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Talking Stones: Facilitating Early Childhood Teachers' Thinking

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ABSTRACT

This article provides a brief exploration of three early childhood teachers' thinking when engaging with the pedagogical tool "Talking Stones". The data arises from a qualitative study investigating early childhood teacher learning in an Australian independent co-educational school. This study was a twelve-month participatory action research project involving three early childhood teachers and the researcher. The early childhood teachers designed their learning for this project drawing on the cyclical process of action research: planning, acting, observing, reflecting, and replanning. The project involved the teachers meeting on a monthly basis where they discussed and refined their use of Learning Stories as a tool to enhance their practice as early childhood teachers. The researcher also conducted a pre-project interactive group interview utilizing the pedagogical tool 'Talking Stones'. This pedagogical tool was employed to open up the discussion prior to commencing the project and to assist with triangulation of data. This paper only reports the use of the pedagogical tool. Initial findings indicate that Talking Stones disrupted familiar patterns of talk amongst these teachers and thereby facilitated the verbalizing of internal thinking and a deep-level of reflexivity. Insights into the use of the pedagogical tool are discussed and conclusions drawn about the possibilities of its use to facilitate early childhood teachers' thinking.

Keywords: Feminist poststructuralist, interactive interview, qualitative methods, reflective practice, teacher identity, teacher thinking

INTRODUCTION

Research on "teacher thinking" has long demonstrated that teachers develop and hold implicit theories about learning and teaching (Clark, 2005). Clark (2005) notes that "teachers' implicit theories about themselves and their work are thought to play an important part in the judgement and interpretations that teachers make everyday" (p.180). Yet, despite this being the case, research on teacher thinking has found that teachers find it difficult to articulate their implicit theories (Buchmann, 1990; Clark, 1995: 2005; Denicolo and Kompf, 2005; Kompf and Denicolo, 2003; Pope, 1993).

Clark's (2005) research has highlighted that teachers' implicit theories are in "fact robust, idiosyncratic, and sensitive" (p.180) to particular contexts. At the same time his research has shown that these implicit theories are "incomplete, familiar, and sufficiently pragmatic" (p.180) and provide the teacher with a basis upon which they enact their daily practice in the classroom. However, what Clark (2005) asserts is that without a clear articulation of these theories teachers may never fully realise the impact that they have upon their perception, interpretation, and judgement of their practices. The danger here he says is that teachers may never fully appreciate the "potentially important

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consequences" (p.180) that their implicit theories can have in their teaching practice. Pope (1993) identifies this danger by stating that teachers' implicit theories are not neat reproductions of educational theories; rather they are an *eclectic* collection of ideas and understandings drawn from personal experiences of teachers' daily life in the classroom.

In reading the literature, however, it also becomes clear that research on teacher thinking has tended to maintain a narrow definition (Clark, 2005; Denicolo and Kompf, 2005; Kompf and Denicolo, 2003). Most definitions for teacher thinking have focused specifically on decision making processes. This is said to be largely the result of the significant influence of process-product research (Berliner, 2005; Buchmann, 1990; Calderhead, 1993). This narrow research focus may explain the reason why research to date reports that teachers find it difficult to articulate their implicit theories. Maybe the focus has been too narrow and thus prevented teachers from engaging in conversations that would facilitate their articulation of their implicit theories.

This narrow research focus in terms of the discourses within teacher thinking highlights a potential gap. As Elbaz (1990) explains, the narrowing of the research focus when examining teacher thinking automatically determines and narrows the categories by which the research is organised. Yet by shifting the focus away from this process-product model to research that is able to encompass processes such as imaging, remembering, interpreting, judging, caring, feeling and contemplating, new insights into teacher thinking may be possible (Buchmann, 1990).

Britzman's (1988) paper further highlights this need for an opening up of this narrow research focus. She claims that the last 50 years of research on teachers has done little in the way of opening up of 'imaginative' spaces. Instead the focus has been on 'teacher effectiveness' due to a dominance of positivist research approaches (Britzman, 1988). This problem is aggravated by Elbaz's (1990) claim that there has been a sheer absence of teachers' voices within the research on teacher thinking. An absence that is stated to be a significant factor when considering the assertions made within the research on teachers and their inability to articulate their thinking (Elbaz, 1990). What is being argued here is that this absence, or what has been described elsewhere as a silencing of teachers' voices, has had a significant impact on research approaches, and therefore, has limited research insights into teacher thinking (Cole, 1997; Elbaz, 1990; McAninch, 1993).

