

The Use of Action Research To Assist the Transition into Teaching

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This paper discusses the learning's from an action research project conducted in collaboration between beginning teachers and a group of university researchers in mathematics and science education. Participants formed action research cells based on their common interests. This paper presents the overall structure of the project and discusses the resulting benefits to the participants and the benefits and limitations of the use of action research to assist transition into teaching.

First year teachers of mathematics enter the teaching profession with varying levels of skills, content and pedagogical knowledge, and confidence. Because of the lack of employment opportunities, many apply for, or are posted to isolated schools or schools with students who are culturally unfamiliar to the teachers. While first year teachers are attempting to overcome difficulties faced in the new school environment, Veenman (1984) suggested that these teachers "need both pedagogical assistance and psychological support." Katz (1972) described four stages of teacher development survival, consolidation, renewal and maturity. It was suggested that the first two stages characterise the first two or three years of teaching. The survival stage is distinguished by self interest and self concern, for instance, getting through the day and planning for a short period of time. In the consolidation stage, concerns move beyond self, and towards children.

Fuller (1969) described three major phases in teacher development pre-teaching, characterised by non concerns; early teaching phase, characterised by concerns for self; and a late teaching phase, characterised by concerns for pupils. Fuller and Bown revised this model (1975) to three stages of concerns of an inservice teacher's development. The stages were characterised by concerns for survival, the teaching situation (e.g., content, methods, materials), and pupils (e.g., students' learning and emotional needs). Other models have been reported in the literature, for example, Vonk (1983) and Burden (1980). Common to all of these models is the initial survival stage.

The Board of Teacher Registration (BTR), Queensland (1991) noted that many beginning teachers started "out with idealistic attitudes towards democratic classroom management, but ..(have) to abandon these in favour of the more custodial approach." Sullivan and Leder (1992) also reported beginning teachers tending towards authoritarian classroom control, and over directing classroom activities, including drill and practice activities. Further, there were many factors influencing beginning teachers' beliefs and behaviour. These included their own schooling and family background, preservice education, the transition process from preservice to inservice, the school and its induction programs, and the classroom itself. In their study of the influences affecting novice teachers' instruction, Sullivan and Leder found that a very significant factor was the students, themselves. Among recommendations for change in preservice courses to address this issue, one proposal for future research, suggested by Sullivan and Leder, was to look at the ability of teachers to reflect on their practice, with the view that reflection may influence the direction of their teaching.

Induction and support programs

Common induction programs for beginning teachers reported by Veenman (1984), include provision of printed materials about employment conditions and school regulations; orientation visits to schools before taking up duty; release time; group meetings among beginning teachers for emotional support; consultations with experienced teachers; and team teaching. However, in Australia in the 1970s, and even the 1980s (Davis, 1988) few beginning teachers (fewer than half) had participated in induction programs and many of the

recommended forms of assistance were not being offered (Board of Teacher Education, 1981).

The James Report in England (1972) recommended an induction program of *teacher-tutors* where both beginning teacher and the more experienced teacher-tutor would be given reduced teaching loads. The teacher-tutor would arrange inservice and provide professional help for the beginning teachers. Costs for such a program were found to be exorbitant. Also on the negative side, beginning teachers felt strongly about their perceived reduced professional status under such arrangements.

The teacher-tutor model is a similar program that has been initiated in many countries, for instance, *Indiana Mentor Internship Program*, *California Mentor Teacher Program*, *Mentor Teacher Internship Program*, *Kansas Internship Program* (BTR, 1991, pp. 21-22). In the mentor model, beginning teachers are assigned to "expert" teachers who provide support and advice (professionally or emotionally, or both), and organise professional development.

A related mentor model, a loosely structured "Buddy System" was trialed in Idaho (Klug, 1988), where mentors provided assistance on request. This model usually did not include set times for meetings, no set arrangements for observations and did not have formal guidelines. Participants found that the lack of structure to be confusing, and argued that the roles and goals should have been better defined. This was compared with another model, "Induction Team", where a team, comprising an administrator, a staff member from a higher education institution, and a mentor worked with a beginning teacher. Beginning teachers under this model were allocated some release time and underwent regular observations and attended set meetings. It was found that the participants preferred the more structured approach although they did find the observation requirements to be rather demanding.

Some induction programs have included university input, where university staff provided expertise, support and advice, and ran inservice courses (e.g., Cheney, Krajewski, & Combs, 1992; Dianda & Quartz, 1995; Reiman, McNair, McGee, & Hines, 1988). Some of these partnership programs associated with universities have incorporated reflective practice or action research at both preservice (e.g., McLaughlin & Hanifin, 1994) and inservice levels. Bartell (1990) asserted that "beginning teachers need to develop not only the capacity for seeking out ideas and resources but a framework for making decisions about what is or what is not useful or effective in their own practice." The advantage of such practice is that the participants seek knowledge and make decisions for their own settings, thus empowering them.

