

Sustaining School Improvement Through Collaborative Action Research

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Systemic change requires professional learning to reconstruct existing practice. Professional learning models designed to address mental models (beliefs and assumptions that guide teachers' instructional decisions) can lead to significant and enduring changes in classroom practice. In our study, we found action research to be a highly effective staff development model to promote introspection and professional growth.

In a Southwestern Ontario school board, seven school based teams participated in an action research intervention designed to improve educational practices during the 2007-2008 school year¹. Four half-day sessions were facilitated at the district level and additional release time was provided to support the work of teams within their schools. In our analysis of the data, we found that engaging teams of educators in collaborative action research helped to establish conditions supportive of cultural change. In this paper, we examine how the use of data, reflective practice, and the creation and sharing of knowledge caused individuals to challenge existing beliefs and assumptions and commit to change existing practice.

The Action Research Process

Collaborative² action research offers a systematic way for groups of individuals to explore issues and to determine potential resolutions through shared inquiry, reflection, and dialogue. Participating in collaborative research enables educators to make better informed, evidence-based decisions about issues that are directly related to improving the learning for the students in their schools. The action research process employed involves four interactive stages: problem framing; collecting data; analyzing data; and celebrating and sharing.

The problem framing stage involves the identification of a 'problem' or a focus for the team's inquiry. Team members identify an issue related to their work-site that warrants investigation. Connecting the problem to site-based concerns, typically related to teaching and learning, ensures authenticity. Participants select real/authentic 'problems of practice' (Hoban, 2002). This insures that the problem reflects the 'ethics of practicality' which, according to Doyle and Ponder (1977), is essential for the sustained engagement of educational practitioners. The problem being investigated might involve a practice needing improvement or one that is working well. In the latter case, the team's inquiry focuses on reasons why certain practices are more effective than others. Inquiries

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² Little (1990) provides a useful topology of collaboration and in this study, we defined collaboration as joint work which is at the highest level of Little's definition.

are connected to real and worthwhile issues making it relevant to the work of the team. During this stage in the process, teams identify what it is they wish to accomplish although the specifics of the focus will continue to emerge..

In the second stage, action research teams select data collection strategies that will provide relevant information to address their problem of practice. They determine what kind of data to collect, how to collect the data, and where to collect it. Action research is often related to qualitative inquiry because this research process is more flexible and emergent. Questions change during the research process as teams learn more about the issue they're exploring. Therefore, action research teams often collect qualitative data including evidence based on observations, interviews, and written responses and such practices are similar to the ones used by educators in their work sites (ie a conference with a student is similar process to an interview).

During the third stage, teams move from assuming to knowing as they use the evidence collected to answer their inquiry. Searching for patterns is the essence of qualitative data analysis; teams learn how to make meaning of data by identifying patterns and themes and formulating conclusions. This entails re-reading the data numerous times in order to identify big themes. The themes can then be used to develop a coding system which allows the team to 'group' and reduce the data. Once the data are reduced to a manageable amount, the team determines if the data supports their assertions. Both data collection and data analysis ends when the teams feel they have the insights needed to address their inquiry.

The final stage in the process is when teams come together to celebrate and share their research. The writing of the action research report serves as closure and is a great way to build and share teacher knowledge. Through this process, teachers create and share knowledge that can be used to help others improve their practice.

The purpose for our study was to examine the relationships between collaborative action research and sustained school improvement evidenced in one Southwestern Ontario school board and consider the ramifications for other contexts.

Participants

Potential teams for this study were identified in the fall of 2007 based on a number of criteria. The school board, located in Southwestern Ontario, has 61 elementary schools and 16 secondary schools. Over the past few years, many of the elementary schools had received additional funding to support the implementation of professional learning communities under the identification of the Ontario Focused Intervention Partnership (OFIP) Program. OFIP, funded through the Ministry of Education in Ontario, is a key strategy intended to support schools experiencing difficulty in achieving continuous improvement. Schools who received this additional support were removed from the list as it was expected that the organizational structures necessary to proceed change in school culture may have already begun to have been established. Schools where OFIP funding had been provided had greater potential to have previously well established professional learning communities in place and were therefore removed from the list.

