

Literacy metaphors of pre-service teachers: do they change after instruction? Which metaphors are stable? How do they connect to theories?

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This paper reports on a study of pre-service elementary teachers' metaphors of 'literacy' and 'teaching literacy' at the commencement and conclusion of a year-long literacy methods course at a Midwestern American university. Over a three-year period, a total of 47 participants enrolled in the two-semester literacy methods course with an embedded practicum. Data were entered in NVivo 7 and analysed for qualitative themes. Results identified six themes of teaching literacy, five of which connect to literacy theories. The majority of the pre-service teachers maintained their metaphorical belief after a year-long methods/practicum course. Four metaphors appeared to be stable across time and population. The article provides implications for linking the research reported with contemporary ideas for teaching in teacher preparation programmes.

Keywords: metaphors; pre-service teachers; literacy methods; literacy beliefs; literacy theories

Introduction

'To describe the unknown, we must resort to concepts that we know and understand, and that is the essence of a metaphor – an unusual juxtaposition of the familiar with the unfamiliar' (MacCormac 1990, 9). Metaphors determine how we interpret reality (Bowman 1996/97) and represent a model or explain a theory (Tracey and Morrow 2006). In the field of education, this means that educators use metaphors as they interpret research, life, schooling, childhood, teaching, and even a content area. In essence, metaphors are used in many frames of reference to explain a complex phenomenon.

Pioneering research on metaphors grew rapidly several decades ago (Lakoff and Johnson 1980; Marshall 1990; Munby 1986; Munby and Russell 1990; Provenzo et al. 1989; Tobin 1990). Several seminal studies have enabled us better to understand prospective and current educators' metaphors of teaching (Inbar 1996; Mahlios and Maxson 1995, 1998; McGrath 2006; Saban, Kocbeker, and Saban 2007). Less common is research conducted on metaphors specific to a content area such as the teaching of reading or writing. Thus, the purpose of this study is to examine pre-service elementary teachers' metaphors of 'literacy' and 'teaching literacy' as they enrolled in a two-semester literacy methods course at a Midwestern American university. Data were collected over a three-year period, guided by the following questions:

- (1) What patterns exist among the metaphors pre-service teachers bring to the literacy methods course to describe teaching literacy?

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- (2) What are the pre-service teachers' metaphors of teaching literacy at the conclusion of the methods courses? To what extent do their metaphors change?
- (3) What are the sustained metaphors across multiple samples of pre-service teachers? How do the metaphors connect to literacy theories?

Research context

The theoretical framework for this study is based on cognitive theory. Metaphors are a cognitive device for learning new information, concepts, and skills, and as a means for framing and defining experience in order to achieve meaning about one's life (Hardcastle et al. 1985; Yamamoto et al. 1990). Lakoff and Johnson (1980) wrote that the human conceptual system, not something humans are acutely aware of but the part of humans that guide thought and actions, 'is fundamentally metaphorical in nature' (3). This means human thoughts, activities and language are metaphorically structured. Metaphors help humans understand and experience something in relation to another. 'Metaphors are more than literacy devices... they function as the lenses by which we perceive and conceptualise our experiences' (Norton 1993/94, 1).

A number of studies have documented pre-service teachers' metaphors. Mahlios and Maxson (1995) found the teacher candidates likened elementary and secondary school to family and team respectively. Mahlios and Maxson concluded that pre-service teachers often possess simple and naïve views of children that cross over the actual differences in their root metaphors. A later study by Mahlios and Maxson (1998) categorised pre-service teachers' metaphors of teaching into four themes: teaching as telling, teaching as nurturing, teaching as guiding and teaching as stimulating. A larger more recent study by Saban, Kocbeker and Saban (2007) identified 10 conceptual themes of a teacher. The future educators viewed the teacher as a knowledge provider, crafter, repairer, entertainer, counsellor, nurturer, facilitator, leader, authority, and change agent.

McGrath (2006) questioned whether groups of teachers would yield differences in metaphor. Saban, Kocbeker and Saban (2007) found English education pre-service teachers were more 'facilitator' oriented (i.e., guiding) than general classroom teachers who seemed to be more 'molder' and 'nurturer' oriented. Saban and colleagues also discovered male prospective teachers were mainly 'facilitators' and 'democratic' while female prospective teachers were more 'transmission, growth and spiritual' oriented.