The EMSTAR project

The *Enhancing the immersion of beginning women teachers into Mathematics and Science Teaching through participatory Action Research networks* (EMSTAR) was a collaborative participatory action research project among nine first-year women teachers and university researchers. For the participating university staff, one of the main aims of the project was to investigate the support needed to enhance the transition of teachers from their university course into the profession, and the use of action research for facilitating transition. For the participating teachers, the project allowed them to collaborate with each others and the university staff to deal with specific aspects of their teaching of mathematics and science in their schools. The analysis in this paper deals with the use of action research in the facilitation of the transition of teachers into the teaching profession.

Action research in Education

The methodology adopted in this project was participatory action research (PAR). Kemmis and Wilkinson (1998) discussed the following characteristics of action research. First it is a *social* activity in that "it deliberately explores the relationship between the realms of the individual and the social." It recognises that "no individuation is possible without socialization, and no socialization is possible without individuation" (Habermas, 1992, p. 26). PAR is also *participatory* in that "it engages people in examining their knowledge (understandings, skills and values) and interpretive categories (the ways they interpret themselves and their action in the social and material world)." It is also

participatory in the sense that people can only do action research "on" themselves - individually or collectively. It is *not* research done "on" others. PAR is also *collaborative* in that "[a]ction researchers aim to work together in reconstructing their social interactions by reconstructing the acts that constitute them. It is a research done "with" others. PAR is *emancipatory* in that "it aims to help people recover, and unshackle themselves from the constraints of irrational, unproductive, unjust, and unsatisfying social *structures* which limit their self-development and self-determination." PAR is also *critical* in that "[i]t is a process in which people deliberately set out to contest and to reconstitute irrational, unproductive (or inefficient), unjust, and/or unsatisfying (alienating) ways of interpreting and describing their world (language/discourses), ways of working (work), and ways of relating to others (power)." Finally PAR is *recursive (reflexive, dialectical)* in that "it aims to help people to investigate reality in order to change it (Fals Borda, 1979), and to change reality in order to investigate it ... It is a process of learning by doing - and learning with others by changing the ways they interact in a shared social world."

Participants

The participants in the study were eight beginning women primary teachers and one participant still in her final semester at university. All teachers came from a four year BEd course at the Queensland University of Technology. During their final year in their course, these teachers had participated in the Women Trainee Teachers in Mathematics study (Atweh, Kyle, & Burnett, 1996; Atweh & Burnett, 1997) or worked as mentors in the Peer Assisted Study Sessions (PASS) program for students enrolled in a core unit called Science Foundations (Watters & Ginns, 1997). The participants represented a range of abilities in mathematics and science. They joined the project in the belief that it might benefit their teaching and that the findings would also help with the planning and implementation of the preservice primary teacher education program. The participants were invited to commit themselves to collaborative work with each other and with staff from the university in action research projects within their schools. Five of the beginning teachers were located in Queensland schools and three worked interstate - two in the Northern Territory and one in New South Wales. The teachers were joined by three university lectures, two in science education and one from mathematics education, and one research assistant. From time to time the expertise of more experienced people was called upon to assist in the discussions of the project.

Procedures

The fundamental aspect of this study was the formation of a *network* among the beginning teachers, staff from University and some more experienced teachers. Various *action research cells* emerged from the network. The university staff acted as facilitators for connecting teachers with similar needs and interests. During the third network meeting three groups of common interest were established. Three teachers decided that they were interested in working on catering for the needs of the gifted and talented; another three teachers were interested in aspects of assessment; the last three teachers shared an interest in making mathematics more relevant and inclusive to a wide cross section of students. This paper deals with the overall learning from the project. Other papers consider the findings from the action research cells (Atweh, Harris, Garrett, Pitman, & Sitton 1997; Suhrbier, Moman, Fitzgerald, & Ginns, 1997; Watters, Andrews, Henderson, & Everett, 1997).

Being an action research study, the exact procedures used in the study emerged from the various discussions at network and action research cell meetings, and classroom and school issues that teachers faced. The first network meeting allowed participants to identify their personal aims and negotiate the general operation of the study, and acquire some experience in using email. Principles of action research were elaborated upon at the first network and subsequent action research cell meetings. The second network meeting provided teachers with an opportunity to discuss and share their early experiences in their new schools as well as consider and reflect on their initial plans for action research in their own classrooms. Areas of common interest continued to emerge. The principles of action research were reiterated at this meeting.

Findings

Benefits to participating teachers

The other publications from this project present the voices of the women teachers enabling them to elaborate on the benefits to themselves. However, from our observations of the meetings we can identify some aspects of benefit to the teachers themselves.