Secondly, recent results from the remaining school's primary and junior

standardized Education Quality and Accountability Office (EQAO) assessments were examined. Four schools in which significant declines in reading, writing, and/or mathematics in either division occurred in the previous year were selected. In September, the Principals from each of the four schools were contacted and invited to participate. All agreed to establish teams to participate in a collaborative action research project focused on school improvement. School teams consisted of the Principal, one teacher from each division (primary, junior, and intermediate), the Learning Support Teacher (LST), and the school's Literacy-Numeracy Support Teacher (LNST).

In an effort to build the capacity of individuals within the school board to conduct action research, thirteen additional individuals who held positions of added responsibility were invited to form teams and participate in the process. All thirteen agreed to participate forming four additional teams: two teams comprised of Literacy-Numeracy Support Teachers (LNSTs) who coach elementary teachers and two teams comprised of Student Success Teachers (SSTs) who work in secondary schools supporting at-risk students.

Methods

Data were collected between the months of November 2007 and May 2008 from four sources at both the system and the individual sessions. This data included: ten hours of videotape documenting team discussions and reflections as participants were facilitated through the action research process; written reflections from the participants; final reports outlining each team's research; and anecdotal observations written by a participant researcher.

The four pieces were analyzed using a coding system generated from multiple viewing of the video and multiple readings of the texts. We first divided the data into the following themes:

1. confronting themes: evidence where teachers reported that their current beliefs and assumptions were challenged, and
2. commitment themes: actions teachers might engage because of their research findings

Data categorized into confronting themes revealed several patterns of introspection resulting from the use of evidence, reflection, and the creation and sharing of knowledge. The confronting themes were coded into the following three categories:

- a) introspection resulting from the use of evidence;
- b) introspection resulting from reflection; and
- c) introspection resulting from the creation and sharing of knowledge.

Commitment themes were coded into the following two categories:

- a) actions participants planned to direct toward themselves; and
- b) actions participants planned to direct toward their future students.

Finally, the data were coded for examples of the impact of the action research experience on the participants. What follows is an explanation of the themes and categories that emerged from our analysis.

Findings

The evidence indicates that by doing school-based action research projects, the involved teachers and principals had improved their practice and were engaged in adapting their work culture. Two broad themes emerged: confronting themes (evidence where teachers reported that their current beliefs and assumptions were challenged) and commitment themes (actions teachers identified they would engage in as a result of the conclusions drawn from their inquiry). We examine these themes in more depth in the following text.

Confronting Current Beliefs and Assumptions

Several paradigm shifts are currently apparent in educational practice, including moving: from a mechanistic to complexity perspective on educational change (Fullen, 2005; Hoban, 2002); from a focus on teaching to one on learning (Hawley & Valli, 1999); from continuation of past practice to a evidence-based change (Earl, & Katz, 2005, 2003; Earl, & Lee, 1998). Such educational reforms require that educators adapt their practice and often this requires that these individuals challenge their past beliefs about teaching and learning in order to reconstruct their mental models (Duffy, 2003). Conducting school-based collaborative action research assisted the participants in adapting some of their beliefs to be more congruent with the paradigm shifts currently occurring. In our data, teachers reported that existing beliefs and assumptions were challenged as a result of using evidence, engaging in reflection, and creating and sharing knowledge.

Using Evidence

The action research process required that participants collect evidence on their actions to solve their authentic problem. The resulting examination of evidence served as a catalyst for challenging existing beliefs about teaching. The evidence provided a glimpse into practice related to solving the self-defined authentic problems. Focussing on authentic problems related to the 'ethics of practicality' (Doyle & Ponder, 1977) shared by most educators was critical as educators will adapt practice if that improves student learning (Duffy, 2003). Comments by participants reinforced that data on their actions both challenged and confirmed their beliefs:

The data made us question our beliefs – some were confirmed. The data helped to drive instruction and confirmed or disproved prior knowledge.

We had a lot of discussion and had to back up at times and say okay these are assumptions we're making as teachers – as to what we think will work. Are we right about that?

