

“The factor that makes us more effective teachers”: Two Pre-service Primary Teachers’ Experience of Bibliotherapy

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This paper describes the experiences of two pre-service primary teachers in a teacher education subject focusing on mathematics and learning difficulties. It describes how bibliotherapy was a powerful reflective tool that provided them with the opportunity to respond cognitively and affectively to their own schooling. By analysing readings about school students’ learning and issues such as mathematics anxiety, they reflected on and reconstructed their understanding of their own school experiences. In turn, this challenged their assessment of their capacity to learn and teach mathematics. Bibliotherapy was a healing process that generated both enthusiasm for teaching and an enhanced confidence as the pre-service teachers looked to the future.

People will forget what you said
People will forget what you did
But people will never forget how you made them feel.
(Unknown)

The impact of teachers’ beliefs about mathematics and learning on their teaching practice is a well-researched problem (Schuck & Grootenboer, 2004; Thompson, 1992). There is also strong evidence to suggest that self-efficacy in mathematics has a profound impact on teachers’ practice, particularly in the elementary school (Hart, 2002; Wilson & Cooney, 2002). Self-reflection has been advocated to draw out those beliefs and feelings, yet beliefs in particular remain particularly rigid and resistant to change (Flores & Brittain, 2003; Sliva & Roddick, 2001). Bibliotherapy provides a framework for a type of structured self-reflection that has been shown to have potential to enhance the self-esteem of pre-service teachers (Wilson & Thornton, 2005a, 2006). Its potential lies in its capacity to elicit both an emotional response and a cognitive response, and thus the opportunity to simultaneously change both the way pre-service teachers feel about themselves and what they believe about mathematics.

Bibliotherapy gives teacher educators a framework through which to examine and interpret the reflective process, providing them with a shared language to talk about pre-service teachers’ emotional responses in terms of the stages of identification, catharsis, insight and universalization, as described below. This process may be an important adjunct to education coursework units that focus on learning mathematics and planning lessons, because it might be a powerful agent that changes the way students feel about themselves, and think about themselves as learners and potential teachers.

Pre-service teachers who undertook a coursework unit in 2003 that focused

on mathematics and learning difficulties stated in their evaluations that, when reading case studies, they had strongly identified with children who found learning mathematics difficult. This prompted us as the lecturers in the unit to design a small-scale research project to further investigate these observations. We hypothesized that pre-service teachers studying students' difficulties in learning mathematics, particularly the effect of mathematics anxiety, would reflect on their perception of themselves as learners of mathematics, re-evaluate their own experiences, develop their self-image as learners of mathematics and gain insight into how children's anxiety about mathematics can be minimised by teachers (Wilson & Thornton, 2005b). Our research linked reflection in teacher education to the technique of bibliotherapy as a strategy for pre-service teachers to examine their attitudes towards learning mathematics and its potential to enhance their confidence as future teachers of primary school mathematics (Wilson & Thornton, 2005b), not only "healing" through this process, but also "enthusing" pre-service teachers as they thought about how they might teach mathematics in the future (Wilson & Thornton, 2006). This paper looks in depth at the experiences of two pre-service teachers as exemplars of how the stages of bibliotherapy were manifest during the course.

Literature Review

The literature review discusses research on three components: bibliotherapy, pre-service teacher beliefs, attitudes and emotions, and pre-service teachers' reflections.

Bibliotherapy

Bibliotherapy is a technique which aims to assist individuals to overcome negative emotions related to a real-life problem through "the guided reading of written materials in gaining understanding or solving problems relevant to a person's therapeutic needs" (Riordan & Wilson, 1989, p. 506, quoted in Myracle, 1995). It can be described as "a process of dynamic interaction between the personality of the reader and literature — interaction which may be utilized for personality assessment, adjustment and growth" (Cornett & Cornett, 1980, p. 8). The procedure is based on the active process of reading about the dilemmas of a third person, followed by discussion in a non-threatening environment (Aiex, 1996). Bibliotherapy assumes that reading is a dynamic process, in which the reader is an active participant and identifies with the protagonist, interpreting through the lens of their own experiences. As the reading involves a third person, the reader is able to experience the problem from an objective viewpoint. This interactive process has the capacity "to heal and enthuse" (Martin 2002, p. 34). Our study involved developmental interactive bibliotherapy with a focus on examining personal responses to prior experiences.

