Professional development of early career teachers: A pedagogical focus on cooperative learning

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Teacher retention has long been recognised as a significant problem in many education systems, while retaining early career teachers is particularly problematic. Although a variety of interventions have been suggested to support beginning teachers, too little attention has been paid to the importance of enhancing their knowledge about pedagogy in the early years of teaching. This paper examines data from an action research study that explored the impact of cooperative learning pedagogy on the professional learning of early career teachers. It focuses on the experiences of two early career teachers, one in her first year of teaching and the other in her third year, who participated in professional development on cooperative learning. Classroom observations and teacher interviews are analysed to explore the teachers' implementation of the cooperative learning strategy, their understanding of the practice and its impact on their attitude to teaching. The paper argues that a focus on pedagogy was significant in enhancing these early career teachers' professional accomplishment, as well as maintaining their enthusiasm in the early years of teaching with implications for retaining quality teachers in the profession.

Introduction

The difficulty of retaining early career teachers in the profession has been widely documented. Commencing teachers often experience 'reality shock' (Veenman, 1984) as they juggle the "complex and diverse demands, knowledge bases and contexts for teaching" (Martinez, 2003, p.8). Multiple expectations including "programming, catering for a range of student needs, assessment and reporting and the overriding issues of classroom management" (McCormack, Gore, & Thomas, 2006, p.96) provide considerable stresses on early teaching experiences (McCormack & Thomas, 2003).

Beginning teachers often have inadequate knowledge of school context, for example socio-cultural factors and expectations of parents in particular school communities. This can affect and challenge their prior knowledge and beliefs and their self image as teachers (McCormack, et al., 2006). How they are prepared to teach is not always sustained by their school cultures (Wang, Odell, & Schwille, 2008) with beginning teachers often needing to consider the compromise between their university training and that of their school context and school supervisor (Khamis, 2000). There is a strong correlation between teacher self-efficacy and teacher burnout with autonomy being diminished when new teachers have to organise teaching in ways that are in conflict with their own beliefs (Skaalvik & Skaalvik, 2007).

Not surprisingly, a large number of new teachers are leaving the profession in their first five years of professional practice, a matter of grave concern for the international teaching community. High attrition rates have been reported in both the US and Australia. Darling-Hammond's US report shows 30% of teachers leaving in the first

five years (Darling-Hammond, 1999a) whereas in New South Wales (NSW), Australia, 20% of new teachers leave the profession in their first five years of professional practice (Manuel, 2003). If teachers are not supported in these early years it is more likely that they will not 'persevere'; that the environmental impediments and other obstacles they face will remain too great.

Professional development and teacher induction can play a critical role in enhancing teacher retention and ensuring that beginning teachers do more than survive the early crucial years of teaching. But the quality and type of professional development offered is fundamental. New teachers in NSW report provision is insufficient and they claim mentoring programs are inadequate (Department of Education Science & Training, 2002; Martinez, 2003). Darling-Hammond (1999b) reports that that few teachers receive any kind of formal induction process (Darling-Hammond, 1999b) and the content and characteristics of induction programs vary considerably from, "a single orientation meeting at the beginning of a school year to a highly structured program involving multiple activities and frequent meetings over several years" (Smith & Ingersoll, 2004, p.683).

The provision of ongoing professional development of teachers remains 'largely neglected' in Australia (Kalantzis & Harvey, 2002, p.9). In NSW, the site of the research reported in this article, school-based induction programs are suggested, although not mandated, with the beginning teacher's school supervisor, in conjunction with the principal, being responsible for ensuring they meet the professional teacher standards within the first three years of teaching (NSW Institute of Teachers, 2006). While Carter and Francis (2001) argue that mentoring relationships should promote collaboration, reflection and be cooperative for transformative learning to occur (Carter & Francis, 2001), it is not clear that this happens.

In the UK, mentoring and induction practices have been equally blurred (Williams, Prestage, & Bedward, 2001) with mentors having multiple and diverse roles. Many have made reference to the fact that the mentors of new teachers have difficulty in "articulating their pedagogical knowledge and how it is translated into practice" (Jones & Straker, 2006, p.166-7). Wang and Odell (2002) point out that new teachers often concentrate more on the nurturing aspects of teaching in their first years regarding pedagogy as less important(Wang & Odell, 2002). Vonk's (1989) identification of two distinct phases in the professional development of teachers in their early years is also important to note: the idea of two phases, the threshold' and the 'growing into the profession' phases The threshold, the first year of teaching is where new teachers are responsible for the first time for full time teaching and many describe this as 'transition shock' (Veenman, 1984) whereas, the growing into the profession phase is described by Vonkas acceptance by colleagues as a teacher. It is also a time when teachers are starting to focus more upon skills, methods and competencies (Vonk, 1989). Three phases for beginning teachers; the honeymoon, the crisis, and the failure or getting by phase are also advocated by Lacey (Lacey, 1977). It is important that beginning teachers are supported in their pedagogical skills in the early years: in this 'growing into the profession' phase and before they reach the 'failure or getting by phase'.