Such examinations of data, related to their practice caused participants to evaluate instruction and subsequently guided their decisions about instruction. The shared collaborative research project encouraged the school teams to engage in collaborative professional dialogue:

Data analysis provided an opportunity for us to 'dig deeper' - leading to conversations around why students answered a certain way. We worked

together to analyze the data in order to identify instructional strategies, programs, and curriculum to address identified needs. Common pre/post diagnostic and formative assessments were developed to evaluate the effectiveness of selected high yield strategies.

School teams used data to determine and then assesses actions related to their authentic problems:

The data validated our teaching processes and also created opportunities for us to consider next steps.

Collecting and analyzing data on actions to solve authentic problems, brought clarity to the teaching practice:

I had begun to see how text choices were affecting classroom involvement and interest among the boys. The analysis of data was relevant in creating a classroom library that was stimulating and engaging to the boys.

Participants also reported on the importance of multiple data sources (defined as triangulation in the research literature):

As our action research team developed the focus of our research, I began compiling data in the classroom. I used this combined foundation information to guide my classroom instruction and reading choices to engage boys in reading. I also knew that I could not rely on testing alone to assess the students, but conducted observations and compiled additional assessment data.

Involvement in the action research process, and in particularly, collecting data on actions to improve an authentic problem, provided a mirror through which individuals could see their practice. If individuals identified alternative ways to improve student learning, they shifted their beliefs accordingly.

Engaging in reflection

Reflective practice is the hallmark of a viable school improvement program (Glanz, 2005). During this study, it was common for participants to engage in reflection and discussion on their common authentic problem and then adjust their practice accordingly. Being involved collectively in dialoguing on issues related to the self-selected problems promoted reflection-in-action (Schön, 1982). Further, by engaging in reflective practice and then sharing their reflections with others, teachers deepened their understanding and expanded their instructional repertoire. As one participant noted:

In my reflection on my participation in this project, I feel that there are several recommendations or next steps for my classroom. What I found

was there were even more opportunities for explicit teaching in areas that I didn't think of doing explicit teaching.

The common focus of each team's action research provided the grounds for team members to engage in reflection and dialogue. This ensured that the resulting collective professional dialogue was of value to the participants. As noted in the previous section, the data collected encouraged the participants to reflect on their existing beliefs related to teaching and learning. For instance:

This process provided not only an opportunity to analyze student responses and look deeper into ways to help them comprehend and handle questions effectively but provided direction to experiment and reflect upon intervention/instructional strategies. I realized that traditional beliefs about teaching often need to be challenged.

The above data quote suggests that individuals were considering their tacit knowledge and how that knowledge might shape their mental models related to the teaching and learning processes. Similar interaction between tacit knowledge and action were apparent in other quotes. This connection is critical as the business literature clearly connects action and knowledge creation. As Nonaka and Takeuchi (1995, p. 10) explain, "the most powerful learning comes from direct experience" and Von Krogh, Ichijo and Nonaka (2000, p. 27) maintain that knowledge is "ultimately tied to action" when focussed on solving an authentic 'problem of practice' (Hoban, 2002). The action research process was facilitating such connections as reported by a participant:

One of the most important aspects of this action research was the way in which it compelled me to stop, take a look at data, and think about what it meant to my students' achievement and my teaching practice.

All of this might be promoting one of the paradigm shifts noted earlier as described by a participant:

Reflecting helped us to focus on learning as opposed to teaching.

Creating and Sharing Knowledge

Action research provides a powerful means through which practitioners can engage in creating professional knowledge. The process itself is very reminiscent of the 'tinkering' identified by David Hargreaves (2002) as important in the knowledge creation. As well, participants were eager to share the knowledge they created. The norm of sharing one's knowledge with others is the key to continual growth for all (Fullan, 2002) and to knowledge creating organizations. Again, the action research process valued the tacit knowledge that educators had accrued from their practice, although the same process also challenged such knowledge. Perhaps more importantly, participants realized that tacit knowledge was powerful and legitimate knowledge. A participant explained:

It's good to know that a lot of the things we face as teachers are the same and that we have this knowledge amongst us all. We just need to share it.

Fullan (2002) also acknowledged that knowledge creation and sharing is one component that characterizes principals who lead cultural change. Participating principals saw the value in sharing their school's research and each indicated that they would expand the team to include more staff next time.