In bibliotherapy, researchers have tended to concentrate on three stages: identification, catharsis and insight. Halstead (1991) refers to these three stages as "recognising", "feeling" and "thinking" (p. 80). A fourth stage, universalisation,

has been described (Slavson, 1950, quoted in Hebert & Furner, 1997) and was evident in the pre-service teachers' responses during this study. In our research, pre-service teachers also projected into their future as teachers of mathematics, describing greater enthusiasm and a determination not to repeat any disabling teaching that they had experienced. These stages of bibliotherapy can be summarized as:

Stage 1: Identification — the reader identifies with and relates to the protagonist. "Examining the behaviours and related motives of another individual can act as a transition into the exploration of one's own perceptions and actions" (Morawski, 1997, p. 247).

Stage 2: Catharsis — the reader becomes involved and releases pent-up emotions. Tension is released with an "emotional feeling that lets the readers know they are not alone in facing their problems" (Hebert & Furner, 1997, p. 168). Identification is more strongly established, and the reader reviews and addresses the feelings associated with the incidents, which helps "them to experience and benefit from catharsis" (Morawski, 1997, p. 247).

Stage 3: Insight — this stage moves the emphasis to the reader. "Insight is the reader's application of the character's situation to her own life" (Halstead, 1991, p. 67). The reader envisages new ways of looking at the issues that they face (Hebert & Furner, 1997). Having achieved release from tension, the reader learns through the experiences of the character and evaluates the reasons behind her attitudes and behaviours, recognising that her current feelings are valid in terms of her past experiences.

Stage 4: Universalization — the recognition that we are not the only one having these problems, we "are in this together" (Slavson, 1950, quoted in Hebert & Furner, 1997, p. 170). Aiex (1996) states that one of the reasons for using the technique of bibliotherapy is for an individual to come to the realisation that others have the same problem.

(our) Stage 5: Projection — the readers' added insight into their own circumstances is followed by a consideration of what this could mean for the future. We term this fifth stage of the bibliotherapy process "projection".

We maintain that the ultimate power of bibliotherapy in pre-service teacher education is its capacity to enable pre-service teachers to re-assess their beliefs and emotions, and hence to redefine their identity as potentially more effective and enthusiastic future teachers of mathematics.

Beliefs, Attitudes, Emotions and Identity in Mathematics Education

Mathematics classes became sheer terror and torture to me. ... my fear of failure and my sense of smallness in the face of the vast world around me created in me not only a dislike but a kind of silent despair which completely ruined school for me. (Jung, 1977, p. 45)

Beliefs, attitudes and emotions in the learning of mathematics have been the subject of significant research for many years (Schuck & Grootenboer, 2004; Thompson, 1992). As Jung so vividly describes in his autobiographical account

of his own schooling, failure in mathematics can have a powerful emotional impact that may extend far beyond the mathematics classroom. A similarly strong, negative emotional impact may influence pre-service teachers, not only in their current study of mathematics, but also in their future teaching of mathematics and hence the attitudes of their future students.

Thompson (1992), in an extensive review of research into affective elements of mathematics education, noted that the difficulties in promoting teacher change were intimately connected with both what teachers know and believe. Pre-service primary teachers often approach mathematics timidly, and with memories of unhappy school experiences. Grootenboer (2006) suggests that beliefs have both a cognitive and an affective dimension. They are generally based on evidence and held in good faith (Wilson & Cooney, 2002), hence they are notoriously hard to change (Grootenboer, 2006) and act as a regulating system (Hart, 2002). Thus, addressing teachers' beliefs about mathematics learning and themselves as learners of mathematics is critical if teacher change is to be other than temporary or superficial (Wilson & Cooney, 2002).

Research on teacher emotions is less extensive than that on teacher beliefs (Grootenboer, 2006), however emotions are no longer considered merely as a by-product of learning experiences, but as an important constituent in learning. Emotions clearly have a stronger affective element than beliefs and a less obvious cognitive aspect. They may be more temporary than beliefs, as they are stored in episodic memory (Tillema, 2000). Carroll (2005) found that almost one third of primary teachers identified their school experience as contributing significantly to their beliefs and emotions about mathematics, some in a negative way. For this reason addressing pre-service primary teachers' perceptions of these experiences may well be a critical aspect of their education in mathematics.

