Contextually Responsive Facilitation

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Contextually responsive facilitation enables a facilitator to take account of each teacher's context of practice through making explicit the mathematical concepts and strategies underlying materials or activities. This paper explores co-teaching and co-generative dialogue as a means of developing contextually responsive facilitation and contends that such an approach engages teachers in contextually based participatory learning of new practices. Through the role of co-teacher, a facilitator is able to guide teachers' interpretation of the core principles of the project.

Orientations to Professional Development

Any large-scale intervention is challenged by shifting practice across a wide range of teaching contexts. An example of a large-scale initiative is the Numeracy Development Project (NDP), which is in its sixth year of implementation. It has focused on improving the quality of teaching and learning in mathematics in English- and Māori-medium settings in Aotearoa New Zealand.

Debates about what counts as school change have typically focused on quantitative measures and omit a consideration of changes to teaching and learning that impact on student achievement (Coburn, 2003). Some commentators (Elmore, 1996; McLaughlin & Mitra, 2001) emphasise the importance of teachers understanding the core ideas of an initiative for its longer-term sustainability. Elmore, in particular, is critical that much of what counts as change does not address what happens in classrooms and suggests "the primary problem of scale is understanding the conditions under which people working in schools seek new knowledge and actively use it to change the fundamental processes of schooling" (p. 4).

A major issue in shifting practice is fostering teachers' interpretations of core principles of a project in ways that ensure that both the integrity of the principles and the contextual factors impacting on classroom implementation are privileged. Historically, large-scale interventions in mathematics in New Zealand have failed to have an impact longer-term because the balance between core principles and local contexts of implementation has been lost through adherence to practices without adoption of their core underlying principles (Higgins, 2001; Young-Loveridge, 1997). Specifically, we need to understand how facilitators best enable an evolutionary dynamic, arising from a contextually informed understanding of the principles, to develop in a school so that it leads to new practices being sustained.

The degree of alignment between the model of instruction being promoted for classrooms through a professional development programme and the model of instruction of the professional development itself is critical (Tharp & Gallimore, 1988). The orientation of a facilitator's pedagogy to aspects of practice in the in-class setting can vary from one of design adherence to one of contextual responsiveness (Higgins, 2005). In a design adherence orientation, the facilitator's emphasis is on classroom activity that follows the guidelines of the teacher manual. In a

contextually responsive orientation, by contrast, a facilitator emphasises student learning through attention to structural elements of a programme.

Opportunities for teacher learning in each orientation can be examined from the perspective of a transformation of participation theory (Rogoff, Matusov, & White, 1996). From this perspective, a teacher's participation can be said to be shaped by their underlying orientation to professional development. In a design adherence orientation, the participation of a teacher is evaluated by the degree of adherence of the teacher's actions to the design. For instance, when using materials or activities, the teacher and facilitator would focus on the surface features of the activities and judgments about effectiveness would centre on the degree to which the materials actively engage students. By contrast, in a contextually responsive orientation, a facilitator would evaluate a teacher's participation by the degree to which the use of the materials met the mathematical needs of the students as determined by the Number Framework. Similarly, when modelling new practice, a facilitator oriented towards design adherence would emphasise and encourage adherence to the procedural aspects of activities as scripted in the teacher handbook and would discourage variations to these procedures. A facilitator modelling new practice from a contextually responsive orientation would highlight possible variations and encourage discussion of multiple perspectives in working with different groups of students. The Teaching Model and the Number Framework would underpin such discussion.

Contextually, responsive facilitation enables a facilitator to take account of each teacher's context of practice through making the concepts and strategies underlying materials or activities explicit. It does this by drawing on the elements of the Number Framework, the associated diagnostic interview, and the Teaching Model, all of which are structural features or key components of the NDP. Through introducing a framework of ideas, it is suggested, "teachers are able to internalise the changes to their practice and sustain the programme in terms of the context within which they work" (Higgins, 2005, p. 143).

Theoretical Framework

In teacher-centred professional development programmes, it is important to manage the introduction of classroom activities with discussion of the underlying core principles. This study draws on sociocultural perspectives, such as those articulated by Wertsch, del Rio, and Alvarez (1995), who suggest that a facilitator's role is to mediate core principles of a project and their enactment in a classroom setting. Newman, Griffin, and Cole's (1989) work is useful when thinking about the use of examples of classroom practice in feedback sessions between facilitators and teachers. In these sessions, material generated from co-teaching can be appropriated by the facilitator or teacher as a basis for interactions about the core principles of the NDP.