Therefore, there is a need for research that will address this gap and support teachers in engaging in the type of thinking that Buchmann (1990) describes as a certain staged freedom to think. This is thinking that is said to collapse spatial distances; anticipates the future whilst thinking about the present and remembering the past as though it were still the present (Buchmann, 1990). The rationale for this study was therefore to privilege the voices of these three early childhood teachers as they engaged in learning in an effort to address this gap in the research on teacher thinking. In doing so it is anticipated that this study is significant as it has the potential to further inform the current research on teacher thinking.

THEORETICAL AND METHODOLOGICAL CONSIDERATIONS

Feminist poststructural notions of identity can assist in understanding 'teacher thinking'. Feminist poststructural notions of identity firmly locate the centrality of a teacher's professional identity and its links with their daily work as a teacher as being paramount (Day, Kington, Stobart and Sammons, 2006; Drake, Spillane and Huffred-Ackles, 2001; Geijsel and Meijers, 2005). As Stronach, Corbin, McNamara and Stark (2002) note; teachers are intricately 'bound up' in the discursive dynamics of the profession as they work on a daily basis attempting to 'address' and 'redress' the difficulties of the job. Placing this very tension as a central aspect of the lived experience of teaching would probably open up a space for the realisation that

teacher thinking "is never complete, never fully coherent, never completely centered securely in experiences" (Zembylas, 2005, p.938). Rather, teacher thinking is something that is always being "produced, negotiated, and reshaped" (Zembylas, 2005, p.938).

Britzman (2003) argues that teachers are required to engage in a form of negotiation on a daily basis as they perform their work within the multiple discourses of school life. In describing this school life as a "broken and uneven place" McWilliam (1994) claims that it is important to create opportunities for teachers to engage in the type of conversations that permits the unpacking of these discourses. The assertion here being that in failing to recognise the complexity of the lived experiences of teachers is a failure to recognise and understand the complex nature of teaching and therefore teacher thinking. Understanding and recognising these tensions and the centrality of a teacher's identity could very well be one of the central categories that have so far been overlooked within research on teacher thinking.

My research has been largely informed by feminist poststructural theories as I sought to better understand teacher thinking. In reading work informed by such theories I found myself unsettling the concept of teacher thinking and how it is created within the tensions of teachers' daily life in school (Davies, 1994; St Pierre, 2000; Stronach et al., 2002; Zembylas, 2003: 2005). As such I sought to develop a research project that would honour the lived experiences of teachers as they engaged in processes designed to facilitate 'teacher thinking'.

METHODOLGY

This research was a 12-month qualitative participatory action research project that took place in an independent co-educational school in Australia. Designing this participatory action research the work of McNiff and Whitehead (2006) was influential. They advocate an action research design that permits the project to evolve in a manner that is responsive to the context and the learning of the participants as it unfolds. Therefore, the design of this participatory action research engaged with a generative cyclical process of action research (McNiff and Whitehead, 2006).

Data collection techniques were developed with the knowledge that the power of participatory action research lies in the concern for the relationship between the social and education theory and practice (Kemmis and McTaggart, 2005). Furthermore, the trustworthiness of participatory action research is closely tied to the skills of the researcher (McNiff, 1988). I drew upon the work of Richardson (Richardson and St.Pierre, 2005) and her term 'crystallisation' rather than 'triangulation' in the design process. Consequently the qualitative data collected consisted of five main sources: pre-project interview using the pedagogical tool Talking Stones; audio taping and verbatim transcribing of group discussions; development of and trialling of professional resources; professional reading responses; journal entries; and my own research journal and field notes.

Participants included three early childhood teachers and me, as both the researcher and a teacher working within this school. My role at the school at this time was the Support Service teacher involved in working with all teachers across the junior area of the school, for example, from early childhood through to Year 6.