Feiman-Nesmer's 'educative mentoring' concept is also important to acknowledge as it is in the beginning years of teaching that teachers need to develop an inquiring stance that leads to ongoing expertise in their field (Feiman-Nemser, 1998, 2001b). "Educative mentoring rests on an explicit vision of good teaching and an understanding of teacher learning. Mentors who share this orientation attend to beginning teachers' present concerns, questions, and purposes without losing sight of long-term goals for teacher development" (Feiman-Nemser, 2001b, p.18). This mentor encourages an inquiring stance, encourages reflective practice enabling early career teachers to learn in and from their practice and use their own expertise to guide the teacher in the right direction. We cannot assume that good mentoring practices in pedagogy will occur for most early career teachers and that they will be able to access such an 'educative mentor', or that without a focussed concentration on pedagogy in their early years that they will see its importance.

The focus of this paper is to examine the effects of pedagogy-based mentoring on two early career teachers in NSW, Australia, one in her first year of full time casual employment, the other a teacher in her third full year of permanent work. It starts from the premise that the most effective kind of professional development will develop pedagogical knowledge with great specificity and explores how a cooperative learning pedagogy, in particular, supported two teachers to go beyond 'survival'. The paper begins by considering why a focus on pedagogy can ensure quality student outcomes and retain quality teachers in the profession. It then outlines the structure of a cooperative learning (CL) professional development and examines findings from analysis of classroom observations and teacher participant interviews. The research question being explored in this paper is "How does professional development in cooperative learning, using an action research approach, influence Early Career Teachers' understandings of cooperative learning and teaching practice?" The two teachers selected were a part of a larger study of six teachers in different primary contexts and whom elected to become a part of the study as they wanted to engage in professional development in cooperative learning and become a part of a collegial community of early career teachers under the guidance of an 'educative mentor'. The paper concludes that the teachers were not only successful in learning how to implement CL strategies that can improve students' social and academic outcomes, but that the pedagogical strategy itself helped to sustain teachers' enthusiasm early in their careers.

A focus on pedagogy for quality outcomes

There is widespread consensus that teaching quality is a critical influence, with individual teachers being the single largest factor that adds value to student learning (Cochran-Smith, 2003; Ingvarson, 2002; Rowe, 2003) and having the most significant impact on student outcomes (Darling-Hammond, 1996, 2000; Hattie, 2003; Hill & Rowe, 1998; Cuttance, 1992 as cited in Rowe, 2003, p.16). Darling-Hammond puts it strongly, "Well prepared capable teachers have the largest impact on student learning and they need to be treasured and supported" (Darling-Hammond, 2003, p.7). So assisting teachers, particularly early career teachers, to further develop their teaching skills is important if we are to improve student outcomes (Zbar, 2003).

Gore, Williams and Ladwig (2006) argue that for the most part pedagogy is neglected in the induction of early career teachers. They also argue that the quality of the teaching demonstrated by such early career teachers is not significantly different from their more experienced colleagues. However, even when teachers are well prepared for teaching in their pre-service preparation, they are still learning to teach, and the general neglect on pedagogy in professional development after these teachers have 'hit the ground running' is a concern (Gore, Williams, & Ladwig, 2006a). Continuing professional development for all beginning teachers will be crucial, to support their retention in the teaching profession, and also ensure positive impacts on curriculum and pedagogy (Muijs & Lindsay, 2007; Talbert & McLaughlin, 1994). Carter and Francis (2001) argue that early support in pedagogy is "critical to the quality of their immediate professional experiences as well as to their longer-term professional learning" (p.279).

Researchers (Kagan, 1992; Katz, 1977; Lang, 1999; McCormack & Thomas, 2003) claim that the survival stage experienced by beginning teachers can last throughout the whole of the first year of teaching and beyond with teachers often needing to make compromises between their own school culture and expectations of their supervisors, with their University training (Khamis, 2000; McCormack & Thomas, 2003). Beginning teachers can have new ideas, which are not accepted or encouraged, and the school context that they find themselves within can negatively influence the quality of their instruction (Amosa & Cooper, 2006). Previous research has demonstrated that the quality of teaching demonstrated by early career teachers does not differ significantly from that of more experienced teachers (Gore, Williams, & Ladwig, 2006b) but without continued support for their pedagogy their initial pre-service training can be forgotten. Providing good professional development in these early years will encourage teachers to remain in the profession. But fostering professional learning that focuses on their pedagogy will also have a positive impact on their curriculum and pedagogy (Muijs & Lindsay, 2007).

Developing a cooperative learning pedagogy

The model of pedagogy used in the research reported in this paper was based on Ladwig and Gore's research into Quality Teaching (NSW Department of Education and Training, 2003a),which has produced a sound, defensible model for good pedagogy widely used in NSW, Australia in all schooling systems. The overarching dimension is to promote high levels of intellectual quality, to focus teachers on establishing a high quality learning environment as well as generating "significance by connecting students to the intellectual demands of their work" (NSW Department of Education and Training, 2003b, p.10). It provides teachers with a practical and useful framework for professional dialogue, for planning and redesigning lessons and for reflecting on the quality of their teaching in the classroom.