Newman et al.'s work uses Sewell's (1999) notion of culture and follows Tobin's (2005) work, and thus it views teaching as cultural enactment and learning new practices as cultural production, as in the reproduction and transformation of existing forms of culture. Teacher agency is important in this process of learning new practices. Agency can be thought of as the degree to which teachers can interpret and transform core principles of practice as they enact them in a classroom setting.

One way of explaining how structure can be seen as dynamic is by using Sewell's (1992) theory of structure, which suggests that core principles form a dialectic relationship with related resources. Sewell argues that structure is composed simultaneously of virtual schemas and of actual resources. When this is applied to the structural elements or core principles of the NDP,

the schemas fall into two groups: one relates to pedagogy, and the second relates to professional learning (Higgins & Parsons, 2005).

Of particular relevance to this paper are schemas relating to professional learning that are classroom-based professional learning and schemas relating to school-based professional community (Higgins & Parsons, 2005). The associated resources include the practices of teachers and facilitators as well as the associated dialogue about practice. These practices are enactments of the schemas or core principles and serve to validate them. As Sewell (1992) explains, "If schemas are to be sustained or reproduced over time – and without sustained reproduction, they can hardly be counted as structural – they must be validated by the accumulation of resources that their enactment engenders" (p. 47).

The Professional Development Components of the NDP

The professional development components of the NDP include workshops with clusters of schools as well as in-depth work in individual teachers' classrooms. The pedagogy used by facilitators when working with teachers one on one in their classrooms is important in affording teacher agency (see the explanation in the section above) in their adoption of new practices. The way in which a facilitator sets up the in-class professional development setting shapes the opportunities for teachers to participate in, and learn from, the professional development activities.

This research investigated co-teaching and co-generative dialogue (Tobin & Roth, 2005) as a means of developing contextually responsive facilitation that provides teacher agency. In particular, the research looked at how facilitators work with teachers in their own classrooms in ways that incorporate teachers' context of practice. An important factor in this process was the roles taken by facilitators as co-teachers working alongside the classroom teacher. The impact of this approach enabled facilitators to work with a teacher on embedding core principles of practice in a specific teaching context. Facilitators were able to help teachers to contextualise core principles of the NDP through a strategy of co-teaching and co-generative dialogue.

This paper contends that co-teaching and co-generative dialogue engages teachers in contextually based participatory learning of new practices.

A Contextually Based Participatory Model

Whole-class and strategy group modelling as elements of the NDP professional development can be interpreted as a process of mimesis, where learning occurs through the mimicking or imitating of another. Furthermore, this suggests a level of compliance and the forsaking of current pedagogical knowledge and ability. It could be tacitly suggested that within this dyad, the facilitator takes the "expert" role and the teacher the "apprentice" role.

The demonstration/observation delivery of facilitation can assume a prerequisite for readiness on behalf of the teacher and can limit the extent to which they can access and participate in the learning. By placing the teacher in the spectator role, the person with the most contextual knowledge about how to best teach *these* children in *this* class or group with *these* tools at *this* time may be subjugated to a position where they have few opportunities to participate in the lesson. This implies a design adherence model that may limit opportunities for variations from the lesson plan (Higgins, 2005).

Added to this is the awareness that knowledge acquired out of context is not easily generalised or transferred to unfamiliar situations. While the facilitator and teacher are in some sense co-

ordinated, they are still, as Rogoff, Matusov, and White (1996) suggest, compartmentalised in a way that differs from collaboration, in which people's ideas and interests meet (p. 394).

Roth and Tobin (2001) describe how the presence of an evaluator in the observation model changes the situation, and in such staged lessons there is a fundamental shift from the goal of teaching for student learning to demonstrations of effective teaching. Sergiovanni (2004) sees this as teachers show-boating the required behaviours but when no-one is looking, reverting back to what they know and what makes sense to them. Lave and Wenger (1991) suggest that learning does not arise by replicating the performances of others or by acquiring knowledge transmitted in instruction; rather that learning occurs through participation in a community of learners (p. 100).

Lave and Wenger (1991) believe that a condition for the effectiveness of learning is engaging in learning rather than being its object (p. 93). By limiting the actions and involvement of teachers, the construction and re-construction of their conscious and unconscious schemas and practices may be inhibited. Remembered events may not invoke the same accuracy of recall or reliability as events that have been participated in, and it is difficult to contextually build understandings from the sideline.

A more responsive paradigm of facilitator modelling and observing would be to make an impact on practice by participating in it – learning to teach through teaching and through talking about teaching. Roth and Tobin (2002) describe this as co-teaching and co-generative dialogue. Research by Roth and Tobin has shown that co-teaching is a powerful context that provides new opportunities for enhancing learning and for learning to teach. Learning becomes increasingly salient and is grounded within the teacher's own experiences. The teacher polishes their own practice within the active context of others. Lave and Wenger (1991) propose that within the context of a changing shared experience, learning becomes an integral and inseparable aspect of generative social practice and a part of the "lived in" world. Learning involves social participation in a community of practice and is in the relationships between the people.