Differences have also been shown between teachers and students (Inbar 1996) and between experienced and new teachers (Martinez, Sauleda, and Huber 2001). Inbar (1996) found many students viewed themselves as prisoners and their teachers as jailers, but few teachers saw themselves or their students in this manner. The author discovered a number of students saw their schools and teachers as supportive, caring, open, and encouraging. Inbar encouraged educators to 'become critically aware of these metaphors to increase the rigor and precision of our analysis of education and schooling' (90). Martinez, Sauleda and Huber (2001) found more than half of the experienced teachers focused on traditional teaching with the teacher as the transmitter of knowledge and the students as an empty slate and recipient of knowledge. In contrast, the prospective teachers were considerably more constructivist; they viewed students as active learners and elaborators of knowledge. Martinez, Sauleda and

Huber stated, 'Metaphors may stimulate the teachers to explore new conceptual territories visible from an alternative point of view, a perspective of classroom practice which they might not have otherwise considered' (974).

Few studies have been published that solicit in-service or pre-service teachers' metaphors of literacy. One of the first was Dyson's (1990) metaphors (scaffolding and weaving) of a kindergarten teacher's work with students. Scaffolding is a vertical metaphor between a child and significant adult with each participant aware of the purpose. In contrast, weaving is a horizontal metaphor and supports multiple experiences and activities. 'Children weave literacy from the rich diversity of resources they bring to school with them' and 'the classroom itself should allow diverse kinds of experiences' (211).

Elementary, secondary English and secondary foreign language pre-service teachers' metaphors of teaching can be related to literacy. Across the three groups an association was found between four teaching metaphors (nurturing, self-identity, promoting learning, and guiding) and literacy beliefs (Massengill, Barry, and Mahlios 2008a). When asked to write metaphors of literacy, 52 pre-service elementary teachers' metaphors were grouped into four themes: sequence, components, foundation and journey (Massengill, Barry, and Mahlios 2008b). Twenty-three (44%) of the pre-service teachers wrote metaphors that related to content presented in the reading methods course.

Brazilian teachers' metaphors about a textbook were collected (McGrath 2006). The 221 teacher images were assigned to five themes: guidance, access, support, resource and constraint. Of these, the idea that the course book was a restriction only occurred 2.7% of the time. Many teachers saw the textbook as a resource (34.8%) or a helpful guide (37%). Overall, teachers' attitudes about the English textbook fell into three groups: 'those who are prepared to follow a textbook, those who use it selectively, and those who will do what they can to avoid it' (313).

In sum, we know that metaphors offer educators a potent means to understand the beliefs pre-service and in-service teachers hold about teaching, school, textbooks, and literacy. No researcher has yet investigated the literacy metaphors pre-service teachers bring with them to the literacy method courses and how metaphors may be impacted after one year of professional coursework and experience. Neither is there documentation of literacy metaphor patterns across groups of pre-service teachers.

Methodology

Participants

The participants in the present study were 47 pre-service teachers majoring in elementary education at a research university in the Midwest (USA). Four participants were male and one female was African-American while the remaining 46 were Caucasian females. All were of traditional college age (20–21 years) save one male who was 27 years of age at the time of the study. The total sample of 47 was divided into three groups of pre-service teachers. One group took the literacy courses in 2006 (January–December), another group enrolled in the literacy courses during 2007, while the last group enrolled in the literacy courses in 2008. During the spring semester (January–May) of their junior year the students enrolled in a literacy methods course with integrated practicum for primary grade children. In the fall semester of their senior year

(August–December) the university students took the literacy methods course/practicum for intermediate grade children.

The literacy course

The literacy methods course met four hours per week in two two-hour segments. In this first segment students met for two hours one day per week in an elementary school to teach primary or intermediate grade students and in the second segment two hours per week at the university for instruction on how to teach literacy. Topics in the class were organised around stage development theory (emergent, beginning, transitional, intermediate and advanced) (Bear et al. 2004; Gunning 2008) and a balanced literacy instructional framework (Fountas and Pinnell 1996, 2000) for each stage of pupil development. The four-part framework included fluency, word knowledge (e.g., phonics, phonological awareness, word study), comprehension (e.g., vocabulary and comprehension) and writing. Faculty emphasised in the courses that developing readers need a balance of literacy components, while differing instructional emphases and activities may occur at each stage.