Attitudes arise from the interplay of beliefs and emotions (Philippou & Christou, 2002). They may be thought of as learned, and manifest in responses to particular situations, however consistent patterns influenced by emotions, beliefs and experience are often identified among teachers of mathematics. These responses may be characterised by confidence or anxiety, likes or dislikes, engagement or avoidance and the development of positive or negative self-concept (Beswick, Watson, & Brown, 2006).

The bibliotherapy approach used in this research differs from previous research in that it simultaneously addresses affective and cognitive domains, and in the process provides pre-service teachers with the opportunity to enhance their identity as future teachers of mathematics. Enhancing pre-service teachers' self-image as learners and doers of mathematics contributed to their developing the capacity to see mathematics as making connections, to seeing learning as developing deep knowledge, to seeing their role as teachers as being to provide opportunities for school students to solve rich and complex problems, and to adopting a view that all students can learn mathematics.

Reflection

Researchers have reported on the benefits of reflection in pre-service teacher education courses. Borasi (1990) emphasised “the key importance for students to *become aware of, and reflect on, their beliefs, as well as possible alternatives*, since beliefs are more powerful the more they are held unconscious and unquestioned” (p. 179). Buerk (1982) described students who believed that “mathematics is only a collection of correct answers and proper methods” (p. 19), and how their view of mathematics knowledge may be inconsistent with their general view of knowledge, causing discomfort because of these disparate views, especially if they have a tendency to be reflective. She suggested that identifying, reflecting on and overcoming the disparity may lead to more comfortable feelings about mathematics.

Flores and Brittain (2003) describe the use of writing “as a tool to help pre-service teachers reflect on their growth as they learn to teach mathematics” (p. 112). However, reflection alone may not serve to help pre-service teachers form new belief systems (Ambrose, 2004). Morawski (1997) suggests that bibliotherapy can be a stimulus for these reflective practices at both the pre-service and in-service levels. In particular, bibliotherapy provides a mirror in which pre-service teachers can see themselves and their school experiences, and a lens through which they can construct themselves as potentially enthusiastic and effective future teachers of mathematics.

Methodology

Research Context and Data Collection

The setting for this study was the elective unit *Mathematics and Learning Difficulties*, at an Australian urban university, which focused specifically on difficulties school-aged children experience in mathematics, as a consequence of specific learning difficulties and of cultural and attitudinal factors. Pre-service teachers examined research papers reporting how school children feel about mathematics and about themselves as they learn mathematics. The emphasis of the unit was on students who struggle in the mainstream classroom rather than those with specific learning difficulties.

Instruction in this unit followed the bibliotherapy model, and consisted of the following steps:

- Encouraging pre-service teachers to write about and reflect on a critical incident in their own schooling;
- Selecting weekly readings that related to the experience of learning mathematics in a classroom, particularly for those students who find it difficult or suffer anxiety;
- Arranging for pre-service teachers to write a guided reflection each week, encouraging them to think about their own experience of school mathematics;
- Organizing for students to share their reflective writing.

Readings were chosen to give a broad overview of the difficulties that primary school students have in learning mathematics, and encouraged pre-service teachers to consider both the affective and the cognitive dimensions. They included readings about mathematics anxiety (Dossel, 1993), understanding in mathematics (Skemp, 1976), classroom interactions (Zevenbergen, 2000) and exclusion from school mathematics (Walkerdine, 1990). The readings focused on both psychological and sociocultural aspects of learning mathematics.

In the first workshop, pre-service teachers were asked to describe a critical incident (positive or negative) from their own school mathematics education that impacted on their image of themselves as learners of mathematics. During semester as part of the assessment for the subject students were required to keep a log of reflections on readings, personal observations in schools and voluntary further reflections from their own schooling. Prompts were provided for journal writing, including: something I learned, something I felt reassured by, something that surprised me, something I disagreed with and something I would like to know more about. This was presented as an open-ended task and students were not required to address every prompt.

Ethics and Student Sample

Pre-service teachers who agreed to participate in the study chose which of their reflections were sent for the research project, and had the opportunity to send additional reflections for the purposes of the research, directly to a third party without the lecturer's knowledge. The pre-service teachers were aware that reflections submitted for the research did not form part of the assessment for the course and did not need to satisfy formal assessment requirements. All reflections were sealed until the unit was finished and formal assessment had been completed. The design of the study was examined by the university's ethics committee to ensure that results would not be skewed by pre-service teachers submitting spurious reflections purely in order to pass the unit. Journals submitted for assessment but not explicitly sent as part of the research were not reported in the study.

