The Impact of Layers of Relationships on Teachers’ Learning: A Case Study of a Collaborative Action Research Model

by

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Abstract

This is a case study of a model of collaborative action research used as staff development in a high school. It was conducted with 6 teachers and an assistant principal over the course of three months. The study addresses the impact of collaborative action research on teachers’ learning and on their teaching practice. It describes features of the model that most significantly influenced teachers’ learning and change, highlighting the importance of relationships. Conclusions of the study indicate that the model used at the school was consistent to constructivist principles of learning and that it provided meaningful and powerful learning experiences for the teachers who were studied.
**Introduction**

Cognitive psychology has had a great impact on how we think about how human beings learn and construct their knowledge. In contrast to traditional perspectives of learning, constructivist theories share the belief that knowledge is actively constructed by each individual and meaning is not given *to*, but built *by* the learner (Duckworth, 1996). This has placed learners in a central role in the learning process.

As a Curriculum Coordinator in a private elementary school in Brazil I felt that putting constructivist principles in practice was no easy task. Doing so required a major shift in how educators historically understood their role and on how they had been doing their jobs. Working with a constructivist framework demanded that teachers reflected about their teaching and how their students learned. Making this shift meant new learnings and new approaches. For that to happen, teachers needed to be supported in their learning and in changing their practices towards a constructivist approach to teaching.

One of the ways to provide this support was through staff development. However, generally these programs were externally driven and present knowledge in a way that uses a traditional framework of learning, with learning and meaning being external and transmitted to the individual. In these staff development initiatives, teachers were expected to listen to speakers and to apply what had been transmitted when they left the in-service or workshop.

While doing preliminary research about staff development, I learned that a more recent trend in staff development emphasized teachers as constructors of their own knowledge, assigning meaning to new information based on their beliefs and prior knowledge. According to this trend, professional development opportunities should allow teachers to reflect on their knowledge base in ways that were meaningful to them, giving them more ownership of their own learning processes.

One of the approaches consistent to these principles was collaborative action research. In collaborative action research, a group of teachers engaged in disciplined inquiry about their teaching and their students’ learning. The purpose of doing so was to deepen teachers’ understanding of both teaching and learning processes as a means of improving their practice. The focus of research was defined by teachers themselves and was based on their feeling of the
areas that needed improvement in their practices. This put teachers’ learning and needs at the center of the whole model. As a collaborative effort, action research could provide the necessary conditions for the development of a community of professionals who learn with and from each other. This could have a major impact on teachers’ learning.

While there was an assumption that collaborative action research would be beneficial to teachers and their students, little research had been done on how and why such staff development influenced teachers’ learning and classroom practices. Taking this into consideration, I designed this research project to study a collaborative action research project that took place in a high school located in the Midwest. My objective in doing so was to investigate the impact of the model on participants’ learning, and how it informed their teaching practices. In addition, I wanted to understand which factors of this model teachers considered to be the most influential in their learning and teaching practices. The following questions guided this research:

- How does teachers’ learning through collaborative action research change their classroom practice?
- What is the impact of collaborative action research on teachers’ learning?
- What factors most significantly influence changes in teachers’ learning and teaching?

**Literature Review**

Taking into consideration the literature reviewed for this study, it was possible to conclude that change in teachers’ learning and practice from a traditional perspective of learning to one that is consistent to constructivist principles demands specific approaches to staff development.

Briefly, staff development should recognize the need that teachers have to assign personal meaning to their learning experiences. It should engage teachers in inquiry about their practices, grounding teachers’ learning on their classrooms. Teachers’ beliefs should be acknowledged and honored. Relationships should be supported and nurtured collaborating for the creation of a community of practitioners in the school. Teachers should be provided with a safe environment to learn. Trust, openness and bonding should be addressed by staff development opportunities. Ownership of one’s process of learning would be important to be present in staff development activities. Teachers needed to be involved in the decisions about what they should learn and how they go about changing. Finally, time should be provided for teachers to learn and change their
practices. Teachers should be offered with opportunities that provided sustained support for their learning. This meant that one-shot staff development sessions should give place to more continual efforts that addressed long term goals for teachers’ change and learning.