Likewise, the National Reading Panel (2000) composed of researchers in the US who evaluated research in the field identified five components of reading: phonemic awareness, phonics, fluency, vocabulary and comprehension. These were presented as an overview at the beginning of each semester and more specifically were integrated as we discussed the literacy framework for the stages of pupil development. For example, we discussed phonological awareness with emergent/beginning readers and focused heavily on comprehension for transitional and intermediate readers. For each of the five components, we discussed a research rationale supporting the instructional techniques and activities presented.

In addition, we also taught the role of literacy assessments such as running records (Clay 1985), *Basic reading inventory* (Johns 2005), spelling inventories (Bear et al. 2004) and informal assessments including Dolch sight words (Dolch 1927), retellings, and phonemic awareness tasks.

Data collection and analysis

The first author/instructor, began the semester by stressing the importance of beliefs and the role a teacher's value system plays in their instruction. Examples of metaphors were provided and she explained how metaphors are a cognitive device to frame beliefs. For homework on the first day of class, students were required to develop three metaphors for 'teaching literacy is...' or 'literacy is...'. Additionally, they were to provide a rationale for their selection. These were collected at the next class period and kept by the first author. The reason that three metaphors were solicited instead of one was because many of the pre-service teachers did not have experiential or content knowledge in literacy. Their literacy beliefs were grounded in their childhood/schooling experiences; their teaching beliefs were beginning to develop. By allowing them to create more than one metaphor, they were able to tap into multiple belief systems that were not fully established. At the completion of the year-long course in December, the three metaphors were distributed and participants were asked to revisit their original metaphors. After a year of instructing elementary children in practica and learning about teaching literacy, they were asked to identify one metaphor that

most closely aligned with their sense of literacy teaching. They could select one dominant metaphor from their original three written in January or create a new metaphor. Most importantly, the pre-service teachers were asked to explain their thinking and support of their metaphor.

All data were typed in Microsoft Word for each pre-service teacher with the term/year. For example, listed under 'Elizabeth January 2006' (all names are pseudonyms) were the three metaphors/explanations. Next, 'Elizabeth December 2006' was the header and a paragraph below her name identified her final metaphor and her explanation. Then, data were entered in NVivo 7 (2006), a qualitative software program. NVivo creates files for each individual student case linked to the original Microsoft Word data and uses nodes for themes or categories. In order for the program to identify categories automatically, themes and keywords must be entered into the computer. For instance, keywords for 'nurture' included 'garden, flower, seed, tree, grow/growth'. After all possible words were entered into NVivo, auto-coding was run. For each theme, NVivo indicated which pre-service teachers' metaphors fitted into that theme. For example, under the heading 'nurturing' we had Elizabeth's metaphor (January 2006) listed, followed by Kyle's metaphor (January 2008) and those of many more students. Then under the metaphor 'exploration' Emily's metaphor (December 2007), followed by Greg's metaphor (December 2006) and others were listed. When the NVivo results were printed, the researchers could identify the themes, and analyse how many pre-service teachers selected each theme and when (commencement/conclusion) the metaphors were stated. In this way we could determine which metaphors were brought with them and their dominant literacy metaphor after a year-long methods course.

In the design of the data analysis, it was very important for the researchers to study carefully each written explanation and assess the meaning students assigned the metaphor because one keyword could have two different connotations and thus fit into two themes. For example, two pre-service teachers used the metaphor 'ocean' but with different meanings. Mindy (2007) said, 'Teaching literacy is like the ocean, the farther you go, the more you discover' which fitted the exploration theme. Joy's (2007) metaphor fitted into the theme of parts/components thus:

Literacy is like the ocean. There are many species and elements that make up the ocean and the ocean would not be unique without these contributors. There are different types of fish, shellfish, and plants that are connected in unique and different ways. If one species or plant were to disappear from the ocean, many other species would suffer the loss. This is the same with literacy. If writing or fluency were taken away from learning literacy, one's own success and potential would suffer. All of the aspects of literacy are connected, and when one part is not learned or focused on, literacy, achievement is compensated.