This pedagogical framework was linked to the pedagogical strategy of cooperative learning in this study. To date there has been no research that focuses on early career teachers and their use of cooperative learning (CL) although there has been a great deal

of research that advocates the use of CL in schools to improve both social and academic outcomes. A decision therefore was made in the current study to focus the professional learning on CL as a pedagogical strategy that could help to sustain teachers' enthusiasm early in their careers, as well as develop and improve their students' academic and social outcomes.

CL is a structured style of learning which teaches children how to work collaboratively. It involves heterogeneous groups participating face to face in clearly structured tasks with a common goal. Careful allocation of roles or sub-tasks ensures positive interdependence and individual accountability (Gillies & Boyle, 2006; Johnson & Johnson, 1994; Slavin, 1987). Student reflection, based on both task outcomes and social skills is crucial to further develop academic and social outcomes. "The trusting relationships that are built through cooperative strategies in…classrooms will develop collaborative skills that are crucial for the development of both the children's emotional, as well as academic development" (Ferguson-Patrick, 2008, p.17).

Extensive research evidence suggests CL is an effective strategy for maximising learning outcomes of all students (Gillies, 2003; Johnson & Johnson, 1994; Johnson, Johnson, & Smith, 2000; Slavin, 1995, 1996) as well as social skills development (Johnson, Johnson, & Holubec, 1990; Slavin, 1995, 1996; Stevens & Slavin, 1995). CL can help to promote socialisation and learning among students (Cohen, 1994), promote reading and writing achievements in middle school students (Stevens, 2003) as well as develop better classroom results for special needs students (Jenkins, Antil, Wayne, & Vadasy, 2003). Additionally, CL has been used to prevent social problems (Johnson, Johnson, & Stanne, 2000), alleviate bullying (Cowie & Berdondini, 2001) and help students manage conflict (Stevahn, Johnson, Johnson, Green, & Laginski, 1997).

Pedagogically, CL is significant for this project because it encourages teachers to ask more cognitive and meta-cognitive questions so that students are required to "provide reasons for their answers, connect their ideas to previous learning, and justify their conclusions" (Gillies, 2007, p.25). Consequently, students are more likely to be engaged in higher order thinking (King, Stafferi, & Adelgais, 1998) and pose questions to challenge others' perspectives (Palinscar & Herrenkohl, 2002). Although all students can benefit from CL, there are increased benefits for higher ability students who, by providing high quality explanations, develop their learning with cognitive reorganisation whilst giving elaborated responses and providing explanations when cooperating in learning activities (Terwel, Gillies, Van den Eden, & Hoek, 2001).Low achieving students need opportunities too for higher order thinking activities in order to help them use their minds well (Newmann & Wehlage, 1993). A classroom environment built by teachers who have developed their pedagogical practices to encourage cooperative work habits develops students' motivation to participate more in class activities (Morcom & Cumming-Potvin, 2010; Turner & Patrick, 2004). It requires considerable teacher skill to set up such learning and therefore CL was selected as the pedagogy that could extend the early career teachers' repertoire with positive effects. Despite the fact that cooperative learning as a strong research base over decades to support its use in schools it is under-utilised (Baines, Blatchford, &

Kutnick, 2003) with real interaction in group work also relatively uncommon (Galton, Hargreaves, Comber, Wall, & Pell, 1999). This can be explained by teachers' reluctance to experiment with different pedagogies, especially those using group work, in an environment increasingly focused on individualized testing. In the UK the continued emphasis on centralized prescription and National testing has discouraged teachers to use and innovate with different pedagogical approaches (Jolliffe, 2010) and I suggest this will be more of the case in Australia henceforth. In Australia our recent National curriculum draft suggests we are progressing along the same lines as the UK with a curriculum with "'strong classification' in Bernstein's (1973) terms: highly differentiated into traditional subjects, rather than integrated" (Jolliffe, 2010). Less integrated learning and more individualized work rather than group work in classrooms does not suggest cooperative learning will become more widely used in the future. This study has added to the 'authentic' setting research that has been lacking in cooperative learning research. By providing teachers with professional development in cooperative learning and adapt its use to their particular context the teachers in this study will be more likely to use this pedagogical strategy due to wealth of research into its benefits.

Action research

This study was embedded within an action research approach for this very reason. By using action research teachers in the study were able to transfer their knowledge about cooperative learning and adapt its use to their specific context. Action research became an integral component of the professional learning sessions in the study- the importance of this approach will be dealt with briefly in this paper. Action research has been used as a method of educational improvement for at least three decades and provides 'opportunities to learn that (involve) collaboration, dialogue, reflection, inquiry and leadership' (Lambert, 1998, p.xi). It is carried out with the main aim to develop insights and understandings to improve teaching practice (Elliott, 1991) allowing reflection on practice in context. It is also important to support teachers in a professional learning community, in collegial professional learning opportunities, as such a collaborative culture (Hargreaves, 2003) "is likely to sustain their commitment, energy and intention to remain in the profession" (Smethern, 2007, p.477).The teachers in the study became a part of a professional learning community during the development sessions, talking about their classrooms and the implementation of cooperative lessons within these. Involvement in action research in classrooms can impact on professional practice and enable informed choices about teaching and learning improvements (Ferguson-Patrick, 2007, 2009). Each teacher's action research project guided the professional learning sessions. The self-reflection process, which the teacher used when keeping the diary, involved cycles of planning, observation, action and reflection, to ensure that teachers selected a focus for their own classrooms in relation to CL.

