

**Graduate Student
SYMPOSIUM**

**Selected Papers*
Vol. 4
2007–2008**

**Queen's University
Faculty of Education**



Susan Catlin Editor

**Rebecca Luce-Kapler
Managing Editor**

THE PERCEIVED BENEFITS OF INITIATING A PROFESSIONAL LEARNING COMMUNITY OF TEACHERS IN ONE CARIBBEAN SCHOOL

Jasmattie Yamraj

ABSTRACT

This study investigated the complexities involved in initiating a professional learning community (PLC) of teachers in a school that had no familiarity with PLCs. This 12-week qualitative case-study included seven teachers from two subject areas in a secondary school in the English-speaking Caribbean who participated in weekly meetings and individual interviews. This paper reports on benefits such as saving time with subject integration, sharing ideas and approaches, professional development, providing a safe venue for venting their concerns and frustrations, and increased socialization among teachers. This PLC also provides an important forum for teachers to dialogue about teaching and learning.

INTRODUCTION

This paper examines one part of a study on the complexities and challenges of initiating a professional learning community (PLC) of teachers. I report on one of the seven research questions in the study: What benefits do teachers perceive in initiating a professional learning community of teachers? This paper presents relevant literature to this area of research as well as the methods used in data collection. The analyzed data is presented based on themes that emerged from the data. Finally, I provide some conclusions relevant to this research question and the perceived benefits by the participants in the study.

RELEVANT LITERATURE

Hord (1997) defines professional learning communities as schools in which professionals continually seek and share learning to increase their effectiveness for students learning. Basic features of a PLC include shared norms (Kruse, Louis, & Bryk, 1995; Louis & Marks, 1996), reflective dialogue (Bolam et al., 2005; Kruse et al., 1995), deprivatized or shared practice (Hipp & Huffman, 2003; Louis et al., 1996), collective focus on student

learning (Bolam et al., 2005; Hord et al., 2000), collaboration, networks and partnerships, inclusive membership, mutual respect and trust, and continuous learners (Bolam et al., 2005; Huffman & Hipp, 2003).

The conditions for creating and sustaining a community of professional learners of teachers include physical conditions such as time to meet (Little, 2003; Louis et al., 1996), physical proximity (Glazer et al., 2004; Kruse et al., 1995), small school size (Bryk et al., 1999), and communication structures (Kruse et al., 1995). Human and social conditions, such as shared leadership, trust, empowerment of teachers, and socialization, are also important (Bryk et al., 1999; Hord et al., 2000; Louis et al., 1996). Socialization encompasses agreed upon rules (Glazer et al., 2004) and collaborative group work (Little, 2003). In addition, specialized language within these groups (Little, 2003) and diverse contributions by members of the community are also considered to be part of the socialization process in community building (Grossman et al., 2001).

Implications for Professional Learning Communities

Teachers play important roles in creating and sustaining professional learning in schools. They become empowered by becoming continuous learners and competent collaborators through dialogue and classroom observations. They assume teacher leadership positions to successfully work in groups to meet the needs of their students through authentic pedagogy and team teaching.

Teachers have an important role in the lives of students. Teachers have the most direct, sustained contact with students and considerable control over what is taught and over the climate for learning. Thus improving teachers' knowledge, skills, and dispositions through professional development is a critical step in improving student achievement (King & Newmann, 2000, 2001). In previous research, this helped to reinforce teachers' individual and collective commitment to their work and the value they placed on their collaborative inquiry.

There are benefits for both teachers and students when schools restructure to create learning communities of teachers. In a study of professional development in collaborative communities, Butler, Lauscher, Jarvis-Selinger, and Beckingham (2004) highlighted benefits of a collaborative learning community. These

included opportunities to share ideas and solve problems with colleagues. Teachers also valued expertise from other members by welcoming advice from colleagues or by asking for help. Another benefit was observing authentic activity as a means for understanding instructional goals by identifying best practices and enacting changes in their own classrooms and reflecting on outcomes and adapting approaches.