On a later day, all of the results were re-analysed by hand to ensure reliability. The Microsoft Word documents were read and an identified theme was listed by each pre-service teacher's metaphor. A handwritten grid (for each year) was created with five columns: pre-service teacher name, pre-metaphor 1, pre2, pre3, and post-metaphor. Next, each metaphor was colour-coded by theme. The categories were then tallied. Results between the first NVivo auto-run coding through the final hand coding were similar on 95% of the items. Further, the second author coded approximately 10% of the data to ensure inter-rater reliability. These results matched the first author's work (100%).

Results

The purpose of this study was to explore pre-service teachers' initial metaphors of teaching literacy and of literacy and to examine changes that may have occurred while taking two semesters of coursework/practicum. Finally we sought to identify the sustained metaphors that frequently appear across time for the three groups of students. The results will be presented through the guiding research questions.

What patterns exist among the metaphors pre-service teachers bring to the literacy methods course to describe teaching literacy?

The first of six themes, *nurture*, represents support and growth. Elizabeth (2006) wrote, 'Teaching literacy is like a flower opening because some [students] take longer to open and some open larger, but with love and patience they open'. Lisa (2007) wrote:

Literacy is like a tree. With a proper base that is strong and will support a child in their quest for literacy, they will better be able to grow and develop their reading and writing skills. Even through the harsh winters, or rough times, the tree still stands strong and if a child is persistent, they will come out of the winter with blossoms, or the newly developed skills needed to read and write.

The second theme, *parts/components*, illustrates that literacy involves many different skills and strategies. Many pre-service teachers used the metaphor of cooking or baking, where numerous ingredients combine to make a scrumptious dish. Other metaphors were also used: a puzzle, bridge, quilt, ocean, tennis shoe, laundry, construction of a house, and even a rainbow or box of crayons. Melanie (2007) wrote:

Teaching literacy is like playing on a sports team. In sports there are many positions and many plays that the players use. If they do not have some of the positions or any plays the chances of success would be minimal. In literacy the different parts can be thought of as positions. If a child doesn't understand phonemes or sentence structure then becoming literate would be difficult. The plays are different strategies and techniques a teacher uses to teach literacy without these literacy would also be impossible to learn.

Third, we found pre-service teachers view teaching literacy like an *exploration and adventure*. This theme reflected the ideas that literacy may bring a learner to new places, the opportunity to try new things, and the serendipity and surprise that makes reading fun. For example, *open door* and *key* were the two most common metaphors in this category. Others included *maps*, *cars* (to take you places), *dreams*, *password to a computer*, *a walk in the wilderness*, and *flight*. Greg (2006) wrote, 'Literacy is like opening a portal to another dimension because reading opens up a whole new world that didn't exist to the child before'.

Fourth, some pre-service teachers indicated that learning to read and write was similar to *learning other skills*, particularly like learning to walk and ride a bike. Learning to swim, dance, and play the piano all take skill and practice. Leann (2008) wrote:

Literacy is like learning to walk because, while difficult and slow at first, it becomes natural and a lifelong skill. Literacy is also like learning to walk because it can be expanded in many ways... jumping, running, skipping, etc. Literacy can be expanded to reading novels, plays, poems, etc.

A fifth theme is a *worthwhile challenge*. Most of the time teaching and learning literacy requires a lot of effort and hard work, and sometimes teachers do not feel as

if they are making progress, but the end result is a reward. For example, running a marathon requires dedication and persistence, just like learning to read. Climbing a mountain or completing an obstacle course typically presents challenges. But when finished, the success is worth the hardship. Linda (2008) wrote, 'Teaching reading is like pulling weeds. It is challenging and tedious, but once it's done, it is beautiful'. Lydia (2008) said, 'Teaching reading is like a carnival ride because sometimes you feel like you are going around and around and not getting anywhere, but in the end, it's all worthwhile'.

Finally, some metaphors don't neatly fit into one of the aforementioned themes so a *miscellaneous* category was designated. Lynn (2006) wrote, 'Literacy is like blowing bubbles, the pressure has to be just right or you'll turn kids off of reading (pop the bubble)'. Michelle (2006) wrote:

Comparing literacy to a sunrise seems fitting because there are several parallels between the two. A sunrise has many shades and colours that blend together to make the sky complete. It starts as a small speck of light and grows to fill the sky. Likewise, there are several components in the literacy framework (comprehension, fluency, writing, and word knowledge) that must be blended together in the mind to make a person literate. A student begins with a small knowledge base; this base expands and eventually touches all aspects of their life. Additionally, a sunrise climbs higher in the sky as its journey progresses just as a student climb through the five stages of reading on their journey to literacy.