Methodology

This particular paper explores two teachers' understandings and practices in CL both before and after involvement in professional development in CL. The two teachers, who self selected to become a part of the study, both taught stage three students (aged

between 10 and 13). Both teachers taught at large Independent K-12 schools in NSW, Australia. One teacher in her first year, Josephine, was still in her 'induction phase' (Feiman-Nemser, 2001a). Feiman-Nemser has argued that only some early career teachers are ready for continuing professional development which "extend(s) and refine(s) their repertoire in curriculum, instruction and assessment" (Feiman-Nemser, 2001a, p.1050). Others, still in their induction phase, which for some can last for up to three years, are more concerned with learning the context; designing responsive programs; creating classroom communities; enacting a beginning repertoire, and developing a professional identity. This first teacher, Josephine can be defined as being in this induction phase. The second teacher, Jill in her third year of teaching, indicated readiness, in initial conversations, to extend and refine her repertoire in curriculum. The phase these teachers are within, and whether they are ready to "broaden their early repertoire of teaching skills by not abandoning these completely for safer, less complex activities or actions" (McCormack, et al., 2006, p.105) will have implications for how much of an impact the professional development on CL will have.

Table one summarises the study's method and time frame of the professional development in CL.

Table 1: Summary of method and time frame

	Phase 1 May	Phase 2 Jun-Jul	Phase 3 Jul-Aug	Phase 4 Sep-Oct	Phase 5 Oct-Nov	Phase 6 Nov-Dec	Phase 7 Dec
First semi-structured interview	▨						
Initial Classroom observations – QT and CL		▨					
Professional learning session one		▨					
Action research plan developed		▨					
Teacher implementation of CL - at least one lesson per week		▨	▨				
Classroom observations - CL		▨	▨				
Professional learning session Two				▨			
Action research plan developed				▨			
Teacher implementation of CL - at least one lesson per week				▨			
Professional learning session Three					▨		
Action research plan developed					▨	▨	
Final Classroom observations – QT and CL					▨	▨	
Final semi-structured interview							▨

The research study included semi structured interviews, professional learning sessions which included an emphasis on both CL and action research, classroom observations which included video, and audio recording of student conversations. A seven month commitment was established with each of the six teachers that included commitment to designing and teaching at least one CL lesson a week, keeping an action research plan and writing a reflective diary. My own role was to become an "educative mentor" during this research journey. Situated in practice, the intention was to help develop the dispositions of these teachers to become life-long action researchers that would develop powerful teaching and continuous improvement in their teaching careers (Feiman-Nemser, 2001b).

For the purpose of this paper the professional learning that took place over the three sessions and six month period of time are to be outlined briefly. The professional learning sessions in CL and action research included the planning of carefully structured lessons, ensuring students coordinated their efforts in order to complete a group task, a consideration of which lessons were most appropriate for CL, exploring CL strategies, as well as ensuring the following essential elements(Johnson, et al., 1990) of CL were used; face to face interaction; positive interdependence; individual accountability; appropriate use of small group skills, and reflective thinking about group functioning. The first professional learning session focussed on defining cooperative learning, quality teaching, action research and reflection, as well as thinking about planning of cooperative lessons within units of work being implemented. The second and third sessions focussed more on the action research process using both my own and participant reflections, as well as the classroom observations, to guide these final two professional learning sessions. They also incorporated cooperative lesson planning, different cooperative strategies and some of the issues that can impede the successful implementation of cooperative learning.

This paper explores the classroom observations made over a seven month period using the Cooperative Learning coding scale, devised by Ferguson-Patrick that has been based on other recent research examining cooperative learning in Australia (Gillies & Boyle, 2006) as well as most directly based on Johnson and Johnson's (1994) model of Cooperative Learning. The scale uses a 1 (observed not at all) to 4 (observed almost always) rating with detailed comments made by the researcher and another research assistant. After scoring lesson observations and discussing the coding scores to develop inter-rater reliability (investigator triangulation, (Denzin, 1978 as cited in Mathison, 1988) an overall score was assigned for each of the CL elements.