Commitment Theme

There were two very distinct categories within the commitment theme: actions participants planned to direct toward themselves; and actions participants planned to direct toward their future students. First, the following quotes reveal how, through the use of evidence, reflection, and creating and sharing knowledge participants made commitments to change their future practice. Some individuals reported on specific actions that they would change in their practice:

Reflection is certainly a key word and was, indeed, a key part of the process. My goal for each new school year has been to develop a reflective journal, an idea soon forgotten in the business of September's routines and renewed commitments. The specific direction and timelines of this project pushed me to pause, think, and make my reflections more than an item on my 'TO Do' list.

Several other participants reported that they would use the findings from the current year to shape their actions in the following year. Plus they reported that they would now engage in action research much earlier in the school year:

It certainly gives me a jump start for next year and as I plan into the following year – makes me think about what I would do differently.

I'd start a lot earlier in the year. Now that I have the knowledge I can implement this right in September.

We need to take what we found and implement it school-wide and start earlier in the year.

Perhaps more importantly, several comments indicated that participants were changing their practice based on the findings from their collaborative action research projects. These individuals reported:

Our next steps are to plan the next intervention and keep focusing on 'specific' teaching.

I was able to identify high-yield strategies. The information I gathered will help to drive my instruction this year and next.

I feel that there are several recommendations or next steps for my classroom. The use of literature circles that involved a three-tier selection of literature proved beneficial and successful and should be continued. The small group guided reading sessions provided support to all of my students and was seen as a valuable activity by the students as well. Lastly, the continued praise and encouragement (i.e., teacher feedback and comments) allowed students to see the results of their sustained efforts first hand.

Secondly, teacher identified changes they intended to direct toward their future students. But the comments relate to how the participant were change their actions *in order* to improve the opportunities for students. One individual simply stated:

I learned what works well for my students and will make more opportunities for explicit instruction.

Similarly another data quote suggests that the individual also would focus on teaching explicit skills regardless of the venue:

The [action research] process demonstrated the importance of identifying the strengths and weakness of each student and then developing programs that meet their needs. Explicit teaching of skills and strategies, whether in small focused groups of whole class instruction, is an essential component for student achievement.

Another individual reported that s/he would be more attune to gender issues because of the findings from the action research project:

There are also several implications here in terms of differentiated instruction. I plan to continue with the guided reading/focus groups, select materials with gender interests in mind, and, for the girls, launch more reading circles opportunities, a format, with its social aspect, that I think would especially appeal to girls this age.

A participant raised an interesting observation from his or her action research findings. In this instance, the participant advocated increased student and parental participation in planning and decision-making:

The student voice, as a whole, needs to be heard and it is the recommendation of the Action Research Committee that the students

themselves be involved in the planning and development of action items or themes. For example, students and parents alike should be in attendance on the various committees, such as the Character Education and Safe School initiatives that have begun this academic school year.

The Connection Between Confronting and Committing

The connection between confronting existing beliefs and assumptions and expressed commitment to future action was reported by action research participants. Although recognition of changing beliefs does not guarantee that actions reflecting that change will ensue, many change theories propose that a change in beliefs is a necessary precursor to significant and enduring change in practice. Still other researcher (ie Guskey, 1986) suggest that changes in action precede changes in beliefs. Several researchers have stressed that teachers will change their practice if it is demonstrated that the adaptations will improve students learning (Duffy, 2003; Nevills, 2003). Action research, as a strategy, provided a means to create and balance the tension between data on past practice and insights into future practice. In this study, data indicated that teachers would change their beliefs systems and their practice. The data indicate that action research is a powerful professional learning model that addresses the mental models that guide decisions about instructional practice and holds potential for reconstructing existing practice.

Impact of Action Research on Participants

Action research is a powerful design as it recognizes the role of teachers in ongoing school improvement. The qualities and characteristics of powerful professional learning help to establish the conditions that are required for the long term viability of professional learning communities (PLCs). Introducing powerful learning designs such as action research into the work of PLCs will help to ingrain a culture of inquiry and reflection and sustain the capacity of PLCs even if key leaders are moved from schools. As one participant explained:

Although I had read extensively on the subject of PLCs, seeing one in action as we formulated a question, worked through the research process, gathered and analyzed data and finally, completed our written report and recommendations, gave me a concrete and real life insight into the workings and value of PLCs that books and articles could not.