There were times when the project did not seem to us to be going as we envisaged. Teachers were not sending information or fulfilling the agreed action from the action research cell meetings. We often wondered if they saw this project as a not-so-useful activity that they were engaged in for our purposes only. However, all nine teachers who remained in the project after the end of the first term of school, remained in the project for the rest of the year. They all had the opportunity of leaving the project as some of their colleagues had done so early on. They had not done so. Obviously they were receiving some benefit from the project.

From our observations, the discussions at the network as well as action research cell meetings provided a feeling of mutual care and support. At the early stages of the project the participants were asking each other about their placements and plans. Later, some of them volunteered suggestions and ideas for each others' considerations. The project developed a sense of community among the teachers. Two of the teachers were placed in isolated communities in the Northern Territory and this sense of community was particularly important for them. We believe that teachers had a chance to reflect on the major problems that they encountered in their teaching, and many found this aspect useful to increase their self awareness about their practice. Similarly the sharing of their stories with each other assisted them to compare their practice with others. More importantly, they were confident that they could share their main concern in a supportive and non-judgmental atmosphere. In one of the action research cells the participants had a chance to share with one another a situational analysis of their school and in a special meeting they had an opportunity to comment and make suggestions on issues arising from the situational analyses. Many of these comments were accepted gracefully by the participants.

Naturally the question whether the practice of those teachers and the understanding of their practice has actually changed as a result of their involvement in this project, we can not answer in this context. The papers by the teachers themselves address some of these points.

Benefits to the university researchers

As university researchers we had to negotiate our roles with the participants. We were careful not to let our agenda and interests dictate the action research conducted by the teachers. Among us we had a wide interest in topics and areas that cover mathematics, science education, and gifted and talented children. As participants in the first two meetings of the network, we declared our interests just like any other member of the group. We also indicated several areas in which each one of us had some interest. Each participating teacher did the same as well. The three action research cells that were formed using this process were based on the patterns of interest demonstrated by each participant. The degree that our interests have determined the outcome of the groups is not clear. However, we are confident that each member of the action research cells was pleased with her selection. What was pleasing to us was that the action research cells have been selected in areas that we were very interested in as well.

As university researchers we have a range of interests, commitment to, and understanding of action research. In our planning meetings we debated our practices and plans for our groups. Ultimately we worked independently within our action research cells. Our actions within these cells were determined as much by our values and beliefs as by the needs of the participating teachers. How the particular groups functioned is once again illustrated in the in other publications from the project. One thing we are confident of, is that we are more committed to the process of action research as a means of professional development of teachers at the end of this process than we were at the beginning. None of us has been involved in an action research project where the participants were at a distance

from us, and where we were unable to meet them face to face on a regular basis. This was a learning experience for all of us.

This project increased our understanding of the isolation and the problems that first year teachers face. This knowledge, also documented in the individual papers mentioned above, was more real to us than a widely circulated survey or review of the literature because it arose from talking face to face with teachers as they experienced these problems.

Difficulties Encountered

By the nature and scope of the project some learnings evolved out of dilemmas and difficulties we encountered which resulted in several compromises. The first type of difficulty encountered arose due to the geographical distance separating the participants. In one action research cell all the members of the group were interstate. Hence, the only contact possible was electronically. Other groups also had difficulty arranging face to face meetings. Undoubtedly this created serious difficulties for the usual meetings of action research cells. Although it did not take participants very long to get used to teleconferences, the nature of such meetings prohibited important aspects of communications. It had a tendency of making the meetings more structured and formal. This may increase the efficiency of meetings, but also it places artificial constraints on the interactions among participants. There are protocols of politeness in talking on the phone and these may prevent some participants from debating issues. Further, teleconferencing is an expensive way to meet. Even though the project received a grant for that aspect, we were very careful not to exceed the time limits in our meetings. Communication problems with some teachers were not restricted to telephone. One teacher in an isolated area received mail only once a week. Another teacher did not like receiving faxes from the other participants because of lack of privacy at the school. At the planning stages of the project we expected that every participant would be connected through email. In spite of accounting for that service in our budget, this aspect of the project did not work at all. Those who had email facilities often had to share them with many other teachers in the schools. Others did not have the software or hardware to connect to the internet. Access to email is only part of the problem. An email culture needs to develop before people use email confidently for regular communication and sharing of learnings and problem solving. The culture of the school did not incorporate email communication as a normal means of communication. Lastly, being at a distance created limitations on how much we as facilitators can really understand the context of the teachers without having visited it. This difficulty was shared by teachers from the various schools as well. This is an inherent limitation of action research groups such as these.