At the time of commencing the project, the school had recently introduced Professional Learning Communities into its policy for teacher professional development. The school had drawn heavily on the work of seminal writers on Professional Learning Communities (DuFour and Eaker, 1998; DuFour, Eaker and DuFour, 2005; Senge, 1994; Senge & Society for Organizational Learning, 2005). In drawing on this work the school had established the requirement for Professional Learning Communities to align professional learning goals with school priorities.

The project was therefore designed around the procedures already in place by the school. This included the three early childhood teachers establishing with the school leadership the aim of their Professional Learning Community; that being to explore the work of the New Zealand

Ministry of Education early childhood national curriculum; Te Whäriki, and specifically the use of Learning Stories. Learning stories were seen by these early childhood teachers as a tool that had the potential to facilitate the articulation of their practices and therefore their thinking. This was also an aim that aligned with the school's priority in its work to become recognised as a Mindful school (Kallick and Costa, 2004a, b). The project design involved the teachers participating in a pre-project interactive interview (Maxwell, 2005) using the pedagogical tool Talking Stones to commence the project. They then met once a month over the course of 12 months whereby each meeting included a discussion about the learning they had engaged in over the course of the month. The content of these meetings included the discussion of professional readings undertaken, reviewing and discussing the Learning Stories developed, a discussion of highlights and difficulties encountered in their learning, and a reviewing of their learning aims.

The decision to commence this project with a pre-project interactive interview (Maxwell, 2005) using the pedagogical tool 'Talking Stones' was based on my acknowledgement of my positioning as the researcher. I wanted to establish trustworthiness through an investment in the relationships that I established with these three early childhood teachers (Hendry, 2007). To do so I knew I needed to 'walk with' these early childhood teachers in order to position myself as the embodied, self-consciously reflexive, partial knower, neither an 'insider' nor an 'outsider' (Richardson, 1997, p.185). Thus I made the decision to use Talking Stones for the pre-project interview.

Talking Stones is a pedagogical tool derived from the techniques used in Personal Construct Psychology (Kelly, 1955), adapted by Crosby (1993), and further modified by Wearmouth (2004). Personal Construct Psychology being a theory of personality developed by the American psychologist George Kelly (1955) who based his theory on the premise that people develop constructs as internal ideas of reality in order to understand the world they live in. Talking Stones, arising out of this psychology, has proven to be a powerful projective technique that encourages dialogue and facilitates thinking (Wearmouth, 2004). In fact, Wearmouth (2004) claims that Talking Stones as a pedagogical tool is deeply rooted in the notion of reflexivity. Therefore, she argues that Talking Stones is able to facilitate the articulation of such things as imaging, remembering, interpreting, judging, caring, feeling, and contemplating. This is said to be due to Talking Stones flexibility and thus its ability to enable those engaging with this tool to place meaning into concrete objects "which have no intrinsic meaning themselves apart from their own stone-ness" (Wearmouth, 2004, p.11).

Engaging with Talking Stones involved providing a selection of stones of various shapes, sizes, textures, and colours that were then used by the three early childhood teachers and myself as objects to represent our thinking. I invited the three early childhood teachers to make a selection of stones that they felt represented their current thinking about their practice and the learning they were about to engage in. As selections were discussed the stones were placed upon a cloth in which the borders represented a boundary and the cloth the potential journey of the Professional Learning Community. As the process evolved initial stone selections were built upon. Movement of the stones also took place during the discussion to illustrate proximity and importance of the various stones and what they were representing. Photos of the stones were taken as a visual record to compliment the verbatim transcripts.

Data analysis of the verbatim transcripts of this pre-project interactive interview was achieved by reading and re-reading the transcript to identify themes and to assist in the writing of analytical memos and the categorising of data into theoretical concepts (Maxwell, 2005). Drawing on a number of key works, these procedures were used as a tool to address my own subjectivities as a researcher and to obtain findings that are valid and reliable (Anderson, Herr and Nihlen, 2007; Guba and Lincoln, 2005; Feldman, 2007; Richardson, 1994; Richardson and St.Pierre, 2005; Glesne, 1997).