As well, participants reported that involvement in action research would also help principals and teachers accomplish the goals set out in their School Improvement Plans. Overwhelmingly, the data collected stressed the relationship between doing action research on authentic problems of practice and sustained changes to practice. For instance:

It helped to challenge the status quo and implement change.

The very concrete and results-oriented research process that involved deep thought, data analysis, and reflection provided the stimulus to develop and implement more action research projects within my classroom. And finally, this commentary would not be complete without noting the most important benefit for my students and for me: in fact, the most important action in this project... the learning that took place in my classroom.

Advice to someone new to the process - use it as a catalyst for future change.

Sustaining School Improvement Through Action Research

Our objectives were to examine the relationships between collaborative action research and sustained school improvement evidenced in one Southwestern Ontario school board and consider the ramifications for other contexts. Markward and Marino (2008) identified the establishment of a common focus as one precursor necessary for systemic change. When teams conducted collaborative action research for the purpose of school improvement it enabled them to develop a common focus and therefore delve more deeply into issues. This meant that they were involved in joint work (Little, 1990) thus enacting the “collaborative problem solving” mode advocated by Hawley and Valley (1999, p. 141). Increasing, working collaboratively to improve education has dominated the literature and practice (e.g., Darling-Hammond & McLaughlin, 1995; Day, 2002; Fullan, 1995; Hannay, 2003; Hawley & Valli, 1999; Little, 1993; Stoll, Fink & Earl, 2003) because it reflects the social aspect of professional knowledge construction (Putnam & Borko, 2002) and decreased the isolation of teachers described by Lortie (1975).

In this project, collaborative action research teams shared a common focus for improvement and engaged in rich dialogues through which individuals clarified theories and tested assumptions. The work of the team became more meaningful as it was linked to a cohesive improvement effort. As one team member shared:

Our greatest success has been that it has focused us on common strategies for our school effectiveness framework throughout the school.

The potential for successful outcomes increased when individuals worked as a team and focused their efforts on the same issue, especially if the members of the team identified the issue being addressed. A participant stated:

Through our action research we were able to identify priorities and resources required for success. We related it to an on-going initiative and celebrated what we were doing and kept talking about it. As we kept talking about it, we got more people to buy into the project.

Conclusion

Action research helped teams focus efforts on areas of school improvement that were worthwhile through the examination of evidence, reflection, and the creation and sharing of knowledge. It offered a systematic way for school improvement teams to determine potential resolutions to contextual issues.

Sustainable school improvement requires a change in culture. Indeed, Fullan (2002) maintains that “transforming culture – changing what people in the organization value and how they work together to accomplish it – leads to deep, lasting change” (p. 18). Collaborative action research is a powerful professional learning model that has the potential to lay the foundation for changing cultures. We found that when individuals come together to collaboratively engage in action research they help to create a school culture of shared responsibility, commitment, and communication.

In addition, participating in action research provided individuals with opportunities to become leaders in learning. Creating a community of learners is necessary for cultural change. Fullan (2002) noted that schools need many leaders at many levels in order to flourish and that learning in context helps to produce lead learners. Inquiries focused on school improvement provided the context for individuals to take on learning leadership roles. Participants said, “We enjoyed the professional learning that occurred throughout the process.”

School improvement can only be sustained by changing existing cultures. When action research teams focused on a common area for school improvement it resulted in collaborative working patterns, collective action, the use of evidence to inform practice, reflection and sharing knowledge. Participants valued students’ feedback. By accessing student voices, participants changed their practice based on the belief that it would improve student learning. When these behaviours become ingrained in the day-to-day practices of educators, cultures begin to change.

Action research, as staff development, recognizes the role of teachers in lasting school improvement (Bernauer, 2002). Collaborative action research is an approach that can lead to cohesive school improvement. The behaviour that resulted from participation in this study speaks to the potential of collaborative action research as a means of changing school cultures and sustaining school improvement.

In conclusion, systemic change requires professional learning to reconstruct existing practice. Action research proved to be a professional learning model in which participants’ existing mental models were challenged and commitments to change were professed. These outcomes reflect the manifested behaviours that are necessary to move a system forward to impact learning at the student level.

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