" (p. 27).

Discussion

The metaphors are means to reveal philosophies and approaches to pedagogy, where the impersonal becomes personal through narrations and descriptions and used broadly to develop images of teaching. Similarities and differences of teachers' perceptions in the fluctuating content areas can be easily understood and described via metaphors. Numerous key concerns emerged and were described through the narratives; the role of atmosphere of the institute, management, TEs' pre-existing perceptions, training, and professional development. Examining the participants' responses, six categories were culled, that is, religious obligation, economic activity, nature compatibility, life process, emotional affiliation, and thought provoking activity.

This finding was supported by researchers who have established that metaphors are very useful to get insights of teachers' perceptions about teaching and the role of teachers in educational situations (Leavy, McSorley & Boté, 2007; Saban, Kocbeker, & Saban, 2007). Turunen (2003) also suggest that metaphor analysis is considered as a tool for revealing what an individual thinks about the issues at hand.

It was divulged from the narrations of TEs that there is diversification in the metaphors of TEs. Teachers relate their metaphors of teachings with different things, which showed the diverse perceptions of teachers. Every teacher has his/her own dissimilar metaphors. The reason of difference in metaphors is their dissimilar subject areas and different background of educational institutes. The findings of previous studies also indicate that there are various metaphors for the concept of teaching and each teacher provides different schemes (Ben-Peretz, Mendelson & Kron, 2003; Black & Halliwell, 2000; Fenwick, 2000; Mahlios & Maxson, 1998; Oxford, Tomlison, Barcelos, Harrington, Lavine, Saleh, & Longhini, 1998).

Metaphors showed various facts about teaching, but no single metaphor could best communicate all complexities of teaching. Teachers face various complexities and densities in teaching profession, but it is difficult to express all the facts in a single metaphor. The findings of Wallace (2001) are also supportive regarding diverse perceptions of TAs. They determine that the participants used imaginative, intellectual, and talented metaphors, which allowed the researchers to know how these people perceived the teaching process. An international review of the literature exposed several metaphors about teaching and all of them were based on different schemes (Chen, 2003; Fenwick, 2000; Hagstrom et al., 2000; Hoban, 2000; Minchew, 2001; Weade & Ernst, 1990; Yung, 2001). The review also indicated that the reason of diversity in metaphors was that each metaphor is partial in nature and represents a part, but not the whole of the phenomenon; consequently, every person has a different perspective and metaphor. Similarly, the findings of Guerrero and Villamil (2002) and Oxford et al., (1998) indicate similarities regarding positive characterization of the role of teaching metaphors, for example, candle, lamp, sun, light, illumination,which reveals that the teachers are the source of enlightenment in the darkness of ignorance. The findings showed that teaching is a religious responsibility. TEs metaphors reveal that they are well aware of social and moral importance of education. The same results were also shown by Rohrer (1995), who described teaching as a religious obligation and similarly the findings of Buaraphan (2011) were also in accordance with the claims that education has an important place in the society.

Saban, Kocbeker, and Saban (2007) concluded in their research that the negative perspective of teaching is the teacher's intention of switching from this profession. In teaching profession, a teacher gets salary, respect, experience, and enjoys the profession by conveying and gaining knowledge. On the other hand, the workload in this profession gives stress to the TEs. Farber (1991) claimed that, "Teacher stress and burnout have affected and will continue to affect the lives of teachers and their families, administrators and their families, students and their families, and all of society"(p. 313).

It was determined that metaphors of teaching help junior TEs to think logically and analytically, which in turn would be helpful for

them to increase their instructive knowledge and familiarity with the profession. Similar results were reported in the study of Tannehill and MacPhail (2012) in which they stressed that metaphors help novice teachers to comprehend pedagogical knowledge. Mellado and Bermejo (2012) illustrated that metaphors play a major role in the professional training of prospective teachers and help them to understand conceptions and approaches in their teaching. Significant results have proved that there are similarities in junior and senior TEs motivators, but due to the lack of experience of junior TEs, there is some visible dissimilarity as well and they perceive metaphor description differently. It is determined by Minchew (2001) that narrating a personal metaphor of teaching can be complex and much depends on an individual's interest, motivation, and experience. Metaphors streamline and manage the perceptions of TEs and enable

them to analyse, explore, evaluate, reproduce, and restructure their teaching practices. They also help TEs to understand discrepancies which they are facing in teaching profession (Tracy, 2000) and further help the administrators realize the problems that the teachers may be facing in their environment.

Conclusion and Recommendations

This study has been conducted to explore the TEs' metaphors of teaching. Synthesis of the findings of the research revealed that junior and senior TEs are satisfied with teaching as their profession and generally they have positive perceptions about teaching profession. Metaphors narrated by TEs significantly describe various characteristics of the teaching profession such as feelings, passion, imagination, interest, and creativity. Through metaphors, TEs support time management, decision making, learning by demonstration, and experiments and

thus enjoy it as a routine matter. It is concluded that there is a lot of variation in the metaphors of junior and senior TEs. Metaphors of senior TEs are a combination of maturity, knowledge, immersion, understanding, and experience, which are rare in the metaphors of junior teachers. Metaphors of senior TEs were more analytical, logical and denotation based, which give a perfect sense of teaching profession. The origins of dissimilarity of metaphors are their dissimilar perceptions about teaching. There is a dire need to work on the metaphors of teaching, especially in Pakistan in the following areas:

1. Exploration of prospective teache rs' personal metaphors of teaching.
2. Exploration of which category of Chen's (2003) classification of metaphor is more likely to lead to effective teaching.
3. Comparision of primary and secondary teachers' personal metaphors of teaching.