In presenting a discussion on the findings, I am conscious that the choices I make in how I write are heavily influenced by my own theoretical framings. I am aware that my aim is to tell a new story on teacher thinking; a story of teachers as they worked within the structures of a school. Therefore, my discussion will present a story that openly acknowledges the ungraspable meanings whilst also being concerned with the complexities, limitations and paradoxes within the story (Lather, 2007). Thus I present this discussion on the data arising out of the use of Talking Stones as a 'collective narrative' (Richardson, 1997). It is a narrative that presents the lived experiences of these early childhood teachers collectively, whilst acknowledging and respecting the untidiness and fragmentation of their daily lives within this school. This was a decision I made as I grappled with the challenge of re-presenting the lives of these early childhood teachers as the researcher and writer. Yet this decision to present a collective narrative has been made in the hope of making this task of re-presentation possible whilst remaining accountable to the lives of these three early childhood teachers (Visweswaran, 1994).

FINDINGS AND DISCUSSION

Picking up a stone that reveals an array of lines and cracks, she begins to explain:

> *"I was drawn to this one...I kind of feel like this work...in lots of ways has put cracks in my practice in terms of, challenged my thinking, and it is taking me on a new journey". Her thinking unfolds further as she places a new stone down; a stone that has a glassy, smooth surface and intricate lines of colours, its formation is beautiful. "This, this is a beautiful stone, it is really perfect and it is a beautiful blend. And I guess it kind of represents, for me, where I would like our practices to move towards"*

Cracks emerged from the analysis of data as a key theoretical concept. However, why cracks? In attempting to answer this question the selection of stones that were chosen and the ones drawn upon when talking about cracks assists here. The stones and their physical formations were facilitating the articulation of these thoughts; each stone being referred to when articulating notions of cracks within their practice had physical cracks within its surface. So here the physicality of the stones with their cracks and complex colouring were being used as a means of talking about the complexity of teaching. This accords with Wearmouth (2004) assertion that Talking Stones enables individuals to invest meaning in the concrete object. These early childhood teachers were investing meaning in the stones which had no intrinsic meaning other than their own stone-ness.

In reflecting on this finding of cracks as a key concept Stronach and MacLure (1997) speak about 'openings' in writing their introduction to a book on poststructuralism. They speak about openings as beginnings, or a crack, or a "violent opening such as a rupture or an incision" (Stronach and MacLure, 1997, p.1). Furthering this concept of an opening they describe openings as "not really a breach in the line at all, but just a kind of complication of it. A sort of fold or pocket" (Stronach and MacLure, 1997, p.1). Taking up this concept of a crack as just a sort of "fold or pocket", then, assists in bringing to light the empowering nature of exploring this finding of cracks. The cracks are enabling the early childhood teachers to engage in a type of conversation that is opening up new patterns of dialogue. Maybe a conversation that could be likened to Buchmann's (1990) description of a certain staged freedom to think that collapses spatial distances; anticipates the future whilst thinking about the present and remembering the past as though it were still the present (Buchmann, 1990).

> *Through the act of picking up a stone that has a white strip down the middle with black along the outer edges and*

some small visible cracks along its surface, an unfolding of the past and the future commences: "I picked up this one and I almost saw that as a pathway with a fork in the road. And for me...coming here has been very much a fork in my road. And probably that's practice wise as well as personally. I've certainly chosen to go with my personal philosophy regardless of what...I guess what the ramifications were of that. But to actually stand up and sort of really say to myself that no...I believe in working in a certain way and I'll pursue that instead of being somewhere I couldn't do that".

Here there is a reaching into thinking about what has happened and what has not happened. Britzman (2003) argues that the act of being able to align ones practice with a personal philosophy is difficult due to the contextual demands made upon a teacher. It is a difficulty that causes tensions within a teacher's practice yet is rarely discussed (Britzman, 2003). However, this stone has not only brought about an articulation of this difficulty that Britzman speaks of, the findings also show that it has permitted an exploration of the concept of 'childhood'. This is an important concept for early childhood teachers and one that must be made explicit to better understand the impact that this has upon a teacher's practice (Blaise, 2009; Mac Naughton, 2005).