What are the pre-service teachers' metaphors of teaching literacy at the conclusion of the methods courses? To what extent do their metaphors change?

Tables 1 through 3 show the number of metaphors identified for each of the six themes for pre (January) and post (December). The first rows with the highest numbers show the dominant themes for each group of students. There are three times as many metaphors for January as for December because students were asked to provide more than one metaphor at the commencement of class. Students' January metaphors were often based on their personal literacy experiences or came from information provided in the first day's lecture or textbook reading. After a year of instruction and working with elementary pupils, the pre-service teachers readily communicated the one dominant metaphor that expressed their sense of teaching literacy. To determine whether students changed their metaphor, the researchers looked to see if the post-metaphor was one of the original three.

In 2006, 94% of the students selected one of their original metaphors. For example, Carrie's pre-metaphors were flower, puzzle, and a peanut-butter-and-jelly sandwich.

Table 1. 2006 metaphors.

Metaphor generated	Pre (January)	Post (December)
Explore/adventure	29	5
Nurture	5	5
Learning skill	6	3
Parts/components	4	3
Worthwhile challenge	6	1
Miscellaneous	4	1

Note. 18 pre-service teachers.

Table 2. 2007 metaphors.

Metaphor generated	Pre (January)	Post (December)
Parts/components	12	8
Nurture	6	3
Explore/adventure	10	1
Worthwhile challenge	6	1
Miscellaneous	5	1
Learning skill	3	0

Note. 14 pre-service teachers.

Table 3. 2008 metaphors.

Metaphor generated	Pre (January)	Post (December)
Parts/components	13	10
Explore/adventure	13	2
Nurture	1	1
Learning skill	7	1
Miscellaneous	2	1
Worthwhile challenge	9	0

Note. 15 pre-service teachers.

In December Carrie selected her final metaphor as a flower, which indicates she came to believe that teaching literacy was like a *nurturing* experience where a teacher provides the children with all the things they need to grow in literacy like a flower needs rain and sunshine. Of the 18 pre-service teachers, only one student created a new metaphor. Kim originally expressed two *exploration* metaphors (door and key) and a *miscellaneous* metaphor, a box of chocolates. In December Kim stated her metaphor of literacy was a flower. Even though Kim provided a metaphor that she had not considered previously, we are not certain the reason for her change from *exploration* to *nurturing*.

In 2007, there was considerably more movement. Of the 14 pre-service teachers, only half ($n = 7$) kept one of their original metaphors while the remaining seven generated new ones. When analysing the seven students' who changed their responses, five created a new metaphor still related to one of the original chosen themes. For example, Emily originally submitted two *exploration* metaphors (car and map) and a *nurturing* metaphor. Emily created a new post-metaphor of passport which still aligns with the *exploration* metaphor. The two pre-service teachers that completely changed metaphors were Mindy and Jordan. Mindy came to the literacy method course with three *exploration* metaphors and finished the classes believing teaching literacy was a *nurturing* endeavour. Jordan presented an *exploration*, a *worthwhile challenge* and a *miscellaneous* metaphor in January and concluded in December that learning to become literacy requires *multiple components or parts*.

In 2008, two of the 15 university teachers generated new metaphors. Richard presented three *exploration* metaphors in January and concluded in December that literacy involves *multiple components*. Amanda brought with her the conception that

literacy was *challenging* (two metaphors) and an *exploration* (one metaphor). Her final metaphor was complex with hints of *skill and components* integrated throughout. Amanda wrote:

Reading is like planning a wedding. The beginning of the process (the engagement) is highly exciting, and many students want to jump right in and expect to know how to read immediately. When one becomes newly engaged, it is the same feeling – you want to start planning and making everything come together right away. However, though the student may have ideas about how reading is supposed to work, it doesn't take long for that student to realize there are many steps involved before we can move on. First, there are the big things to learn – letters, sounds, and book orientation. In terms of wedding planning, this would be like getting organised and thinking about the big things, like setting a date and booking the church. Once the main ideas are in place, the student can begin to figure out the smaller details (such as working on reading rate, fluency, expression, etc). In wedding planning, this would also be the smaller details – flowers, makeup, and food. Finally, all the details are in place, and the student has finally become a reader. It's a celebration of knowledge and understanding, and that student should always be congratulated for becoming a good reader. Just like the big day for the bride and groom – the wedding!