These elements were as follows.

a) *Strategies selected*: Uses a range of cooperative learning strategies designed to encourage student discussion / cooperation
b) *Language of cooperation*: Uses language that reflects the facts that cooperative learning strategies are being employed (i.e. talks about roles, responsibilities for tasks, compromising, decision making)

    c) *Language of encouragement*: Encourages children to work together and use each other as a resource (i.e. encourages listening, taking turns, seeking clarification, building on ideas)

    d) *Reinforces student reflection*: Utilises proformas that encourages monitoring of cooperative skills and reflection (e.g. use of encouragement, reflection sheets for group processes and tasks)

    e) *Establishes interdependence in the students' groups*: 1. mutual goals in order to promote goal interdependence; 2. division of the task in order to achieve task interdependence; 3. division of resources to achieve resource interdependence; 4. assigning different roles for role interdependence

These classroom observations have then been graphed to demonstrate each teacher's scores in Cooperative Learning (according to the Cooperative Learning scale devised by Ferguson-Patrick) across the seven months. Each teacher was observed on three occasions, pre study intervention (initial) in June and early July (end of school term two), during July-September (Middle) and between October and December (Final) (school term four). In a collection period multiple observations were made. The mean average of likert scores from multiple observations were from each data collection period. See Table One for more details about methodology.

This paper also explores comments from the semi-structured interviews conducted at the end of the seventh month study. The questions focus on teachers' perceptions of cooperative learning and teacher's practices in cooperative learning. Emerging themes that were found from the interviews, were synthesised with thematic analysis following the principles of coding associated with grounded theory (Strauss & Corbin, 1990) in order to describe the main issues identified by participants (i.e. descriptive, or open coding), to identify the links between issues raised by participants (i.e. topic or axial coding), and to propose higher order conceptualisation of the main themes which have emerged (i.e. analytic or selective coding). The comments were analysed in terms of the teachers' understandings of cooperative learning and Quality Teaching with this paper focussing on the cooperative learning scale in particular.

Results

Understandings and practice in cooperative learning

The following graphs focus on one first year teacher and one third year teacher and the differences in understandings demonstrated by practice (from classroom observations) and in comments made in their interviews are quite considerable.

There were three periods of classroom observation (June/July; August/ September/October and November /December). The most marked improvements for this first year teacher occurred at a mid point during the intervention period (after two professional learning sessions in CL). This may be ascribed to the time of year as comments from Josephine indicated a winding-down in terms of teaching at the stage of the year the final classroom observations occurred. Mid study classroom observations support a growth in understanding about CL, whereas by the end of the

study, when Josephine acknowledged all her assessments were over, it emerged she was unplanned and unready for her observed lesson. Her comments to the students also indicated that assessments were finished giving the impression that learning in the classroom at that particular time was not important.
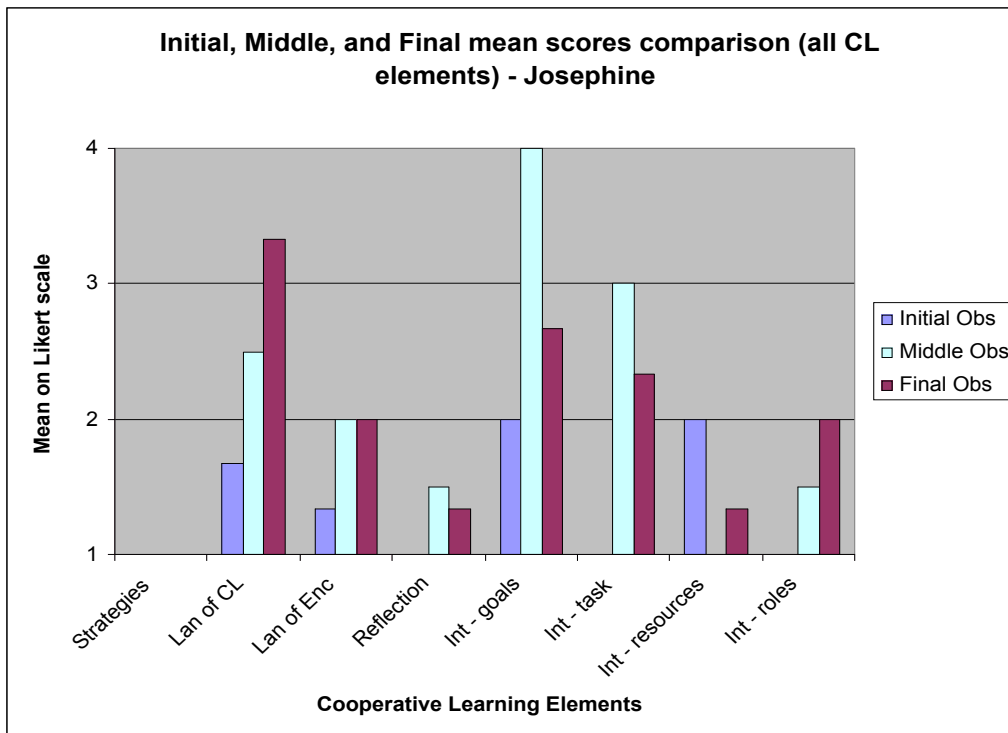
Note: Lan of CL = Language of cooperative learning
Lan of Enc = Language of encouragement
Int = Interdependence

Figure 1: First year teacher - Josephine

The challenge of creating a classroom community within the school context

Josephine in her first year commented in her final interview that she "enjoyed the socialisation of school, growing with the students" and how "we all built the positive relationships" and how she "wanted to look after them beyond my point but as a teacher you can't". In this induction phase of teaching she was concerned with creating her classroom community, enacting a beginning repertoire and developing a professional identity. She had come across frustrations with trying to fit into her school context / culture. She mentioned grappling with "the amount of textbooks at the school, the amount of assessment tasks" as well as with the difficulties of being a 'core teacher' who had to focus on English, Maths and HSIE and how she "struggled with not being able to do the whole big picture". She also mentioned "Assessments are rarely group based at this school".