Teacher learning is most likely to occur when teachers concentrate on instruction and student outcomes. This is possible when teachers have sustained opportunities to study, experiment with, and receive purposeful feedback from their colleagues. In addition, teacher learning is enhanced when teachers collaborate with professional peers and when teachers have some control over their own professional development (King & Newmann, 2000). "While individual teacher learning is the foundation of improved classroom practice, teachers must also learn to exercise their individual knowledge, skills, and disposition to advance the collective work of the school" (p. 577).

PLCs help to reduce isolation among teachers. Teaching has been characterized as a lonely profession (Hobson, 2001) and has been described as one of the most private acts for adults (DuFour & Eaker, 1998). Teachers generally work out of sight from one another and they usually plan and prepare their lessons and materials on their own. Furthermore, teachers struggle alone to solve most of their instructional, curricular, and management issues (Little, 1987). In her study of collaborative departments, Little (1987) found that teachers report one benefit of collegial work to be "breaking the isolation of the classroom" (p. 494). She also found that collaboration produced a variety of ideas, materials, and methods as well as a collective ability to generate higher-quality solutions to problems.

One way to effectively reduce teacher isolation is through dialogue but there are many other benefits to talking to colleagues about practice. Dana and Yendol-Silva (2003) in their article on teacher collaboration concluded that collaboration was important for several reasons: Teachers talk all the time to students, other teachers, administrators, and parents. However, dialogue with colleagues heightens an awareness of knowledge about teaching and what a teacher knows becomes visible to their colleagues. In addition, this dialogue may also force teachers to question

assumptions about their own practices. The benefit of talking to colleagues is to generate possible alternatives to practice, provide different interpretations, and to gain perspective as inquiry unfolds about teaching (Dana & Yendol-Silva, 2003).

Collaborative work cultures help to reduce professional isolation of teachers and allow for sharing of successful practices and provision of support (Fullan, 1991) as well as multiple sources of knowledge and expertise (Morrissey, 2000). Teachers working together have the potential to raise morale and enthusiasm (Lee et al., 1995). This collaboration may also increase the likelihood of experimentation among teachers (see Rozenholtz, 1989). "Despite the overwhelming evidence of the benefits of a collaborative culture, the tradition of teacher isolation continues to pose a formidable barrier to those hoping to implement PLC concepts in their schools" (DuFour, Eaker, & DuFour, 2005, p. 18).

There is no simple checklist or recipe to guide the creation of a PLC (Eaker, DuFour, & DuFour, 2002; Little, 2000, as cited in Seashore, Anderson, & Riedel, 2003). Creating and sustaining PLCs will not be an easy task and it requires hard work and commitment. Likewise, establishing a PLC within a school does not occur quickly or spontaneously. Professional learning communities are essentially reform strategies that require changes within schools; however, change, especially educational change, is gradual (Fullan, 2001) and not immediate (Court, 1999; Cowan & Capers, 2000). Therefore, creating and sustaining a PLC will take time to develop and flourish as it works to reduce teacher isolation and improve student achievement through improved teacher practice.

Teachers are not the only ones to benefit when PLCs exist. The ultimate goal of the PLC is to improve student achievement and thus the focus is on students' learning. This was illustrated in a school restructuring study reported by Lee et al. (1995). In these restructured or organic schools, students benefited more than in traditional schools. They displayed increased learning that was distributed more equitably in smaller high schools; larger academic gains in math, science, history, and reading than in traditional schools; and smaller achievement gaps between students from different backgrounds. Other benefits of these restructured schools included a lower drop-out rate and fewer

missed classes (Lee et al., 1995). These benefits provide reasons for teachers to strive for PLCs.

Ultimately, PLCs provide many benefits for schools, especially for students and teachers. Challenges are immense and include leader and collegial support, resources, including finances and time, and effort. Although PLCs are demanding, one of the key features of sustaining a PLC is to integrate activities into daily routines to avoid extra duties for overworked teachers. The most important focus of PLCs should be students' outcomes through successful and routine reflection and collaboration among staff in schools. However, PLCs are also important to reduce isolation among teachers (Barlow, 2005) and to improve student achievement (Lee & Smith, 1994; Lee et al., 1995).