Research about collaborative action research suggested that it recognizes the features stated above. It was argued that teachers’ learning and teaching practices received an impact from participating in this type of staff development. Studies pointed out that teachers became more reflective and flexible in their thinking and that they tended to move from teacher-centered approaches to student-centered approaches in their teaching.

Despite the fact that many educators considered collaborative action research as being positive for teachers’ learning and growth, others questioned if teachers should conduct research in their classrooms. Time, specific knowledge and skills to conduct research as well as lack of resources were identified as elements that could work against the idea of teachers conducting research.

Though it seemed that there was more evidence that collaborative action research had positive impact on teachers’ learning and that it contributed to their professional growth doing more research on this was still necessary. As more and more research is done in this field we can have a better understanding of its impact on the opportunities of development and life-long learning that we provide for teachers in our schools and, as a consequence to the quality of instruction that students receive.

**Research Methodology**

A qualitative interpretative design was used to conduct this research, which was organized as a case study. The design choice took into consideration the nature of the questions that I had when I began doing the research. Since learning and change were being considered as particular to each individual, these questions called for a design that would make it possible to grasp the uniqueness of the impact of the use of collaborative action research for each of the subjects of the study. In addition such a design would make it possible to have a more in-depth understanding of the processes that were being studied, something that would not be possible if a quantitative approach had been used.
Description of the Site

The study was conducted at Park High School, a suburban high school located in the Midwest. Park High School was a four-year comprehensive school. (The name of the school has been changed to preserve its anonymity.) Its community was largely suburban residential, with some light industry. Though there was some diversity in the socio-economic makeup of Park High School students, most of them came from upper middle class homes. The student body of the school numbered 81% Caucasian, 13% Hispanic, 4% Afro-American, and 2% Asian American. The school had 1,539 students enrolled for 1998-99, with 405 graduating seniors.

Action Research Laboratory (ARL)

Park High School had used collaborative action research since 1995. It had established an Action Research Laboratory (ARL) to offer teachers the necessary means and encouragement to engage in collaborative action research.

In the ARL teachers were organized in multi-disciplinary teams of three members each. There were six teams engaged in the ARL at the time of this study. With the guidance of a facilitator, they integrated into their practices the process of collaborative action research: working collaboratively to set goals, collecting and analyzing data, taking action, and establishing new goals (Senese et al, 1998, p. 1).

The framework of the ARL is listed below:

- Every team met for a full day once a month to plan activities and research.
- Teachers met regularly with a facilitator that tried to create a supportive learning environment for the team.
- Teams were multi-disciplinary.
- Team members were required to observe each other’s classes.
- Teachers should engage in research.
- Teachers should attend conferences and workshops closely related to their research topic or other activities outside the school such as visiting other buildings as a team.
- Teachers should have time to develop and carry out action research.
At the end of each school year, ARL members should write an individual report about their action research.

Before they were placed in a team, teachers agreed to share the results of their work with others.

**Action Research Teams and their Work**

The first and the last team formed in the ARL were the focus of this study. This diversity of experience with the collaborative action research model made me, in collaboration with the coordinator of the ARL, choose to work with them. The choice of choosing to work with the team that had the most experience with the collaborative action research model and one of the teams that had the least experience facilitated an understanding of the impact of time and experience with the model on change in the participants. Also, working with the two teams made it possible for me to understand the uniqueness of each team, their group dynamics and the change process that they go through while doing collaborative action research.

**Team One**

Team One began its activities in the fall of 1995. Its members were Michelle Harris, Andrew Johnson and Lisa Wolf.

Michelle was a Science teacher. She was Caucasian and had been teaching for ten years. She started working at Park High School in the fall of 1991. She was doing her action research in her freshmen “Biology” Level 2 class. Michelle completed her M.A. in Curriculum and Instruction in 1996.

Andrew Johnson was a History teacher. He had been teaching for eight years. All his teaching experience had been in Park High School. He was also Caucasian. He had an M.A. in African American Studies. His work with action research was being done mainly in the “World History to 1500” course that he taught for freshmen.