All thirteen pre-service teachers who were enrolled in the unit agreed to participate in the study. The journal reflections of most of these students contain evidence of the stages of bibliotherapy described above (Wilson & Thornton, 2006). In this paper we have chosen to use Barbara and Jenny as exemplars to illustrate the bibliotherapy process. These two pre-service teachers were selected because they gave particularly vivid accounts of their own schooling, detailed reflections on weekly readings, and continued to submit reflections throughout the duration of the course.

Barbara's Story

Barbara was in her fourth year of a primary Bachelor of Education degree. She had previously studied a first year "Mathematics for Teachers" subject, however she dropped it during that year, repeated it the following year and sought help

from the Learning Centre. She was in her late thirties and had a daughter in secondary school. She had left school at the end of Year 10 and had worked in several jobs before returning to university as a mature-age student.

Barbara's most vivid recollection of her schooling was when she was in Year 4. She retained intense memories of her experiences with a "disabling" teacher and was able to describe in great detail the physical layout and conditions of the classroom. She described how her teacher, "Miss A", made the class line up for times tables questions before students were allowed to go out for lunch.

After a number of failures Miss A's facial expressions became unbearable to see. I remember 'putting up a wall' avoiding her looks but still trying to get the right answer in the right time. Miss A eventually took to getting cross and impatient, detected through facial expression, body language and her tone of voice. I shut down, I did not make eye contact. I did not react. I could feel my wall sliding up and closing my mind so that I could not respond and looking back protect myself.

Barbara's year 10 teachers said she did not have the ability to continue at school, yet she was proud of her hard work and success at university. In her reflections on her own schooling Barbara recognised the lasting impact of individual teachers, a common theme identified by most of the pre-service teachers in the course and in the literature (Ellsworth & Buss, 2000; Sliva & Roddick, 2001; Trujillo & Hadfield, 1999; Wilson & Thornton, 2005a).

I wished I could say something to those teachers. They still impact on me. ...I don't want to be a teacher that I had as a child. I believe I know a lot about the damage that can be done, to avoid it.

In the second week of the course Barbara read and reflected on articles related to mathematics anxiety (Dossel, 1993) and students who are seen as different and marginalised (Walkerdine, 1985). She identified strongly with the students and situations in the articles.

The article by Steve Dossel (1993) presented issues that I was able to relate to personally... I related deeply to the 'unconscious defends itself' statement by Walkerdine (1990).

In these reflections, Barbara was experiencing the first stage of Bibliotherapy (identification) as described above. Her immediate response to this was to become emotionally involved and to share and release pent-up emotion (catharsis).

I experienced the being 'stupid' and 'vague' discussed by Walkerdine (1990) through shutting myself off from the pain of a 'competitive classroom' and protecting myself from 'the effect of public failure', Dossel (1993, p. 5).

In week three pre-service teachers read about learning mathematics with understanding (Reys, Lindquist, Lambdin, Smith & Suydam, 2000; Skemp, 1976). In reading about the importance of meaningful problems to develop relational

understanding, Barbara realised that her own mathematics education had been lacking and that the anxiety that she had experienced had not been her fault.

My primary school teachers wrote algorithms on the blackboard from a textbook and we merely had to copy these into our workbooks and then complete these by writing the answers. I remember that what seemed to be the most important aspects of these lessons were having a neatly ruled margin and the day's date. ... How successful was my learning in these classes? I believe that these are some of the reasons why I found mathematics a challenge and frightening. ... If I had the opportunity to understand why we performed the procedures we did perhaps I would not have developed the anxieties I have had towards mathematics.

Barbara thus became aware that her problems might be addressed or solved (insight). Her reflections showed a strong growth in her perception of herself as a learner of mathematics and made her determined to provide her students with something different. She developed a greater awareness that there are alternatives to the approaches that she experienced.

I have gained more knowledge about how to improve mathematics teaching and learning. I have always understood what types of teacher I wanted to avoid being from my personal experiences.

Barbara saw that the reasons that many students disengaged from school mathematics were identical to the reasons that she herself had disengaged (universalisation). She found that she was not alone in her feelings and experiences (Rizza, 1997).

Because of my negative experiences in primary school I believe I understand what can help to create mathematics anxiety. ... I have the experience to empathise with students and not to scowl at them or put them down, overtly and/or covertly, for not succeeding but to learn positively through errors and to feel safe to participate.