The predominant pedagogical practices of teachers at this school were traditional and the use of cooperative learning was not common. The burden of "an imposed curriculum …and lack of professional freedom" (Schamer & Jackson, 1996) can make new teachers like Josephine feel particularly unappreciated and inadequate. At the same time Josephine does not have other teachers modelling the pedagogy of cooperative learning and she does not have other teachers to mentor her in this practice at the school she is working in. It is important to retain Josephine in the teaching profession, not only her physical continuation in the role but also focus on her "maintenance and commitment" as these are key indicators of quality (Gu & Day, 2007). The compromise between her own pedagogical training and the culture of the school (Khamis, 2000) adds to this frustration and for Josephine to be able to move from the 'threshold' and 'grow into the profession' allowing her to explore the skills, methods and competencies in teaching (Vonk, 1989) she needs support before she reaches the 'failure' or 'getting by' phase (Lacey, 1977).

Understandings of CL and practice in CL

Most significant improvements in practice in CL were found in terms of attempts to establish interdependence which is a key element of CL. In particular she demonstrated serious attempts to establish mutual goals, 'goal interdependence', and division of the task to ensure 'task interdependence'. Ongoing student reminders from the teacher were observed throughout the lesson. Other marked improvements occurred in the use of language by the teacher which reflected the employment of CL strategies. For example the teacher is observed talking about roles, responsibilities for tasks, compromising or decision making. This is to be expected as Josephine becomes more aware of what is included in a CL lesson.

Josephine's use of CL in her classroom increased from once a month at the beginning of the study to a few times a week over the course of the study. At the beginning she was also asked to attempt to define her understanding of CL. Josephine stated:

> Cooperative learning is, no matter what situation you're found in, and no matter what people, you can actually all work together to achieve the task.

This definition does not really demonstrate that she understands how important her role is when designing CL tasks in her classroom. She earlier has stated when asked about what the essential elements of CL are:

> well you need to teach the students how to work cooperatively, how to take turns and respect other people and you need to teach them roles and you need to really know your students…and that I'd need to move around the room and help dig deeper and help the students with their task- so I'd need to be fluid

By the end of the study she clearly stated,

> It is a small group of carefully chosen students that can work together to produce or achieve the lesson outcome and maybe more, just engagement, higher order thinking, that's it.

When prompted she went further to explain that by carefully selected she meant,

> knowing your students, knowing who they're friends with, knowing their abilities, knowing their strengths and weaknesses, knowing them as well as you can.

Josephine was trying to articulate that it was important in CL that each group was a heterogeneous group so that each child's strengths could be nurtured in the group as well the group being able to support any weaker areas. She also demonstrated that when a task is open-ended, students are more likely to extend themselves- they can "achieve the lesson outcome and maybe more." She verified that when using CL students are more likely to be engaged and be involved in tasks that require higher order thinking. She also acknowledged that she had learnt to make sure each individual had something to contribute - she confirmed an understanding of individual accountability, and that "if you don't plan for that you're stuffed before you walk in".

She was beginning to see the links between CL and good teaching. She understood that by using CL "some students scaffold other students' learning" and it encouraged "risk taking" and if the school year went for another few months maybe we would have seen further developments". She acknowledged the benefits of using CL as her students,

> interact and discuss things and someone will have another comment, someone will question something and they just go deeper and deeper…and that we'd talk about our group work in values education. So you sort of linked it all together.

She acknowledged that the professional learning had made an impact on her and her students,

> well after one of your PDs, you told us what they need to know to work in groups (referring to social skills) and once they learnt what a good group member looks like and all that sort of thing it worked better.

She continued to reflect on the professional learning sessions and the use of reflection, indicating at the beginning of the study she didn't know about,

> the different ways you can design tasks around group work…my knowledge I realised was very small…and that it was good having other people to talk to before the sessions.