PROCEDURE

This 12-week study commenced in January 2007 and utilized a qualitative case-study approach. To increase the credibility of the study, several data sources were utilized for triangulation of methods and sources (Patton, 2002). These included I I weekly group meetings with exit comments, journal entries, and four individual interviews. Major data sources were taperecorded and transcribed verbatim. The initial meetings were facilitated by myself and thereafter by individual teachers who were able to share many experiences about teaching and learning. Group sessions varied from discussions to demonstrations and PowerPoint presentations. Seven full-time teachers from science and geography departments in a secondary school in the English-speaking Caribbean participated in the study. This school's layout is one in which the buildings are spread out across a large campus and departments are housed in the same building or in the same area, but each department is separate.

Data was organized using Atlas.ti software program. I began with open coding and later collapsed the codes into families and themes which gave meaning to the participants' experiences as expressed through conversations in meetings and individual interviews.

RESULTS

Participating teachers reported many benefits from their experiences during the 12 weeks of collaboration, and this paper

describes and interprets the various benefits the participants experienced in the professional learning community. The benefits are described in terms of practical aspects, social aspects, and positive changes made by teachers. The practical aspects of teaching and learning included saving time with subject integration, sharing ideas and approaches, and professional development. The social aspects of teaching and learning included a venue for sharing their concerns and frustrations, a level of comfort, and increased socialization among teachers. A final indicator of the benefits for teachers involved the positive changes in their attitudes and teaching practice.

Practical Aspects of Teaching and Learning

In the interviews and meetings, teachers described a major benefit of the PLC as saving time, especially through sharing ideas, techniques, and worksheets. Teachers also came to realize that by integrating topics from geography and science, they would not need to risk boring their students by re-teaching material that had already been taught well in another course. The PLC was seen as professional development for teaching and learning and thus was appreciated by these teachers.

Saving time. The cry of many teachers is that there is never enough time to do their work with students and adequately address the many topics within the curriculum. When asked about benefits, teachers indicated that saving time was a huge potential benefit for them. One teacher said: "If we coordinate our activities together, then we can save a lot of time and move more smoothly" (Interview 3:Geoff). One way to save time is to share the workload, perhaps by collaborating in the preparation of student worksheets. Geoff described this process:

You have to prepare a worksheet every week and there are seven of us in the department and all seven of us will prepare a different worksheet. We could just switch around worksheets and then it's once in seven weeks to prepare. (Interview 3:Geoff)

Teachers often work alone and do a lot more work by themselves than they would if they collaborated. In an interview, Geoff spoke about the impact the PLC had on him as a teacher: "I guess it has allowed me to see that we really waste a lot of time" (Interview 3:Geoff). When I asked what he meant, he replied:

Doing our stuff in isolation. It's really a waste of time to be doing the same thing. It's like re-inventing the wheel that has already been turning. [Beginning teachers] complain there isn't much for a teacher, not much pay, or time. Time is a major thing when you go home and you have family time. I feel badly sometimes that I am doing stuff related to school but maybe I won't have to do all of that if I were working with two or three other people. (Interview 3:Geoff)

Wasted time for teachers affects their personal lives as it interferes with family time. This was apparent in Geoff's previous statement about wasting time by teaching material that has been taught in other courses.

The benefit of saving time through collaboration in a PLC of teachers was triangulated by comparing the comments made by the teachers in the weekly group meetings with those made in their individual interviews. Katie stated that through subject integration and collaboration, time will be "cut down and reduced" (Meeting 4:Katie). In the same meeting, Geoff suggested that: "teachers complain a lot about being over worked and burned out, maybe because we are just duplicating. If we just share, you know a lot of duplication will be cut out. We are working double and triple when it's not necessary" (Meeting 4:Geoff). Later, Kolin shared the same sentiments: "You don't have to duplicate" (Meeting 4:Kolin) and this was reinforced by Geoff who said: "and you save time" (Meeting 4:Geoff). Clearly, saving time was seen as a major benefit by these teachers.