In sum, we can conclude that the majority of the pre-service teachers bring well-articulated metaphors with them and these remain a part of their belief system even after a year-long literacy methods course. Of the few who did change their metaphors, they predominantly came to the first day of class with the idea that literacy was *exploring* the world and opening doors and possibilities. Two students ended the class and practicum with a *nurturing* belief and two pre-service teachers believed literacy is composed of *multiple parts*.

What are the sustained metaphors across multiple samples of pre-service teachers? How do the metaphors connect to literacy theories?

When analysing the metaphors, the five main themes (minus *miscellaneous*) were prevalent with each of the three groups of pre-service teachers. Four of these themes were identified in previous research (Massengill, Barry, and Mahlios 2008b). The *components* of literacy was a dominant metaphor with a group of students at the same university who took one semester of reading methods instead of the year-long course of literacy methods. Smaller themes from previous research (Massengill, Barry, and Mahlios 2008b) that are comparable to the results of this study include *exploration*, *nurturing*, and *worthwhile challenge*. These four metaphors (*components*, *exploration*, *nurturing*, *worthwhile challenge*) appear to be stable across time and population. Three metaphors from the previous study (Massengill, Barry, and Mahlios 2008b) that did not surface in the present study included: (a) literacy as a foundation and (b) literacy is essential or (c) the politics of literacy. A new metaphor that arose in this study was learning literacy is similar to *learning other skills* (e.g., playing the piano, walking) in life.

Table 4 shows the number of post-metaphors for each of the five dominant themes. Clearly the idea that literacy is composed of *parts* such as reading, writing, spelling and language was the most dominant theme across the three years/groups. It is interesting to note that the number of pre-service teachers who believed this increased with time, yet the course instruction appeared to be relatively stable (same syllabus and professor). In contrast, *nurturing* was stronger in the 2006 pre-service teachers than in the 2008 group. *Exploration* and *skill* also slightly decreased from 2006–2008 while *worthwhile challenge* and *miscellaneous* remained stable.

Table 4. Comparison across years on post metaphors.

Metaphor generated	2006	2007	2008	Total
Parts/components	3	8	10	21
Nurture	5	3	1	9
Explore/adventure	5	1	2	8
Learning skill	3	0	1	4
Worthwhile challenge	1	1	0	2
Miscellaneous	1	1	1	3

To determine how the metaphors align with literacy theories and models we turn to Tracey and Morrow's (2006) book, *Lenses on reading*. All five metaphorical themes (minus *miscellaneous*) relate to theories and content presented in this comprehensive book.

The metaphor of *nurture* connects to unfoldment theory based on the works of Rousseau, Pestalozzi and Froebel. These theorists believed in developing a child's curiosity, interests and providing enriched experiences. Nurturing can also be situated through a whole language theoretical lens, indicating students need child-centred, functional, authentic and purposeful literacy experiences.

'Since reading development is ongoing, continuous, and gradual' (Tracey and Morrow 2006, 82), the *learning skill* metaphor illustrates how children learn tasks and proceed toward proficiency. We can determine what they have accomplished, where they are now, and where they are headed in the future by looking at children's growth of specific behaviours and abilities across time.

Exploration/adventure metaphors are representative of Dewey's (1916) constructivist views that provide a supportive and motivating environment which promotes problem-based learning and collaboration. Inquiry learning 'emphasises the active construction of knowledge by individuals and views learning as an internal, not necessarily observable, phenomenon' (Tracey and Morrow 2006, 50).

The metaphor of *parts/components* can be connected to Rumelhart's Interactive Model (1977), which illustrated how students use syntactic, semantic, orthographic, and lexical information to read. A later model entitled Parallel Distributed Processing Model (Rumelhart and McClelland 1986) identified how successful readers depend on four aspects of a reader's ability: 'automatic letter recognition, accurate phonemic processing, strong vocabulary knowledge, and the ability to construct meaning' (Tracey and Morrow 2006, 203).