Lisa Wolf taught mathematics. She was Caucasian and had been in Park High School for five years of her seven-years of teaching experience. Her M.A. was in Curriculum and Instruction, with an ESL endorsement. She had elected the Geometry level 2 that was taught to freshmen as her action research course. Lisa and Michelle were working as facilitators of the process of Team Five.
The teams’ focus for inquiry did not remain exactly the same since the beginning of the ARL. In their first year, they decided to work with project-based learning as their common focus for inquiry. As they put their projects in practice they realized that for projects to be successful and contribute to student learning there should be a comprehensive and effective assessment system. Assessment then became part of the action research focus of the group during the second year. In the following year, assessment became a significant part of the team’s experimenting. The assessment tools created in the second year were refined and new ones were created. In the year of the study, the team was putting their effort into reporting out and publishing their work, as well as continuing with their goal of working with projects and assessment.

Team Five

Team Five started its work in the fall of 1998. Sandra Glover, David McCarthy and Robert Smith were the members of this new team.

Robert Smith taught math at Park High School. He was Caucasian. Robert had been at Park High School for 13 years and his teaching experience amounted to 24 years. He had a M.S. in Mathematics Education + 49 hours and was certified to teach High School Mathematics. He chose the Analysis course, which he taught to juniors and seniors, as his action research course.

Sandra Glover was a science teacher. She was also Caucasian. Sandra had an M.S. in Biology. Sandra had been teaching for 14 years overall and had been working at Park High School for six years. She was doing her inquiry in a level 2 Biology course that she taught to sophomores.

David McCarthy was a Caucasian English teacher. He had been in the school for 12 years and his total work experience was 13 years. He was teaching freshmen English and his work with action research was being done in these classes. David had a B.A. in Communication Arts. He had an M.A. in English Literature and was certified to teach English, Speech and Russian.

Team Five was focusing their inquiry on making students feel like contributing members of what happened in the classroom. They believed that when students have their skills and talents used in the classroom, they feel useful and important, getting more involved and having their learning fostered as a consequence.
Data Collection

Data for this research were collected over a period of three months. It consisted of open-ended and semi-structured interviews, meetings’ observations and analysis of documents produced by the teams.

Interviews

Interviews were the primary data source of this research. A first interview was conducted with William Freedman – assistant principal of Park High School and creator of the ARL - to negotiate access to the school and to the ARL teams. During this interview I was also introduced to some of the basic principles of the ARL and how it started its activities in the fall of 1995.

Two interviews were conducted with each teacher of the two teams, for a total of twelve interviews. These interviews were conducted in two cycles. The first interview was an open-ended interview that lasted about one hour. In this interview participants were requested to talk about the sense they were making of their experience with the ARL and what they thought they had learned from engaging in such an activity. In addition, this first interview focused on each teacher’s perceived change in his/her practice as a result of doing collaborative action research. Teachers’ perception of what were the major factors in the ARL that influenced changes in their teaching and learning, paying special attention to the impact of experience with the model and collaboration, were the focus of this first interview, as well. All teachers’ interviews were audiotaped and transcribed verbatim.

The second interview was semi-structured and lasted between 45 minutes and one hour. During this interview, teachers were questioned teachers about the themes that were emerging in the analysis as means to check my understanding of what I was learning and to contribute to a triangulation of the data. These interviews also provided a deeper understanding of teachers’ learning, the change in their practices as well as those of the ARL that were beneficial to their learning. These interviews were also audiotaped and transcribed verbatim.

Discussions with teachers through informal conversations in meetings or other situations were also used as means to collect data. These data were registered as field notes in an anecdotal log.
Toward the end of the study an interview with William Freedman proved to be needed. In this interview, I talked with him about the ARL as a means to further check the data and the understandings I had. Also, I wanted to understand a little bit more about what was the place of the ARL in relation to other staff development activities provided to the faculty and the relationship between the ARL teams and the rest of the faculty.

**Observations**

Two kinds of observations contributed to the data gathering for this research: classroom observations and meetings observations. In the meetings of each of the teams, I worked towards assuming the role of a participant observer. During these meetings I tried to participate in the activities of the group and observe their process at the same time.