There were other time-saving benefits, especially for the geography department, by allowing the science teachers to teach specific topics. Teachers would gain time to teach other topics and possibly teach them in greater depth. Kolin, a geography teacher, explained this process:

If science does plate tectonics, that's one less topic we have to teach. It would save time and allow us to go into some other things in depth. There are some concepts we have to fly over, even though the students don't properly understand them. We can spend more time on them, and I see that as being more efficient. (Meeting 4:Kolin)

Over the 12 weeks, the teachers continued to identify potential ways of saving time. In another discussion about reduced

duplication and curricular overlap, one teacher noted that because they teach volcanoes and earthquakes in second form geography class, "by the time [students] get to fifth form, science doesn't really have to teach [volcanoes and earthquakes]. They can re-assess or review what we would have covered already" (Meeting 8:Kolin). Through subject integration, the teachers could see many benefits, including saving time and resources (Matt). Teachers in this group would welcome anything that would save them time, as time is a scarce commodity in this school, as in most schools. However, the constraints of completing the syllabus for the Caribbean Examination Council (CXC) external examinations also contribute to the necessity to maximize use of time.

Subject integration and saving time. One other way of saving time involved subject integration and overlap of content between the syllabi. If teachers avoid re-teaching topics, time could be saved. However, this would require some collaborative planning by the teachers involved. This matter was raised in the individual interviews. Matt said that the PLC "shows how subjects can be integrated to save time, that's one of the major advantages, major benefits. Also, team teaching could be utilized more effectively on a regular basis where topics and the information have a positive correlation" (Interview 3:Matt). Kolin commented that "for one thing, if we could work together, we can sit down and actually do some more of [the planning sessions], we can save some time and take some strain and stress off the students by avoiding repetition of content" (Interview 3:Kolin).

In addition, teachers mentioned the benefits of the PLC through subject integration as a way of creating more enlightening experiences for them. Khyle felt enlightened by the PLC discussions, seeing both reduced work for teachers and better learning for students:

This has been good, enlightening. I have been seeing where it's possible to make the work less complicated and more interesting. For instance, there are certain topics that we have examined where we have noticed that working as a team, working with the science teachers, we could decrease our workload and also find more meaningful ways of putting across the information. (Interview 2:Khyle)

Similarly, this sharing of work across subject areas would mean reducing each teacher's workload somewhat. Geoff highlighted this possibility:

For one thing, I think it has been, I would say an eyeopener, especially when we look at the possibilities of sharing the work with another department and cutting everybody's workload basically. Because in the teaching service we always have too much or so we say. Sometimes we do too much because we are not doing it right. We are working hard but not smart. (Interview 2:Geoff)

On this topic, there was a possibility of beneficial subject integration with the hopes of saving time through sharing workloads.

Sharing ideas and approaches. Another benefit involved the various approaches, techniques and ideas shared within the group. In the PLC forum for teachers to discuss and share ideas about teaching and learning, the idea of sharing was highlighted throughout the 12 weeks. The PLC provided help to those who needed it while allowing others to share knowledge and experiences with their colleagues. This sharing of ideas and techniques motivated some teachers by providing a sense of worth in the school. Geoff spoke of the positive effects of sharing with others:

[For] the person that you seek that help from, you are motivating that person: "I have some usefulness around here, I can actually assist another person." That person becomes motivated and gets better; perhaps they feel that their thing is needed. So the entire body would grow, both the one seeking and the one from whom it was sought. (Interview 3:Geoff)

Teachers also noted that sharing ideas collectively provided more options for teachers to use in different teaching or learning situations. Thus they were contributing to a pool of ideas and approaches to enhance their classrooms. In the meeting with the administrators, Matt explained to Khyle that he might know of limited ways to deal with a student, but if there are more teachers, they too can contribute to the pool of ideas on how to deal with that student.

Furthermore, the PLC seemed to motivate teachers to be learners again and to share ideas to create that level of professional

discussion that is necessary for some teachers. As Geoff said, he needed that "escape" and needed to discuss education on a professional level and learn what others were doing. He seemed motivated to try new things in the classroom to help the students:

I have also developed a little more of a drive to want to read a little more and to want to speak a little more with someone else. . As we go through it, after the first few weeks, I really want to see this [PLC] moving ahead. I think that has been one of the areas that has helped me to open up a little more in terms of wanting to speak about it and to share the ideas with others and even within ourselves. With or without you, Ms. Yamraj, I would want to see this thing go on. I think it has pushed me to that point where I have become a little more passionate in that sense. That's the benefit. (Meeting 12:Geoff)