Worthwhile challenge signifies difficulties with reading and this metaphor relates to Stanovich's (1980) Interactive-Compensatory Model and the Double-Deficit Hypothesis (Wolf and Bowers 1999) which explains the cause of reading difficulties. Despite challenges, children who struggle with reading and writing may become successfully literate.

Discussion

The study presented here represents an initial, albeit incomplete, inquiry into pre-service elementary teachers' beliefs about teaching literacy. Results offer educators some ideas about the types of beliefs elementary pre-service teachers bring with them

to the teacher education programme, and their steadfastness to those metaphors after a year of preparation and practicum experiences. The study also provides some important data on similarities and differences in metaphors among three different groups of pre-service teachers.

In summary, it appeared that the metaphor of parts/components was the most common view of these pre-service teachers ($n = 21$). These future educators realised that literacy is a complex skill with multiple components. Thus one may conclude that many of the pre-service teachers in this study understand that it takes more than a warm, motivating environment to produce readers. They have a responsibility to identify students' developmental needs and plan instruction based on literacy components.

Considerably fewer students believed teaching literacy to be a nurturing experience ($n = 9$) or one that promotes exploration and adventure ($n = 8$). These metaphors could stem, in part, from their personal experience (Clandinin 1986) and prior schooling experiences (Anning 1988; Britzman 1991; Knowles 1992). Their experience as a student has been built over years, so their belief is not likely to change without an impetus (Gupta 2004; McGrath 2006). The majority of students who choose to be teachers are often successful in their reading and writing abilities and they have learned the value of being literate. Further, this study focused mostly on female pre-service teachers and previous research has shown female teachers are growth oriented (Saban et al. 2007) and elementary teachers are often known to be nurturing (Mahlios and Maxson 1995, 1998).

Furthermore, their metaphors of literacy did not change over the year time period of this study. Overall, it appeared that beginning teachers have ideas about their teaching of literacy and specific ways to portray that image in their teaching. The pre-service teachers in this teacher preparation programme were not trained to systematically tap into their metaphors or examine them in relation to the programme's content or recommended practices. Even though there was no inherent conflict between student beliefs and programme conceptualisation, the data of this study indicate the persistence of ideas (i.e., metaphor and overall sense of teaching) that teachers-to-be bring to their university preparation and that those beliefs extend into actual classroom practice and remain similar after one year of practicum working with individual pupils and small groups of elementary children. Gupta (2004) provided two reasons why pre-service teachers' beliefs in language and literacy are especially resistant to change: the lack of clearly defined subject matter, and the fact that literacy is a part of everyday life and literacy practices are ingrained after years of application.

When comparing these metaphors to the content presented in the literacy methods course, there are two connections. First, the content of the course throughout the year was structured around pupil developmental stages. The metaphor of *learning skill* reflects this conceptual framework. Second, class content covered a balanced literacy framework including the emphasis on National Reading Panel (2000) components, which is exemplified through the metaphor of *parts/components*. Of the total 47 pre-service teachers enrolled in the literacy method courses from 2006–2008, approximately half ($n = 25$, 53%) aligned their metaphor with class content. Previous literature states that teacher education programmes have minimal effects on teacher candidates' ideas (Massengill, Mahlios, and Barry 2005; Farrell 2001; Gupta and Saravanan 1995; Mahlios and Maxson 1998; Shipman 1967; Zeichner and

Tabachnick 1981). Therefore, our findings were incongruous with previous research since over half of our pre-service teachers seemed open to programme ideas and related their metaphors to course content.

One important component of the literacy methods course was the weekly two-hour practicum in which university students worked with both a primary and intermediate grade elementary student(s). The fact that some teacher candidates were able to relate course content to their formation of metaphors may have been influenced by the practicum component in which they learned from the elementary student. Pre-service teacher beliefs 'will not change unless something happens to challenge and require assessment of these beliefs' (McGrath 2006, 314). Without this real-life experience, it is possible fewer teacher candidates would have related class content to their metaphorical constructs. Zeichner and Gore's (1990) teacher socialisation theory stated that meaning is derived when teachers engage in the practice component and they interact with students. In this study, the participants had opportunities to reflect on their practical teaching experiences and relate it to the content presented in class, thus promoting coalescence and coherence of thought and action.