Data gathered from meetings and classroom observations were recorded as field notes in an anecdotal log. Parts of the second meeting of Team Five were audiotaped. As I felt that audiotaping Team One’s meetings would have a major impact on their work and on what they talked, none of Team One’s meetings were audiotaped. Only anecdotal records were made from this team’s meetings.

**Classroom observations**

I observed one class of each of the members of teams one and five, with the exception of Lisa’s class, for a total of five classroom observations. The focus of attention in these observations arose from the specific kind of study that was being conducted by each of the groups and from the themes that arose from the teacher’s statements in the interviews and from group meetings. Classroom observations were used to further validate information from the interviews about teachers’ learning and changing practices as a result of the use of collaborative action research. These data were registered as field notes in an anecdotal log.

**Meetings’ observations**

Two monthly meetings of each of the two teams groups were observed, for a total of four meetings. The focus of such observations were the collaboration among teachers, themes discussed, insights that happened through discussions and how the work of the group was organized.
In addition to the observation of Team Five’s formal and informal meetings, the meeting with the rest of the faculty in which they shared their learning was also observed. The relationship among team members and the participants of the meeting was the focus of this observation.

**Review of Documents Produced by Each of the Teams**

Documents produced by each of the groups as well by individual teachers such as minutes, reports and instructional materials were used as sources of data.

The analysis of these documents was one more data source in the search for an overlapping of information.

**Procedures for Data Analysis**

The process of analysis of data started as soon as the first interviews were done and continued as data for the study were gathered. Taking the interviews as the primary data source, a thematic analysis was carried out after the first interview with each teacher. Data from the first interviews were organized by emerging themes. The analysis of the meetings’ observations and classroom observations were used to check the validity of these themes and revise them as needed.

As more data were gathered and analyzed, patterns started to emerge across teachers, meetings and documents. Every new set of data that I had was used to refine these patterns turning them into recurrent themes. Also, after each analysis of data that I did, new perspectives were added and influenced my next data collection activity.

After I had done the first interview, observed the two meetings, and read the documents I re-read all interview transcripts, documents and field notes which I used to deepen my understanding of the patterns that I saw emerging. In this interview I also shared with the participants my understandings and the themes that I saw emerging. This provided triangulation of my understandings and improved the internal validity of the study.

After the last interviews were transcribed I used this second cycle of data analysis to check the themes that I had before the interview. This last analysis made it clear that some of the themes that I had before the interview were on target as far as teachers’ understanding of them while
some others needed to be revised. Again, I re-read all data that I had, my notes about them and the themes that I had at the time. From this process, I devised what I called the final themes.

With the final themes and the passages that supported them, I started to look for the best way to represent the overall theme of what I learned doing this case study. This was a difficult task. In what seems to be a common characteristic of qualitative studies I had lots of data, learning and understandings and would have to make the decision of choosing only some of them to be able to tell my story. With this in mind I went in search of the most important story that needed to be told. What I chose to tell is what I thought would most contribute to a new and deeper understanding of collaborative action research.

**Data Analysis and Interpretation**

When I first decided to study the Action Research Laboratory (ARL) at Park High School I thought I would be studying an approach to doing staff development and how it had an impact on teachers’ learning and practice. Certainly, I learned a lot about these two inquiries.

Teachers had their learning impacted by participating in the ARL. Though each teacher made sense of their experience in a different way, generally, they became more aware of their teaching and also of their students’ learning. As they experimented with new approaches in their classrooms they learned what they thought to be better and improved ways of teaching and fostering students’ learning. They also became more reflective about their work and thought more about what they did in their classrooms and the reasons for doing them. A sense that teaching has to be based in a constant movement for improvement was reinforced. All of the teachers I worked with had this disposition towards learning and change. However, the experience with action research further developed the sense that there would always be room for improvement. In addition, teachers became more willing to try new ideas in their teaching, moving toward more student-centered approaches.