"I guess in just the child and I quite like the white child with the black background. I think that stands for, umm, that sort of, umm not, well it is innocence I guess. But sort of that freshness that children bring to my life"

Here this finding of cracks as a sort of "fold or a pocket" is facilitating an articulation of an implicit theory of the concept of childhood. The literature demonstrates that early childhood teachers are discursively bound up in the historical discourses that have produced fixed notions of childhood (Blaise, 2009). However, there is reflexivity evident here brought about by the colours within the stones. There is a struggle to articulate exactly what this understanding of the concept of childhood involves; does it involve innocence? This questioning is a necessary aspect if early childhood teachers are to enter into the type of thinking that breaks free of these historical discourses (Blaise, 2009).

In unpacking this finding of cracks further I am mindful that the very act of 'becoming a teacher' is an ongoing process; a process that involves "struggles...to borrow, to negotiate, to claim ownership, and to take up that which seems already complete" (Britzman, 2003, p.54). However, it is a process that also begins to make possible the realisation of the power of embracing these cracks.

"I think in lots of ways the fact that we are prepared to embrace our cracks and all of that. We don't take ourselves too seriously...And I was just thinking of the practice that I have come from. It was smooth and you ticked the boxes... and there was no room for creativity, no room for real personality...and underneath though the cracks were not good cracks they were actually quite dangerous cracks to have underneath the surface. But these, these cracks are just almost like that webbing, that branching out, and where can you go from here and where can it lead...Its alive!"

The cracks have become a way of acknowledging not only their vulnerabilities as early childhood teachers but also how these vulnerabilities hold potential for learning. An awareness of, and an articulation of, the idea that some form of 'fracturing' is normative and not unexpected within teachers practice has been expressed (Zembylas, 2005). This is in keeping with the literature that highlights the importance of breaking free of notions of teaching that fail to recognise its complexities. Britzman (2003)

in particular claims that much of this complexity is denied in most accounts of teacher thinking. Yet there is a growing body of research that is now highlighting that teaching, including the act of engaging in learning and thinking, is an embodied act, and therefore, there must be a recognition of these vulnerabilities (Green and Reid, 2008).

Moving out beyond this concept of cracks and into the "folds and pockets" a further finding emerges; a fork within the road. Already there have been stones representing a fork within the road; *"coming here has been very much a fork in my road"*. The "folds and pockets" living within these cracks provides a sense of travelling or journey as these early childhood teachers articulate their current practice and where they see that this project is taking them.

> *"And I guess this one, I was drawn to this one because it is really perfect and a beautiful rock, a beautiful blend of all of those things and I guess it kind of represents for me where I would like our practice to move towards."*

However, to speak of perfection raises tensions that are said to be ever present in the practice of teaching (Britzman, 2003); tensions that are rarely talked about or recognised. In fact, Britzman (2003) says that there is a 'surprising force of uncertainty' within education that is repressed and denied in many ways. Thus, with this repression there arises a sense of single-handed responsibility to create a sense of perfection in one's practice (Britzman, 2003).

Choosing a stone with colours that are intricately interwoven creates a sense of perfection. She exposes her thinking before her colleagues. This is risky business, not a normal pattern of talk. Talk patterns have shifted. With this shift 'perfection' comes under analysis.

> *(Researcher): "Do you think you have to get to this one? This perfect rock?"*
>
> *(ECT 1): "Umm, I don't know because, and I am not under valuing what we are currently doing because what we are doing at the moment is great. And this is beautiful...this is a beautiful rock also. But I still think at the moment we are at that turning point."*
>
> *(ECT 2): "Maybe it is the cracks. They make it alive."*
>
> *(ECT 1): "I think in lots of ways the fact that we are prepared to embrace our cracks, and all of that..."*
>
> *(ECT 2): "And do you want it? Perfection? Because sometimes it is that mix and match of bringing in and all of that; that's what makes it alive!"*

Through the investment of meaning in these stones and their physical characteristics a discussion has taken place that has made visible the tensions that are ever present within a teacher's practice yet rarely articulated (Britzman, 2003). Perfectionism has been brought under examination by these two early childhood teachers here in the excerpt. The first early childhood teacher (ECT 1) expresses her need to reassure the other two that she is not undervaluing what they are doing, but rather, they are about to engage in a project that will have them thinking about their practice in a manner that will potentially bring about change; a turning point. The second early childhood teacher (ECT 2) shifts the focus on cracks as something that is lacking in their practice to something that potentially can bring about new learning and thinking: it's alive. This sees ECT 1 acknowledge that maybe it is not about perfectionism within her practice but rather an acknowledgement of the many influences that are contributing to their practices as early childhood teachers working together within this context. This exploration of perfectionism could thus be seen as bringing about a sense of purpose; a sense of agency (Britzman, 2003).