Implications for teacher education

Our research reveals beginning elementary teachers come into teacher education programmes with fairly consistent, yet vague, views of teaching and how these characteristics interact with the dominant elements of classroom practice. It may be that the failure of some of our students to 'learn' programme concepts is a result of the clash between views within themselves and those contained in our preparation programmes, a general phenomenon which has been previously reported (Bullough, Knowles, and Crow 1992; Inbar 1996; Martinez, Sauleda, and Huber 2001). This may explain some of the frustration faculty feel when students do not adopt professed programme views of schooling, teaching and learning (e.g., a constructivist approach, which at a root level, strikes a contrast to the pre-eminence of 'organic' metaphors), or why some teaching practices continue despite the fact that they are ineffective and counterproductive (Pajares 1992). This 'clash' may also explain research results showing little effect for programme design on students' acquisition of the extant knowledge of learning to teach (Tabachnick and Zeichner 1984).

One way to reduce the negative consequences of such a clash and the resultant loss of student professional learning would be to provide entering students' feedback on their held beliefs, and discuss how these contrast with dominant programme concepts and orientations. As noted earlier, other avenues for allowing students to express beliefs may be life-history interviews and narrative accounts (Kelchtermans 2005); matching images of themselves with drawings of other occupations (Ben-Peretz, Mendelson, and Kron 2003); portfolio essays (Parsons, Brown, and Worley 2004); questionnaires and surveys (Minor et al. 2002); or open-ended responses (Bozlk 2002). By providing students with prior information about possible points of disagreement between their ideas and those of faculty and programme elements greater congruence and accommodation may be achieved and more optimal outcomes attained.

Because many teacher educators operate with little knowledge of who their students are and what dominant beliefs they hold upon entry into teacher preparation programmes, we recommend that faculty in teacher preparation programmes incorporate the fundamental views of their students into their professional programmes of

study. By incorporate, we mean they should acknowledge and show the relationships between students' metaphors, beliefs and those upon which the teacher preparation programme rests. McGrath (2006) listed three benefits of identifying and sharing teacher images. First, when metaphorical images are generated by the student and available to the teacher educator, ideas that were subconscious are now open to discussion and exploration. Second, comparisons and modification of potential mismatches are possible. Third, teacher educators can tailor pedagogical content to match participants' wants and needs. It is through discussion of differences in perceptions and beliefs that reflection occurs, which may lead to changes in attitude and practice.

Future research

This study focused on a select group of pre-service elementary teachers who were mainly female. Given that so many pre-service teachers selected metaphors that fitted developmental literacy concepts rather than a nurturing/growth stance, it does not seem the results were skewed by gender perspective. However, to be certain more studies need to be conducted with male pre-service teachers, although this is somewhat challenging since the field of elementary education is predominantly female. Since this study does not allow us to determine the interaction of metaphors and formal knowledge, further research is needed to investigate the possible interaction. Moreover, we cannot assume or conclude that the 53% of participants who related course content to metaphors will systematically relate their metaphorical belief with practice in their own classroom. Neither do we know how these metaphors translate into teaching competence and student learning. We are currently following some of these teacher candidates into the field to investigate these questions and determine how the metaphor provides a conceptual anchor during the challenging first years of teaching. We are also interested in understanding how literacy metaphors modify. Do pre-service teachers' literacy metaphors change and if so, what influences that change? Through analysing their self-generated metaphors, the metaphor may be a means to help novice teachers better understand their change process. One way to conduct this investigation may be through teacher autobiographies, dialogue journals, self-examination of metaphors and their meaning, discussion of teaching cases and discussing field experiences. It is through depth of inquiry that complex issues will be better understood (Bullough and Baughman 1997; Bullough, Knowles, and Crow 1992). Also, we did not educate the pre-service teachers to systematically access their metaphors as a means to examine their beliefs. Future research could analyse teacher candidates' metaphorical constructs at the beginning of their teacher preparation programme and then teach students to examine them throughout the course of study.

In this paper, we have examined an association between metaphors of teaching and literacy, which indicates the possibility that the metaphor may offer educators a conceptual means to define and examine their literacy beliefs. As indicated above, research has shown that metaphors, in general, offer a framework for organising one's thinking and plan for action. As the field of literacy continues to mature, one's metaphor of literacy may change over time, or the metaphor may be seen as a concrete and potent means to describe one's beliefs amidst the pendulum swings in the field. These questions remain to be examined.

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