Co-teaching is a seamless collaboration of relearning to teach together in anticipatory ways in which all teachers are tuned in and focused on collective goals and learning (Roth & Tobin, 2002). Their argument is that individual capacity increases through collective activity and action. A productive learning environment is created through actively teaching and actively learning to teach in ways that afford the learning of their students. It is "at the elbow" support for teachers in their classrooms as they apply new ideas and skills. Teachers, researchers, and, where appropriate, students become co-creators of their learning and environments; they become agents of change and are empowered to act.

Co-generative dialogue is collective remembering and theorising to improve the quality of teaching through co-participation in conversations over shared experiences. According to Roth and Tobin (2005), co-generative dialogue articulates the different kinds of individual and collective experiences and explains them in and through collective interpretation, from which new possibilities for individual and collective actions emerge.

Local theory is constructed through forums of shared respect, rapport, and responsibility. In these forums, attention can be drawn to salient aspects of teaching in which changes can be contemplated (Roth & Tobin, 2002). Through co-generative dialogue, the gap can begin to be closed between educational theory and teaching practice and between the theory of best practice and the practice of best practice. Roth et al. (2002) propose that "regular co-generative dialogues

can be forums for building shared responsibility, respect for one another, and the rapport necessary to enact curricula that affords learning" (p. 279).

Lave and Wenger (1991) believe that learning is a situated activity and that the way to understand the learning is through the analytical perspective of legitimate peripheral participation. This is a process by which newcomers become part of a community of practice through speaking about relations, activities, identities, artefacts, and communities of knowledge and practice. Participation is based on situated negotiation and renegotiation of meaning in the world. Understanding and experience are in constant interaction and are mutually constitutive. Learning implies becoming a different person with respect to the possibilities enabled by the systems of relations (activities, tasks, functions, and understandings). The key to legitimate peripheral participation is having access to the community of practice and the information, resources, and opportunities that that membership entails. Eick and Ware (2005) found that situated learning theory, when applied to teacher communities of practice, addressed the inadequacies of a traditional approach where learning to teach occurred mostly out of the context and culture of the classroom.

Two case notes follow: one that examines co-teaching and co-generative dialogue within whole-class knowledge lessons; and the other that examines co-teaching and co-generative dialogue within strategy group lessons. The data was gathered through observation of classroom sequences and co-generative dialogue sessions (a total of 15 hours) and 12 formal face-to-face interviews with both teachers and students that were complemented by informal discussions with teachers, students, principals, and facilitators.

The Best Way to Learn How to Teach Is to Teach

Case Note One: School A

During 2005, the praxis of co-teaching and co-generative dialogue was undertaken with four teachers (two new to the NDP), two teacher aides, and 100 year 0–3 students at a co-educational integrated full primary school with a roll of 220. This school was beginning their fourth year of NDP professional development. The aim was to build pedagogical content knowledge through contextually responsive experiences and dialogues.

The teachers created a mind-map of teaching and learning intentions underpinned by the NDP Number Framework (Ministry of Education, 2005). At weekly meetings, the teachers planned the co-teaching sessions by determining the learning intentions *(we are learning to)* and the success criteria *(we will know we have learned this because).* Student experts were identified and included as co-teachers. The teachers selected the student experts on the basis of the mathematical thinking that they had previously shared in a teacher-led group. The students had no special preparation for their role. Teachers collectively decided on teaching and learning for small groups and individuals.

Each week, one teacher had the responsibility for being the lead co-teacher in a joint session of the four teachers, two teacher aides, and 100 students. This entailed introducing the co-teaching session and organising the tools and resources (equipment/whiteboards and pens).

To support this ongoing professional development, the NDP facilitator participated as a member of this community in the co-teaching and co-generative dialogue sessions, each of which lasted for approximately 30 minutes.

Case Note Two: School B

School B participated in whole-school development over a year with a NDP facilitator. It was the school's first year in the project. The school is a large intermediate in an urban area, with a roll of 680 students. The findings are based on the work in five year 7 and 8 classrooms. The facilitator ran workshops with the staff in four groups (7–8 teachers in each) alongside the work in each teacher's classroom. The facilitator modelled a strategy lesson on the first visit, and each subsequent visit entailed co-teaching a strategy lesson with the teacher and modelling further lessons as required. The facilitator ran 30 minute co-generative dialogues with the group of teachers with whom she had worked that day.