Teachers highlighted the opportunity to bounce ideas off each other as another benefit of participating in a PLC of teachers. This bouncing of ideas provided immediate feedback that allowed teachers to try new things and to think more about their approaches. It also provided some information about specific students and their learning styles that will help teachers to tailor their teaching to incorporate many learning styles and techniques to help more of their students. In describing the benefits of collaboration in the PLC, Matt said:

So that's where the collaborative approach could give us different methods, more current methods, because there are some people on the cutting edge of education. There are others like me who might be a little in the dark, so if you could bounce ideas of how to approach instruction to suit the kids that you are working with, then implementing such a program might work. (Meeting 4:Matt)

When I asked Geoff what he would like to see changed in the group, he responded by saying "Nothing. I think you set it up well and I like the idea of giving individuals the opportunity to present. Again, like I said, new ideas will bounce from each person" (Interview 2:Geoff). He liked the fact that each teacher facilitated a meeting and their approaches were all different. When I asked in a later interview about the benefits from the PLC, Geoff said:

The fact that we can bounce ideas off of each other, I think it's opening my own mind to new ideas, but also I know that there are others that you can rely on as a source of additional help knowing that I have not approached the geography department formally, knowing that avenue is there. [I can] go there and chat with Katie or any of the others. (Interview 3:Geoff)

The experiences shared were not limited to experiences at the school. Some teachers shared their practice from previous schools. Many conversations reflected this sharing of ideas, even when teachers were presenting to the group. Some participants explained that in previous schools they met regularly in groups with a common interest, whether by subject or grade, to discuss the curriculum and teaching. These were positive practices that they shared with this PLC group. In the first meeting, teachers were sharing their experiences about collaboration with each other and Katie said:

But in my country, just before I came here, once per month, all the teachers teaching the same subjects in a region . all the geography teachers would meet, all the science teachers would meet, all the primary teachers who teach primary I would meet and then they just sit and chat and discuss things and a little snack is provided for them and their travel is paid, and you get a lot out of those sessions because everybody knows what they are doing. In [this school], we are meeting deadlines, and in one weekend we have a million deadlines. (Meeting 1 .•Katie)

Jamie, also a teacher who had come from another school, talked about cross-departmental planning sessions for teams of teachers at her previous school:

Coming from [the USA], we have that same thing. We had to work across the board. In the states we were set up as teams. It would have five teachers to a team, like mathematics, science, geography and so forth and so on. And that was actually coming from administration, we had to do it. (Meeting 1 :Jamie)

In addition to discussing collaboration in other schools, teachers shared practical ideas from their time in other schools. This sharing of success stories showed what had worked for these

teachers in the past. Geoff shared the following experience with the group:

I used to teach geography and we built weather stations. They could use lots of things from home, cups to make the rain gauge, anemometer to measure the wind speed and so on. If you have to do topography, we would make a clay model that was a whole lot better than reading a flat book. It was easier with the contour lines. I find many students would benefit a lot more with the practical. (Meeting 3:Geoff)

Katie, a veteran teacher, shared many stories about her teaching experiences prior to coming to this school. Her experience in one school dominated the experiences she shared with the group. She had many positive things to say about the level of professionalism and camaraderie at a private school where she had taught. Katie highlighted their routine and the need for a space to talk and share ideas with colleagues. These features are similar to those that were being fostered in this PLC, especially the space to share with colleagues. She described her experiences:

I say [staff meetings at this school] lack professionalism; thank the Lord I was teaching at a catholic school in [my country] and it was my best ever in teaching. They were so professional, everyday at 10:30 they had pastry and a cup of coffee or drink and you can take what you wanted, speak to staff members and in no time you have people asking questions. (Meeting 4:Katie)

And the staffroom had the biggest table that I have ever seen at any high school. It took up most of the staffroom, but most of the teachers could sit around it and then you had seats on the sides. . In those little gettogethers [every morning] we talked and shared ideas too. (Meeting 10:Katie)

Katie summarized the benefits of saving time; she said that when "people share ideas, activities, common things that can reduce their workload rather than Geoff planning something and you plan something and everybody plan something differently. We all come together and we do it" (Meeting 4:Katie).