The opportunities provided for teachers by means of the ARL were consistent with socio-constructivist principles. By doing collaborative action research teachers engaged in concrete tasks of teaching, assessment, observation, and reflection that illuminated their processes of learning and development. The work with the ARL was based in inquiry, reflection and experimentation. These features made learning meaningful and grounded in teachers’ classroom
and work with students. The opportunity for building ownership that the model provided for teachers made the ARL a process that was participant-driven and suited to teachers’ needs. By respecting teachers’ understandings and pace of learning the ARL provided them with enough time and sustained support for their inquiry, reflection and learning. Finally, the fact that the ARL was collaborative made it a forum in which educators could share their knowledge, support each other’s learning and contribute to the formation and sustaining of collegial relationships.

Several traits of the ARL model influenced teachers’ learning and teaching. Among them were the ownership that teachers had of their action research and group processes; the time they set aside to do their research; the support that they received from the school and team members to take risks and try new things; the balance between structure and flexibility that the model provided.

All of these traits were conducive for learning. Nevertheless, a key element of the ARL was collaboration, and this had a major impact on how teachers went about doing their research and how they learned and changed their teaching practices. Because of this I made the relationships established by means of the ARL the focus of my data analysis.

The structural organization of the ARL extended the meaning of collaboration beyond the work of group members. A comprehensive system of connections was set up by the numerous activities that made part of the ARL. The ARL not only broke down the walls of the classroom. Teachers who participated in the ARL became part of a system that had multiple layers of social networking. The learning that each teacher had from participating in the ARL was not only a result of his/her collaboration with members of the group or of his/her work with students. It was a result of multiple interactions that happened whenever they met with other people.

Indeed, teachers’ learning received a major impact from his/her collaboration with students and ARL team members. Yet, other relationships influenced the learning that occurred as a consequence of being engaged in the ARL. The school administration impacted teachers’ learning by giving them the opportunity of participating in the ARL and by offering a supportive environment for learning to occur. In addition, faculty members affected teachers’ learning because of the feedback they gave to ARL participants in formal and informal meetings. ARL groups impacted each other. Older groups’ experience had an impact on how newer groups worked and how they learned. By participating in conferences and visiting other sites teachers were put in contact with a broader educational community that had an impact on what they
learned and on how they organized their action research. Figure 1 shows how each formal activity of the ARL put teachers in contact with different layers of interactive relationships. It is important to note that these were *interactive relationships*; at the same time that ARL teachers or teams were influenced by the relationships they established, they also had an impact on them.

**Figure 1**

**Some relationships established by the ARL features**

<table>
<thead>
<tr>
<th>ARL features</th>
<th>Relationship established</th>
</tr>
</thead>
<tbody>
<tr>
<td>Action research in one’s classroom</td>
<td>Teacher to students</td>
</tr>
<tr>
<td>Interdisciplinary team membership</td>
<td>Teacher to teacher, Teacher to different departments, Department to department</td>
</tr>
<tr>
<td>Facilitation of Team Five by Team One</td>
<td>Teacher to teacher, ARL group to ARL group</td>
</tr>
<tr>
<td>Critical Friends’ Luncheon</td>
<td>ARL to faculty members</td>
</tr>
<tr>
<td>Assistant principal as the founder of ARL</td>
<td>Administration to teacher, Administration to ARL</td>
</tr>
<tr>
<td>Facilitation by assistant principal of Team One</td>
<td>Administration to teacher, Administration to ARL</td>
</tr>
<tr>
<td>Going to conferences</td>
<td>ARL member to ARL member, Teacher to researchers and experts, ARL group to educators in other schools and districts</td>
</tr>
<tr>
<td>Doing research on what experts say about the group’s inquiry question</td>
<td>Teacher to researchers and experts</td>
</tr>
<tr>
<td>Reporting results of action research in journals or in conferences</td>
<td>Teacher to broader educational community</td>
</tr>
</tbody>
</table>

A network of relationships could better represent what happened. This representation was suggested by Fritjot Kapra (1999) to describe relationships in nature and human communities. Figure 2 describes this network of connections.
The relationships established by means of this web were reciprocal with each element in the web impacting and being impacted by the others. All these relationships happened at the same time due to the systemic nature of the web initiated by the ARL. Even though they were separated to analyze the data, they all inter-related at the same time. The idea of the web of relationships is very similar to a natural system in which multiple relationships happen simultaneously supporting each other. Separating them was important to have a deeper understanding of each element. However, it is important to always bring the elements back together to the relational nature of their lives and development. Not considering this relationship would take away an important part that could help in understanding how each individual affected and was affected by the whole system.