The second main difficulty we faced related to the competing demands on teachers' time. First year teachers are always under pressure to meet commitments and satisfy the demands of their classes and schools. In certain ways, a decision to be part of an action research project is a commitment to carry the burden of additional responsibilities and activities. These additional responsibilities may take teachers attention away from more immediate and urgent tasks. The literature on beginning teachers indicate that the first year is a survival year. Are we being unfair to add to those responsibilities concerns about the gifted and talented, varied assessment and inclusive curriculum? Is the involvement in this project justified? Is it good value for money? Once again, the persistence of the teachers in the project is a partial answer to these questions..

The last type of dilemma we faced was related to the different understandings of the nature of the project by the various participants. On several occasions the participants would ask the university researchers about what was the next stage in the process. Even though it appears some of the teachers took responsibility for reflecting on their own practice, none of them took charge of the process. Guidance was left to the university staff. In one sense the teachers did not own completely the process of collaboration as a means of improving practice. The project, even though it might have been seen as useful and enjoyable, was also peripheral to the main concerns of those teachers. Similarly, where our concerns may have been on emancipatory aspects of action research and a critical understanding of practice, it seemed to us at times that the needs of the teachers were more technical and practical.

Perhaps in our naivety we underestimated the pressure for survival that these teachers are under. Perhaps that is all they need as new teachers.

Discussion and Conclusions

Kemmis argues that PAR is participatory in that the people affected by the research findings should participate in its design, conduct and analysis. This project was planned to allow the teachers the greatest input in determining the issues pursued and the methods adopted. However, the participation of the different players was not necessary equal. The university researchers, as holders of the grant to conduct the research and as more experienced action researchers, outlined the general structure of the project at the early stages of its implementation. Although the plans were not adhered to rigorously, they determined to a large extent the structure of the project. At the early stages of the project the teachers felt some unease because they did not know clearly what the project was supposed to investigate and what was the expectation of them. However, by the time the action research cells were formed, the teachers did take a little more responsibility for the planning of the project. In discussing the problems of participation in research with the profession, Grundy (1998) discusses the issue of "parity of esteem" where the different expertise of the different participants is brought to bear in the design and conduct of the project. All participants should be aware of these limitations to equal participation and should negotiate the roles and expectations early in the project. Distinction should be made as to the variants and constraints of the project and to the roles of the different partners and their expectations of each other.

Kemmis also argues that PAR is collaborative in that different players are involved in the practice; and work together to develop individual and collective understanding and improvement of the practice. Naturally, the problems associated with the transition and their solutions are dependent on other people in addition to the beginning teachers themselves. For example, the crucial roles of the school administration, other staff and other members of the school community can not be overemphasised. Should they be participants in the project as well? It is conceivable that the action research cells could have been formed around the individual schools with the participation of the school administrators and other more experienced teachers. We are confident that such an organisation would have been useful as well. However, in this project, we decided to work with the teachers from the same cohort and leave the nurturing of the contact with other players to the teachers themselves. In the organisation adopted here, the beginning teachers have been able to develop a sense of rapport with each other being from the same cohort of a teacher education course. Further, the formation of support groups from outside the individual schools implied the teacher could be open about the problems experienced without fear of reprisal. Lastly, talking to teachers from other schools and knowing what is available or possible in other contexts implied that the teachers could be more critical about what was happening at their own schools. Working with teachers from other contexts gave them the opportunity to explain their own context to others.

The further characteristic of action research as identified by Kemmis is that it is a social activity. This project allowed the teachers a deeper awareness of the social context of their teaching. At least in one action research cells, the participating teachers decided to write a situational analysis of their respective context to share with each other. Their writings showed a deep insight and knowledge of the social background of their students and the ethos of the school, and other limitations to their practice. Further, through the discussion with each other, they learnt how to identify the practical difficulties that could more easily be changed.

The fourth and fifth characteristics of PAR as identified by Kemmis are critical and emancipatory, in that the practice in which the participants are involved is seen as a part of a system that, at times, acts and is structured contrary to the interests of the beginning teachers, and it attempts to empower teachers to improve their own practice. We felt that, in general, these aspects of action research were not highly successful in the three action research cells. The teachers tended to be more concerned with day to day problems of how to conduct and manage classes, how to conduct appropriate and

manageable assessment, and so on. Although not unexpected or unreasonable at this stage of teaching, technical needs have a priority over practical and emancipatory needs.

Finally, Kemmis argues that PAR is reflexive and recursive. As argued above, the project was designed to maximise the input of the teachers themselves in understanding and improving their practice. The teachers adapted to this change in philosophy from their teacher training days, where the lecturers were often considered as authority, to the more participatory action research project. This project was very much researching *with* the teachers rather than *on* the teachers. Whether the practices of action and reflection would be entrenched in the professional life of the teachers in future years remains to me seen. Yet we believe that the teachers have taken a step in that direction.

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