Findings

The goal of co-teaching and co-generative dialogue is to generate praxeology – theory that provides new possibilities and new knowledge for action by the participants. Through co-teaching and co-generative dialogue, the learning potential of all is maximised.

> It's building on – when someone says something you can build that on and others will pick it up and take it further; you aren't thinking "we shouldn't be going down there", you're thinking "well, they can do it". It gives me ideas because everyone has different ideas about doing things and you learn so much from others. (School A, teacher D)

> It's an authentic kind of environment. You've got a model right there beside you, expertise, and then you bring it across to yourself and then apply your own touch to it. The intervention is right there. It happens straightaway rather than getting feedback later and trying to put it into practice. You get it right there and you can apply it straight away. (School B, teacher E)

There is a strong feeling of collective capacity and commitment among teachers and students and a compelling belief in the potential of all to make a positive difference for all.

> The ones who know things ... they are just so proud and they are so proud to share their knowledge. (School A, teacher A)

> We are all learning together, and so everybody can get to really big numbers like ones that go past ... like even past 100. We all know about even bigger numbers cos we are all doing it together. (School A, student aged 5)

> She [the facilitator] is helping our teacher basically learn new ways of teaching. New strategies that we haven't learned before that help us figure out and make it easier to learn. (School B, student aged 11)

> The kids' learning is the teacher's learning. And the teacher's learning is the kids' learning, they are both interwoven. (School B, facilitator)

Multiple teachers create a synergistic effect whereby more possibilities are available to the participants. Collective action provides a much greater space for change than would exist if teachers attempted change on their own (Roth & Tobin, 2005). Teacher and student experts are available to all learners and expand the opportunities for all learners.

> I talk to the kids who are stuck. I listen to the teachers and then I talk to the kids, so if they aren't sure, I can help. Like getting past ten [holds out hands and wiggles fingers], I can help them get past ten. (School A, student aged 7)

> There's heaps of thinking in the room. When I get stuck, I can have someone else's thinking like Jed, and then if others get stuck they can have some of my thinking. (School A, student aged 5)

> I supported her [facilitator] with the children in my class who she was working with and she helped me to seek and ask more questions and we just complemented each other. (School B, teacher B)

By directly experiencing the teaching of others, a relevant context is provided for building new teaching habits and transforming praxis. Understanding of the specific teaching/learning situation is developed and so too is local theory.

> The co-teaching for me as a new entrant teacher, I don't really go into those other regions very often, but it's good for me to see where other children are ... what we are aiming for and where we are going to and it helps me to be more focused about what we are doing. (School A, teacher C)
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> I think that actually it's not like recipes where somebody's talked to you and told you something and you file it. It happens then and there, so it's like you change your behaviour or you modify your behaviour right then when it happens. (School B, facilitator)
>
> I have content knowledge, but the teachers have content and contextual knowledge. They provide the link for me of how to best teach these kids at this moment. With that knowledge, the lesson is personalised and custom-made. (School A, facilitator).

The teachers saw these opportunities for co-generated theory and co-teaching as tools for their individual and collective professional development.

> What's been really good for me is listening to the way you people are getting excited about maths and it's the way maths has become quite high-profile. Maths is a feature; it's flavouring everything. (School A, teacher B)

Facilitators' and teachers' shared experiences, arising from co-teaching sessions, provided a useful resource for appropriation in co-generative dialogue in the feedback sessions between facilitators and teachers. There was evidence of depth in discussion of the mathematical purposes of activities through the detailed analyses of teacher action and student responses in the shared teaching sessions.

The shared practices generated in co-teaching enabled teachers to contextualise the core principles of the project. Teachers reported having agency through the appropriating resources, in particular as it related to their own classroom setting. This enabled them to interpret the core principles and transform their practices as they adopted the underlying ideas. Facilitators also reported having agency as they extended their interpretations of the core ideas through co-teaching sessions and the associated dialogue with teachers.

> Every time I participated in the co-teaching and co-generative dialogues, I learned more about how students acquire mathematical knowledge and how teachers encourage and scaffold that learning. All the other schools I work in benefit from what I have learned with these teachers. (School A, facilitator)

Conclusion

The analysis of the classroom-based professional development has identified dimensions of practice that have facilitated teacher learning and enabled teachers to adopt and integrate practices into their specific teaching context. The investigation highlights the fact that the facilitator's role as a co-teacher enables them to guide teachers' interpretations of the core principles of the project. Such an approach suggests that shifts in teachers' practice will be sustained after the facilitator visits conclude. This has important implications for ensuring the sustainability of reforms.

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