CL making a difference

For such a teacher in this induction phase, she is concerned with learning the context and creating her classroom community whilst beginning to develop a professional identity. A focus on pedagogy is not foremost in her mind, although as Gold (1996) states, "Few experiences in life have such a tremendous impact on the personal and professional life of a teacher as does the first year of teaching" (Gold, 1996, p.548) which indicates a professional learning program focussed on pedagogy and action research is important and will impact on these teachers for the rest of their career. Josephine's comments, about her use of reflection in the study, really indicate its impact on her as a teacher, and show the professional learning, using action research, is starting to make a difference to her teaching which is reflected in this comment,

> when you have to put in writing your reflections, you're sort of harder on yourself and make yourself lift your game.
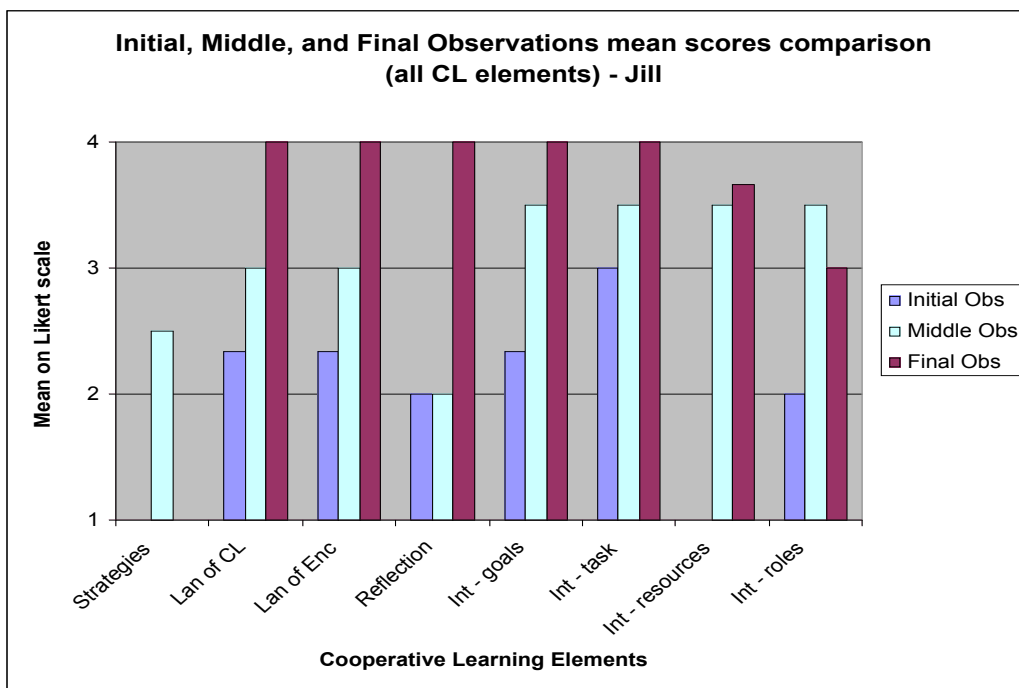
Initial, Middle, and Final Observations mean scores comparison (all CL elements) - Jill

Note: Lan of CL = Language of cooperative learning
Lan of Enc = Language of encouragement
Int = Interdependence

Figure 2: Third year teacher- Jill

Use of CL strategies

Jill demonstrates noticeable improvements in all areas of the CL observation schedule. She initially stated that she used CL one teaching session per day and finally stated it was being used for five sessions a week. Her usage did not greatly change throughout the study- she was using it frequently at the beginning and remained doing so throughout. Her school context was such that this type of pedagogical practice was encouraged at the school- her students, as well as students throughout the school, were encouraged to collaborate. The students in this context were more prepared for this approach and this would in turn influence the outcomes of the study. The change in practice however was in the way Jill ensured that she concentrated on cooperative learning to ensure her students were engaged in collaboration that involved all students being individually accountable with positive interdependence. Her improvement from initial to final observations is a great deal higher in this area of in establishing interdependence both through ensuring a common goal, as well as through sub-task distribution and in the giving of roles (see table three).The division of resources (to ensure individual accountability and positive interdependence), was markedly improved showing no initial use of this key element. Jill's use of CL strategies also improved however it is noted than in a class where CL is already quite well established the use of these strategies was not really needed to demonstrate cooperation was occurring. Many of these strategies are excellent when starting out with CL as they ensure students take turns (e.g. talking tokens) and are individually accountable (e.g. the placemat strategy-see Jolliffe for description of many cooperative learning strategies) (Jolliffe, 2007). In Jill's classroom the students were mostly doing these things already, in a class established on trust and respect and where high expectations form the teacher do not allow students to freeload, these strategies were not required as much. She also improved in the area of reflection as she understood that when students reflect on both task outcomes and social skill / group processing this increases both academic and social outcomes.

Reflective practice

These notable improvements in all areas suggest that Jill, in her third year of teaching, was ready to concentrate on her pedagogical skills and CL and that the professional learning using action research was supporting these improvements. She acknowledged that already that year,

> I had to re-change the whole structure of group work as Larissa was very
> bored, that was a lesson I learnt… to…. bring in different ways of presenting,
> bring in all other things like drama plays and video footage.