> *Reaching back into the bowl containing the stones a new stone is chosen and*

the journey continues along the fork in the road. "I was looking at this and I got it out as you were talking. It sort of brought up, well...I have been through so many changes...and I am in an interesting place...I feel like I am going into a new stage of my practice...I don't quite know what my purpose is at the moment."

Through the act of listening and looking at the stones in the bowl the articulation of these tensions within the journey of teaching has become possible. An articulation that highlights the tensions that Britzman (2003) talks about in relation to the negotiation that teachers undertake on a daily basis as they live and work within the multiple discourses present within a school. Arising from this tension though is the possibility for connections to be made as the idea of links between the forks within the road is explored.

"I am excited. If this is the school at the centre of this...you have chosen to be a link between this and this and what I see as our practice here. But it has taken a long time for me to get to a place working in this room where I have felt a sense of, I guess, respect for the work that we do. And I think that you've been a really strong advocate for that. And so I am happy that you've chosen to be a link between this world and this world."

The stones have become a means of articulating this negotiation that Britzman (2003) speaks of. They have become a means of finding agency within the competing discourses operating in the school through the idea of links between the stones and their placement upon the cloth. This has also uncovered and made visible a deep questioning of identity; *"it has taken a long time for me to get to a place...where I have felt a sense of...respect for the work that we do"*. The stones with their cracks and forks in the road have highlighted the centrality of a teacher's professional identity and its links with their daily work (Day et al., 2006). This is an articulation of practice that emphasises the manner in which a teacher's identity is always being "produced, negotiated and reshaped" (Zembylas, 2005).

With this understanding of a teacher's identity always being in the process of being produced, never centred securely in experience, Zembylas (2005) reminds us that tensions and struggles are the norm, not the exception. This becomes evident with a further unpacking of forks in the road and a leading into the concept of turning points:

"I am not under valuing what we are doing...but I still think at the moment we're at that turning point where we are drawing on new ideas. And being team leader...maybe some of this stuff is about my leadership role and a bit like you were saying about, well where do I fit into respecting everyone's philosophies and making sure we get a nice meld of a team. Where everyone feels valued... and everybody's philosophies are privileged and that we've got a nice melting pot of a team."

There is an articulation of the tensions associated with leadership. A certain questioning is taking place about leadership and the positioning of each member within this team. There is a desire to ensure all members are empowered to feel valued and respected. Within this there is evidence of identity work taking place through the enactment of a form of leadership that will make available space for the accommodation of the diversity of philosophies amongst these three early childhood teachers. Without the use of this pedagogical tool would such an articulation been possible? Drawing on Britzman (2003) who states that this form of conversation is rarely articulated, rather it remains as an internal dialogue and an ongoing tension, then I would assert that Talking

Stones has opened up this space and shifted an internal dialogue to an explicit conversation on leadership between these three early childhood teachers.

This finding is further strengthened when examining the perusing discussion. These three early childhood teachers begin to explore where they hope this work will take them in their practice.

> *"In relation to the school...this is the school? We talk a lot about visible learning, I guess I would really like to see more visibility...of the children's work and learning. So both ways, going more both ways....I just see really beautiful possibilities with things like shared reading, older children documenting the work of the younger, you know, that influence....It is happening already...with you...but its a huge untapped resource, the school. That's so exciting to me. There's all sorts of life going on in the school...so many people to have relationships with to become a real community....we're at a really exciting place....and if all I can do with having a connection and you as that link person is to change one teacher's image of the child, slightly, then you know that's amazing. How exciting!"*

This is an articulation that resonates with Buchmann's (1990) work as she questions whether teaching belongs to the active or contemplative life. By drawing on the work of Aristotle, who noted that an ability to teach is an indication of learning which traditionally has been associated with wisdom and truth, Buchmann maintains that teaching must belong to the contemplative life. Contemplating on what lies ahead can develop a vision and convey a desire to enter into dialogue with others. This focus on entering into a dialogue with others is a necessary object of contemplation (Buchmann, 1990). Being able to share what one delights in, is what Buchmann (1990) says, learners yearn for. Through this very act of contemplation it becomes possible to maintain that teacher thinking is a far greater act than that which can be captured in process-product research. In fact, Buchmann (1990) asserts that the life of teaching and the thinking associated with it must "[proceed] from the fullness of contemplation" (p.54).