References

Ben-Peretz, M., Mendelson, N., &Kron, F.W. (2003). How teachers in different educational contexts view their roles. *Journal of Teaching and Teacher Education*, *19*(2), 277–290.

Black, A. L., &Halliwell, G. (2000). Accessing practical knowledge: how? Why? *Journal of Teaching and Teacher Education*, *16*(1), 103-115.

Buaraphan, K. (2011). Metaphorical roots of beliefs about teaching and learning science and their modifications in the standardbased science teacher preparation programme. *International Journal of Science Education,33*(11), 1571-1595.

Chen, D. (2003). A classification system for metaphors about teaching. *The Journal of Physical Education, Recreation and Dance.74*(2), 24 - 31.

DelMas, R. (2004). Mathematical and statistical reasoning. In D. Ben-Zvi & J. Garfield, (Eds.), *The challenge of developing statistical literacy, reasoning, and thinking* (pp.79-95). Dordrecht, The Netherlands: Kluwer.

Farber, B. A. (1991). *Crisis in education: Stress and burnout in the American teacher*. San Francisco: Jossey-Bass.

Fenwick, T. (2000). Adventure guides, outfitters, fire starters, and caregivers: Continuing educators' images of identity. *Canadian Journal of University Continuing Education, 26*(1), 53-77.

Gillespie, D. (2005). Misreading Charlie: Interpreting a teaching story through metaphor analysis. *McGill Journal of Education, 40*(1), 131–142.

Guerrero, M. C. M., &Villamil, O. S. (2002). Metaphorical conceptualizations of ESL teaching and learning. *Journal of Language Teaching Research, 6*, 95-120.

Hagstrom, D., Hubbard, R., Hurtig, C., Mortola, P., Ostrow, J., & White, V. (2000). Teaching is like...?. *Educational Leadership, 57*(8), 24-2

Hoban, G. (2000). Using a reflective framework to study teaching learning relationships. *Journal of Reflective Practice, 1*(2), 165-182.

Kemp, E. (1999). Metaphor as a tool for evaluation. *Assessment & Evaluation in Higher Education, 24*(1), 81- 89.

Kramsch, C. (2003). Metaphor and the subjective construction of beliefs, in: P. Kalaj & A.M.F. Barcelos (Eds.), *Beliefs about SLA: New research approaches* (pp. 109-128). New York: Springer.

Lakoff, G., & Johnson, M. (1980). *Metaphors we live by*. Chicago: University of Chicago Press.

Leavy, A. M., McSorley, F. A., & Boté, L. A. (2007). An examination of what metaphor construction reveals about the evolution of pre-service teachers' beliefs about teaching and learning. *Journal of Teaching and Teacher Education,23*(7), 1217-1233.

Mahlios, M., &Maxson, M. (1998).Metaphors as structures for elementary and secondary pre-service teachers' thinking. *International Journal of Educational Research,29*(3), 227-240.

Martinez, M. A., Sauleda, N., & Huber, G. L. (2001). Metaphors as blueprints of thinking about teaching and learning. *Journal of Teaching and Teacher Education, 17*(8), 965-977.

Massengill, D., & Mahlios, M. (2008).Pre-service teachers' metaphors of teaching and literacy. *Journal of Reading Psychology, 29*(1), 31-60.

McGrath, I. (2006). Using insights from teachers' metaphors. *Journal of Education for Teaching, 32*(3), 303-317.

Mellado, L., Bermejo,M. L. Mellado., V. (2012). Personal metaphors of prospective secondary economics and science teachers. *Asia-Pacific Journal of Teacher Education,40*(4), 395-408.

Minchew, S. S. (2001). Teaching English with humor and fun. *American Secondary Education, 30*(1), 58.

Oxford, R. L., Tomlison, S., Barcelos, A., Harrington, C., Lavine, R. Z., Saleh, A., & Longhini, A. (1998). Clashing metaphors about classroom teachers: Toward a systematic typology for the language teaching field. *System, 26*(1), 3-50.

Rohrer, T. (1995). *The cognitive science of metaphor from philosophy to neuropsychology*. Retrieved from philosophy.uoregon.edu/ metaphor/neurophl.htm

Saban, A., Kocbeker, B. N., & Saban, A. (2007). Prospective teachers' conceptions of teaching and learning revealed through metaphor analysis. *Learning and Instruction, 17*(2), 123-139.

Seferoğlu, G ,Korkmazgil, G & Ölçü, G. (2009). Gaining insights into teachers' ways of thinking via metaphors. *Journal of Educational Studies, 35*(3), 323-335.

Tannehill, D., & MacPhail, A. (2014). What examining teaching metaphors tells us about pre-service teachers' developing beliefs about teaching and learning. *Physical Education and Sport Pedagogy, 19*(2), 149-163.

Thomas, L., & Beauchamp, C. (2011). Understanding new teachers' professional identities through metaphor. *Journal of Teaching and Teacher Education, 27*(4), 762–769.

Weade, R., & Ernst, G. (1990). Pictures of life in classrooms, and the search for metaphors to frame them. *Theory into Practice, 29*(2), 133 140.

Wallace, S. (2001). Guardian angels and teachers from hell: Using metaphor as a measure of schools' experiences and expectations of general national vocational qualifications. *International Journal of Qualitative Studies in Education, 14*(6), 727-739.

Yob, I. M. (2003).Thinking constructively with metaphors. *Studies in Philosophy and Education, 22*(2), 127-138.

Zhao, H., Coombs, S., & Zhou, X. (2010). Developing professional knowledge about teachers through metaphor research: Facilitating a process of change. *Teacher Development, 14*(3), 381-395.