She was reflecting on her teaching, her organisation, on students learning outcomes at the beginning of the project. She also outlined, in the initial interview, how she had a clear set of classroom guidelines; how she used a lot of brainstorming; open discussion; concept mapping; PMI's (Positive, minus, interesting brainstorms), and how students had learnt to take ownership for their work, as well as be held accountable for the work they have failed to produce in groups. This demonstrates a

teacher well on the way to understanding about the key elements of CL, such as individual accountability and positive interdependence. Jill's initial definition also shows sophistication in understanding about CL:

> you need to be constantly monitoring those children, and giving them that sense of achievement for them to be able to give you what you want them to give you. The students are important and the environment is important, the classroom is important, you know, the task, the questioning, the information. There isn't one part that's less important for the chain, if you were to connect it like a chain, every link, everyone is an important link, if there was a crack in one of the links the whole thing, I believe, would fall apart…

She demonstrates an understanding of her role in CL in designing the task, supporting the students with appropriate questioning and locating information required for the task. She also demonstrates the importance of interdependence - the chain with links - all students connected and needing to work as a team to achieve that common goal.

She is a teacher who is ready to learn more deeply about her job and is challenging her thinking and enabling her to flourish (Wilson & Demetriou, 2007). She has grappled with the early challenges of beginning teaching- parents, classroom management, day to day organisation, assessment (McCormack, et al., 2006) and school culture/context and is now ready to reflect more readily and embark on a journey of professional knowledge "knowledge which is embedded in 'praxis': reflective knowledge in and through action" (Ponte, 2002, p.341).

Her final definition demonstrates an even more holistic viewpoint of CL as she sees it,

> an essential strategy to give the best chances of learning and developing for our children…it's an essential tool and I'm so grateful that I learnt about it and I love using it.

She is beginning to relate CL as a strategy to increase both student learning outcomes and student social development demonstrating equal importance of the two. Further comments indicate her growth as a teacher and a growth in her understandings of practice in CL,

> I wish I'd videotaped my first term of CL to what I do now as I've grown a lot...I realised the students were individually doing their set task and they weren't gluing together.

This statement confirms that although she was using CL prior to the study, it was not very successful CL. Some of the terms she used when describing why CL is important to her included,

> respect is a key issue in CL, learning to respect each other as another human being; with a CL group everybody's responsible for the content; modelling is important; the whole team gets the gold medal at the end

She demonstrated her deep understanding of CL by the end of the study. The success for her also came when she was promoted at the end of the year,

> I don't believe I would have got that position had I not done this study as well because I think I've included a lot of what I've learnt in the study in my application and had evidence to back that up. I'm going to be able to have the opportunity to team teach and have professional development days there where I'll hopefully be able to encourage others.

She sees the value in the professional learning program she has been involved in for her continued professional growth, especially as a teacher leader, as she is at a stage where she is ready to extend and refine her repertoire (Feiman-Nemser, 2001).

> It has stimulated me, I was having a sense I was thirsty for more knowledge and I have responded well and I have learnt so much… you get bogged down in the day to day but the time to seek out more professional development wasn't there, where this has really kept me on task, and it's, yeah my heart is pounding with passion for this again and my brains going nineteen to the dozen!

Conclusion

Despite this study's limitations, which are linked to the small number of participants in a case study approach, these findings have implications for sustaining teachers' enthusiasm early in their careers. Difference was found in the impact of professional learning between the two teachers. Jill, in her third year of teaching, made greater gains in understanding and practice, and demonstrated she was ready to flourish (Wilson & Demetriou, 2007) as she had come to terms with the demands of initial teaching. She was more able to cope with the demands of initial teaching (Martinez, 2003), the context, the parents, and classroom management (McCormack, et al., 2006). Jill, the teacher at the very beginning of her teaching career, improved in knowledge and practice in CL but struggled with these other factors related to beginning teaching. She particular found the disparity between her pedagogical pre-service training and her school context a challenge supporting the research that shows school context can negatively influence the quality of instruction (Amosa & Cooper, 2006). This dichotomy between school context and wish to innovate with different pedagogical processes could account for the difference between the results of the two teachers in these cases. However, it is important to note that both teachers demonstrate enthusiasm for pedagogy at this stage of their teaching career and it is this that needs to be sustained in order to retain these teachers in the profession.

Cooperative learning is a pedagogical strategy that can help to sustain teachers' enthusiasm early in their careers. These teachers have been able to focus on a strategy that research has shown improves students' social and academic outcomes. It has allowed them to focus their attention on developing their classroom culture in a way that supports collaboration between students in a collegial environment (Hargreaves,

2003) with other early career teachers that supports such innovation in practice. The study, with its focus on reflection and action research, has also developed their enthusiasm for ongoing teacher research which hopefully will be sustained throughout their career. It is envisaged that the teachers will be able to continue to develop insights and understandings to improve teaching practice (Elliott, 1991) allowing reflection on practice in context for the rest of their teaching career. A focus on pedagogy is critically important to enhance beginning teachers' professional accomplishment and should be ongoing throughout the early years of teaching in order to retain quality teachers in the profession. It is important that policy makers consider the need for new teachers in the profession to receive continuing opportunities to examine and improve their own skills and knowledge of the profession under the guidance of more knowledgeable and experienced practitioners.

Acknowledgment

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