From week five the focus in the course shifted to practical aspects of teaching and assessment. Barbara particularly identified with an article by Roberts (1998) in which she described "the classroom from hell". Barbara described how many of the behaviour problems she had observed among the students she had been teaching in her practicum arose because they did not value the disconnected and irrelevant activities that they were used to.

Barbara's added insight into her circumstances was followed by a consideration of what this could mean for the future (projection). She thought deeply about how she would position herself as a teacher, devoting extensive sections of her journal to a consideration of the effects of the readings on her intended teaching practices. The comments about teaching focused on characteristics of good teachers of mathematics, and her aim for her own teaching to be substantially different from the way that she was taught.

I strongly believe that Gardner's theory of MIs provides a wonderful opportunity for teachers to include mathematics into all areas of the curriculum.

... Mathematics may not then end up just being a process to be learned but hold a relevant and significant place within students' learning because they have been able to experience meaningful connections.

Bored, lazy, easily distracted, tries hard but does not get it, quiet in class, types of comments may mean much more than we realise.

Barbara wrote about the importance of meaningful and realistic assessment (Van der Heuvel-Panhuizen, 2000) that involved students learning from mistakes (Dole, Cooper & Lyndon, 1997).

I recall ... how frustrating it was to not understand what I was learning. The teacher's responses were frequently 'because that is the rule', they seemed to have the knowledge and the power, I was left powerless and for want of a better word (but it is how I felt) 'knowledgeless'.

I strongly believe that learners need to be a part of the processes ... within a supportive environment ... where mistakes are valued.

Throughout the semester Barbara's writings progressed through the stages of bibliotherapy described above. She retained strong memories of her own schooling, responded emotionally to readings focusing on students' experiences, recognised that her difficulties were not always of her making and were shared by many students, and incorporated all these feelings as she projected into her future as a teacher of mathematics.

I recall that during my primary school years that rote learning was a major emphasis in mathematics teaching. I felt alienated by the process and understood it to be something we did to keep the teacher 'happy'. The purpose of this learning was never made explicit, perhaps if it had been I would have understood the relevance of this to my mathematical education and life beyond school. ... I have read many texts that discuss ... mathematical learning difficulties and disabilities. My realisation is clearer about the future ahead for mathematics teachers.

Jenny's Story

Like Barbara, Jenny was also in her fourth year of a primary Bachelor of Education degree. She was in her late thirties and had attended primary school in the 1970s. She describes herself as an "A" or "B" student in primary school and she saw mathematics as "clear, logical and easy to illustrate visually". Yet this changed when she was in high school. Experiences of not being able to understand mathematics through not being able to visualise it, led her to believe that her ability at mathematics was "less than average". She completed 2-unit HSC mathematics but only answered four questions out of ten in the final examinationⁱ. She described her high school experiences as being dominated by "sterile classrooms, fat textbooks, only one way to get an answer and no visuals".

i 2-unit HSC mathematics was a New South Wales Year 11 and 12 course that provided background in topics such as algebra, trigonometry and introductory calculus for students who intended to undertake tertiary studies but not a major in mathematics.

In every classroom I sat in as a child I was required to complete maths exercise such and such. There was no question of doing only question 1, 3, 5, and 7. Every question was to be done with all the working out shown. I am now convinced that mathematics textbooks need not have been so large and cumbersome.

Jenny expressed concern that although research might suggest that there are better ways of teaching, her eldest son was, even today, experiencing the same type of learning.

In her early journal entries Jenny highlighted a cycle of fear, failure and avoidance (Sliva & Roddick, 2001; Wilson & Thornton, 2005a). Her feelings of embarrassment at thinking that she was the only one who didn't understand gave way to resignation and a sense of inadequacy. Having identified her own anxiety through readings such as Dossel (1993), Jenny also experienced a release of emotion (catharsis).

This represented the final humiliation in a long battle with mathematics and justified my belief that I was no good at mathematics. My maths anxiety was now fully fledged and is something I battle with even now.

Jenny's recollections gave her greater insight into what she had seen happening amongst children she had been teaching. She described:

a myriad of task avoidant strategies, such as needing to use the bathroom, hiding behind a door on the pretext of needing a drink and sharpening a 15 centimetre pencil to just over five centimetres, in an effort to delay beginning work in a mathematics lesson.

Jenny particularly highlighted the prevalence of a right/wrong dichotomy in school mathematics, the discomfort that comes from getting things wrong, and the development of the mathematics avoidant student. She felt that many students had been excluded from experiencing much of the meaning and challenge of mathematics.