Participants perceived that sharing ideas and techniques resulted in lessening teaching loads. One of the teachers had a strong conviction about the benefits of sharing work and its

advantages, especially that of lightening their teaching loads. She hoped that her teachers would work together to help each other with their teaching techniques. To summarize the potential power of sharing ideas and techniques, thus saving of time and reducing work, Katie said in a meeting:

You see, Matt, I want to get to that level, where a head can make a big difference in the lives of the teachers they supervise. I realize my weakness as a teacher and my despair; what I am a trying to do is work with my teachers so that they can feel good about being a teacher. Trying to have people share ideas, activities, common things that can reduce their workload rather than Geoff planning something and you plan something and everybody plan something differently. We all come together and we do it.
(Meeting 4:Katie)

One of the frequently mentioned goals was reducing teachers' workload in order to improve students' learning.

Professional development. All the teachers in this group indicated that they considered the PLC to be a type of professional development. When asked if they saw this PLC as professional development, they all responded positively. They all provided evidence to support this conclusion and many reported the benefits of this type of professional development. They also noted how different it was from previous professional development they have experienced. Khyle said he "definitely" saw it as professional development and went on to say:

First of all, it is professional development with a difference that is really opening up our eyes to knowledge and how knowledge is received and how knowledge is passed on, skills also. For instance, in [our] PLC, we are concentrating more on a multi-disciplinary approach to teaching which I think the world is embracing, instead of just taking out a subject and putting it by itself and teaching the students. That part of [teaching] the subjects apart from other subjects, we are moving away from. We are more now concentrating on integrating the information and this is one of the ways in which we can develop and strengthen the whole teaching profession. (Interview 2:Khyle)

One of the first-year teachers indicated having benefited from this PLC as professional development and explained how it was different than her past experiences in that it was more personal. Skye said:

Here it's professional development in that it is beneficial to our trade and what we are doing. It's different in that it's less formal. The professional development that I am usually exposed to is like it's a lesson. You listen and you have no input into what's being said. It's a lot of externally imposed [ideas] and you are there because you are told to be there. (Interview 2:Skye)

Her first-year colleague, Jamie, commented that her experiences in the PLC were similar to her past experiences in North America because they had involved small-group professional development and not the whole school. When asked about professional development, Jamie expressed her dissatisfaction with professional development in this school because she had not experienced any form of professional development, but she said that she liked the small group in this PLC and the opportunity it provided to voice her concerns while learning something about teaching and learning.

When asked if our meetings were a form of professional development, Geoff said "yes" and explained how it is different from his past professional development experiences:

Most times what you have is the entire staff at a workshop or something. There are those who take the workshop seriously or go to the workshop because they are told to do so. When you have so many people, the area that you tend to go into, let's say classroom management, there are so many discussions on classroom management that you can't shut up. But with this we are a small group to begin with. I think we can deal better with our needs. Not everybody may have the kind of situation in their classroom that they want to sit for an entire week. What they would really like to know, beginning with a small group, individual needs are met. (Interview 2:Geoff)

Matt's response provided a precise summary of the teachers' feelings about the benefits of the PLC as professional development. He reported positive results when asked about this PLC as professional development, and he emphasized the

importance of having relevant issues addressed within this professional development forum. In addition, the voluntary nature of this PLC was more appealing to Matt and a few of the other teachers. If this PLC had been mandated, it seems unlikely that attendance and participation would have matched the quality of discussions reported here. When asked about this PLC as professional development, Katie, the veteran teacher in the group, responded with a resounding "of course!" She then explained how this was different from her past professional development experiences and highlighted the small group as beneficial because it was relevant to both subject areas represented:

Sometimes you go to professional development sessions and, especially when they have the national ones where all the schools meet, it's not so effective because more or less the topics are general and then you sit there with everybody. When we do it at the school level, we request what we want to do. Doing it at this level, we know it's confined to science and geography. (Interview 2•Katie)

Furthermore, when asked if our meetings were about her own issues, she responded positively. Kolin responded similarly to the same question:

Yes, it is different in that for me it's more personal, applicable to my situation. It is not something over my head or general or may be specific to a different situation. What we are doing here is stuff that I can actually apply in my classroom. (12:Kolin; 135)

Based on these responses, relevance to their own issues seemed to be an important feature of professional development. These teachers seemed to embrace the PLC as productive professional development.