Despite the fact that the ARL web of relationships extended in unplanned directions and that relationships were often unpredictable, there were some trends in how they were established and what happened as a result. Trust and bonding proved to be essential elements for learning to occur in the relationships established by the ARL. The more trust and bonding were present in relationships the more learning and change happened. All relationships were reciprocal. I could
not find an element in any of the relationships that I studied that had not been affected by being in the web. In addition, as all human relationships, the ARL web carried with itself the possibility of learning and improvement. It also carried within itself the possibility of tensions, which invariably occurred in all the relationships studied. Tensions may be the price to pay for the enriched learning opportunities that arise from the contact between different people and groups.

Though not all the possible relationships could be controlled or planned in advance it is important to stress that collaboration must be planned in some way. Only asking teachers to collaborate without giving them the support and structure to do so would not have brought all the possible benefits of collaboration. Each activity in the ARL was set up to establish one important relationship that could expand teachers’ possibilities of learning and changing their practices. It was this structure for multiple reciprocal relationships to happen that made the ARL so interesting and significant as a staff development process.

**General Conclusions**

Providing teachers with meaningful opportunities for learning was at the heart of the ARL. Its structure highlighted teachers as constructors of knowledge. Several elements of the ARL proved to be essential for teachers’ learning to happen: the *ownership of the process, a safe environment to take risks, trust, bonding, reciprocity, time to engage in learning, collegiality, the use of inter-disciplinary teams*. I came to realize that all these elements should be taken in consideration and should be included when planning staff development opportunities for teachers.

The ARL at Park High School was successful in providing a rich environment for teachers to learn. Teachers in the ARL felt empowered by the possibility of taking charge of their own learning. The very nature of action research made learning suited to teachers’ practical inquiries and needs. Learning was grounded in teachers’ practice and in the sense they made of it. The multiple relationships established by the model not only acknowledged that learning is relational. They also provided teachers with an extended range of possibilities for learning. Trust, bonding, reciprocity were central to these relationships.

Finally, the recognition that teachers can and have to decide what they should study and change in the classroom was very clear in ARL. I came to realize that when administrators give
teachers the opportunity to have a voice in what they do for staff development, learning is fostered and becomes more meaningful, involving and suited to one’s needs. I have no doubt that the trust Park High School was placing on ARL teachers as directors of their own learning is something that should be present in most, if not all, staff development programs.

**Limitations of the Study**

Certainly, there were limitations to this study. The first one was that the research while done on an almost full-time basis was carried out over a period of only three months. I was not present for the beginning of the work of Team Five. In addition, I was not able to be with Team Five after they tried out their ideas in their classrooms. More time would also be necessary to have a fuller access to teachers’ thinking and to the intricate processes involved in doing collaborative action research. The period for establishing rapport with the participants and also gaining their trust took longer than I expected, especially with Team One. More time would probably have helped in making me less of an intruder.

Only two of the six groups that make up the ARL were studied. This certainly helped in developing a deeper understanding of the processes involved in doing action research and gave me access to the uniqueness of each teacher’s experience with the ARL. However, it limits the generalization of conclusions about the impact of the ARL as a model across the six teams. In this way the conclusions are related to these two specific groups in Park High School.

**Suggested Areas for Further Research**

Further research could shed even more light on the understanding of the relational nature of learning that happened as a consequence of the ARL model. Not all the elements in the web of relationships were studied by the present study. It would be interesting to have interviews with teachers who did not belong to the ARL to have an understanding of what kind of impact it had on their learning and teaching practice. The same would be important to be done with students. As staff development is becoming more result-oriented, taking a look at how the ARL work has an impact on student learning would be an important contribution to the understanding of the possibilities of the ARL as a program that improves students’ learning. Another possible
research area could be a longitudinal study of an ARL team to find out how relationships and learning are constructed over the course of the years. Finally, this study was conducted in a suburban upper-middle class area. It would be important and meaningful to study how the model works in different socio-economic and cultural settings.

References