I assume that I, along with others, was part of the natural attrition in the mathematics classroom and excused from anyone's expectations of higher order thinking.

Like Barbara, she also recognised the potentially debilitating effects of some assessment practices.

Much of the current standardised testing and benchmarking ... ultimately becomes the measure of achievement and provider of opportunity. Children who experience difficulties with mathematics recognise this, globalise the problem to mathematics in general and resign themselves to never achieving any level of success in the subject.

Jenny's insight into the foundations of her own mathematics anxiety and exclusion, and her awareness that many of her colleagues shared the same anxiety, caused her to reflect on the difficulties of changing teachers' practices (universalisation).

[There is a] conflict between the method by which they became ‘subjected’ to the teaching of mathematics (Walkerdine, 1990) and the current research and practices being taught to them as pre-service teachers. Without constant reflection and care when programming it is easy to fall back to the methods experienced when they were in the classroom — not unlike the children who do not search for understandings when procedures work.

As the semester progressed, the focus of Jenny’s comments moved from reflections about her own inadequacy to the reassurance she felt when faced with research that concluded that the best teachers were not always those who had performed best in mathematics at school (Askew, Brown, Rhodes, Johnson & Wiliam, 1997).

It gives me great comfort to know that although I may not graduate at the top of the mathematics class, this will have no lasting bearing on my ability to teach it.

Extensive sections of her journal were devoted to a consideration of the applications of the readings to her intended teaching practices and her aim for her own teaching to be substantially different from the way that she was taught.

There is no place for the methods of my past in classrooms of today if I wish to stop the cyclical nature of instrumental mathematics teaching experienced to date.

Some of her comments addressed specific issues such as the need to ensure that her students see purpose and make connections in their mathematics learning. She felt that as a result of her experiences in this unit she would be able to successfully teach students who were experiencing difficulties.

The keys so far appear to (be) connecting mathematics, context, rich tasks, children’s life experiences and the classroom climate.

Like Barbara, Jenny projected herself confidently into the classroom teaching situation and wrote about the importance of classroom discussion, perseverance, visualisation, learning from mistakes, realistic assessment, and above all, *positive attitudes*. As Carnellor (2004) writes, “Positive attitudes not only enhance the quality of learning, but also the degree to which learning and understanding become embedded in the real-life experiences of the individual” (p. 5).

Early in the course Jenny summed up her own school experiences with a pencilled note at the bottom of the page.

Basically I feel a bit cheated — like I got a second rate education.

Her later writings provided clear evidence of the healing process of bibliotherapy and of her determination not to give her own students a similarly second-rate education.

Bibliotherapy thus provided a mirror in which Barbara and Jenny could see themselves and their school experiences, and a lens through which they could construct themselves as potentially enthusiastic and effective future teachers of mathematics.

Conclusion and Implications

The power of bibliotherapy, as exemplified in Barbara's and Jenny's stories, lies in the way that their cognitive responses were allied with emotional responses. It changed both the way they felt and their understanding of their own and others' difficulties and anxieties in the mathematics classroom. Through this reflection they put their own experiences into perspective, developed enhanced self-images as learners of mathematics, and changed their assessment of their capacity to learn and teach mathematics. As Wolodko, Willson and Johnson (2003) write, "our challenge is to help pre-service teachers confront their past experiences and anxieties about teaching and learning of mathematics. If these are openly dealt with during their university education, fewer teachers may be content to teach just as they have been taught" (p. 224).

The explicit focus on school students' learning difficulties in mathematics proved to be a powerful element in addressing the anxiety felt by Barbara and Jenny. The experience of identification, catharsis, insight, universalisation and projection allowed them to reflect more effectively on their beliefs about mathematics learning and teaching, and to realise that negative experiences in school mathematics were not their fault. Bibliotherapy was thus a powerful tool in healing and enthusing.

More than this, Barbara and Jenny saw their own experiences as an asset rather than just something to be overcome. Bibliotherapy opened their horizons to new ideas and made them determined to give their students learning experiences that would be different from their own.

This also leads me to my second thought that, for those teachers, who like me, have never believed maths to be their "thing", there is the distinct possibility that our desire not to let students suffer our fate and to improve on our own childhood experiences in classrooms could well be the factor that makes us the more effective teachers. We are more open to the need for reflective teaching and professional development, and more willing to look for alternate explanations and examples. (Jenny)

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