CONCLUSION

Extricating the exact nature of this pedagogical tool Talking Stones that enabled teachers to articulate their thinking is difficult. Yet, Talking Stones did prove to be a powerful technique within this context. Talking Stones did disrupt familiar patterns of talk that facilitated these early childhood teachers in engaging in new ways of articulating their thinking. Meaning was invested in the cracks and the colouring within the stones. Investing meaning in the stones in this manner saw an opening up of dialogue and thinking. Much of this discussion could be seen as unsettling. However, as Britzman (2003) clearly demonstrates in her work this is a necessary requirement if teachers are to better understand their own practice and therefore their implicit theories guiding their practice. Thus the implication here is that Talking Stones as a tool used in research on 'teacher thinking' can begin to address this gap.

Furthermore, Talking Stones within this context has highlighted how education is a 'broken and uneven place' (McWilliam, 1994). The findings of cracks made visible the manner in which these early childhood teachers' identities were produced, negotiated, and reshaped as they lived out their practices within this independent school. However, the exact nature of Talking Stones and how they brought about the unfolding of this narrative remains elusive. Why stones? They are nothing more than just that – stones. This is a question that Wearmouth (2004) also asks at the conclusion of her paper whereby she acknowledges that the stones are nothing more than an object that has no other meaning other than their own stone-ness?

I can only draw on the work of Wearmouth (2004) here to begin to address such questions. So far I have been unable to locate any other available research that has adopted this technique. Wearmouth (2004) reports that the flexibility of the pedagogical tool is achieved when individuals are able to invest meaning in the stones. The texture, size, shape and colour enhance the investment (Wearmouth, 2004). The importance of reflexivity in Personal Construct Psychology is also noted (Kelly, 1955, cited in Wearmouth, 2004). As such, it is a psychology of interpersonal understandings as opposed to a psychology of common understandings (Wearmouth, 2004). Knowing this correlation it becomes feasible to see that the stones brought about reflexivity and a focus on interpersonal understandings. They also brought about an articulation of internal thinking; thinking that has been attributed to the development of teachers' implicit theories about teaching and learning. Implicit theories that are said to play a critical role in how teachers enact their daily practice (Clark, 2005). Therefore, the relevance of the findings here are that if future research on teacher thinking is going to begin to address the gap as identified by others in the literature (for example: Clark, 2005; Denicolo and Kompf, 2005; Elbaz, 1990), then the importance of employing a tool that can facilitate the articulation of implicit theories is critical. The silencing of teachers' voices in the research has only to date limited research insights into teacher thinking (Cole, 1997; Elbaz, 1990; McAninch, 1993). This paper has begun to address this very area.

In conclusion then I consider this pedagogical tool Talking Stones to have enabled these early childhood teachers to engage in deep thinking and reflexivity. Yet I acknowledge that it is only one small study with three early childhood teachers. However, it has shown the use of Talking Stones has supported these three early childhood teachers to commence the difficult task of articulating and unpacking their practice and thinking prior to commencing this participatory action research project. Talking Stones in this context was therefore effective in creating a certain staged freedom to think that Buchmann (1990) says is critical. This is a type of freedom to think that may open up the research on teacher thinking and begin to address the limitations and the gaps that have been identified within this body of research. In making this known I conclude by drawing on the work of those who are also calling for research that supports teachers engaging in the type of thinking that will move beyond simple process-product research to research that permits teachers to imagine, remember, interpret, judge, care, feel and contemplate (Britzman, 2003; Day et al., 2006; Zembylas, 2005). Only then may new insights into teacher thinking become possible (Buchmann, 1990).

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