This section has described some of the practical benefits of this PLC. Saving time through subject integration and sharing work was seen as a major benefit. Sharing ideas provided a pool of ideas for teachers to choose from. It also allowed for creativity and illustrated how these participants can understand each other's perspectives and build upon what their colleagues said. These teachers also appreciated the sense of direction through group planning. The PLC was perceived as personalized professional development because it provided relevant issues and allowed for

all the participants to voice concerns and to learn from their colleagues.

Social Aspects of Teaching and Learning

Benefits of the PLC also involved social aspects of teaching and learning. The teachers referred frequently to the socializing aspect of getting to know other teachers from their own department and another department within the school. During the meetings, teachers felt a level of comfort in realizing that they were not alone in some of their experiences and they reported feeling less isolated and more "normal." One aspect that all the teachers voiced was that the PLC provided a forum for expressing their concerns and frustrations related to the quality of education in the school.

Getting to know other teachers. While discussing the weekly sessions in an interview, Skye, a first-year science teacher, made these comments:

We know we are going to come here after school and talk and that's been nice. It's nice to meet other teachers. I already knew Katie, I knew Kolin, I knew Khyle, but we never had prolonged conversations, especially not with Kolin, but Khyle I have spoken to before. But it's been nice getting to know other teachers in other departments.
(Interview 2: Skye)

In another interview, she said that she does not get that feeling of comfort from staff meetings but she gets it from the PLC meetings.

Matt also indicated a feeling of comfort with being in the PLC, partly because there are people you know: "You know the people, you feel comfortable" (Interview 2:Matt) and you speak freely in terms of the language because there is no need to be uptight about the language. This is because "you are a bit more free with the people that you know" (Interview 2:Matt). All the teachers indicated that they got to know one another more. One head of department reported that she was pleased that some of her staff were members of the PLC and noted it provided another way for them to share ideas and to discuss teaching and learning. It also provided a forum for her to get to know them better, and the same was true for the teachers in the science department as they shared similar sentiments.

Not feeling alone. The participants indicated on various occasions that they were comforted by knowing that they were not

alone in what they felt emotionally. In like manner, their experiences at the school were not isolated to them as individuals. Kolin said in an interview that one of the benefits of this PLC is that "there is a sense that you are not alone with the problems that you face in the classroom and on the job" (Interview 3:Kolin). When asked about changes in his level of isolation at the school, Matt stated, "I'm not the only one" (Interview 2:Matt;102). Similarly, Jamie, a first-year teacher, also expressed feelings that she was not the only teacher going through the same emotions. In her words, "there are other teachers following in the same footsteps" (Interview 2:Jamie).

Skye, also a first-year teacher, said in her final interview that being in the PLC had helped reduce her level of isolation: "I don't feel as isolated and I realize that I am not the only one with certain problems. And that's what I enjoy about the group because it's really nice to have that" (Interview 4:Skye). Feeling that there are others who experience the same problems provided teachers with a sense of comfort. As Skye said: "It's helped me with my attitudes, because everything I am feeling is normal. It's been a very positive experience" (Interview 2:Skye). When asked about changes in perceptions about the PLC or teaching and learning, Kolin replied:

I learned that some of the challenges, some of the things that I see as challenges are actually shared by other teachers. That's a comfort actually, because sometimes you feel odd. [Here I am] part of the community and all of us come up against the same problems. (Interview 2:K01in)

Teachers sharing concerns and frustrations. In retrospect, most of the PLC meetings provided a forum for teachers to discuss their concerns and frustrations about teaching and learning at the school. Collectively, they expressed needs to share their frustrations in a comfortable environment, such as our weekly meetings. Some teachers reported this type of sharing as a benefit of the PLC.

In his third interview, Matt was asked: "How has the PLC affected you as a teacher?" (Interview 3:Yamraj). His response was: "It has been good for me, it gives me an avenue to vent and to get the ideas from veteran and seasoned teachers" (Interview 3:Matt). In her third interview, Katie stated the benefits of venting,

particularly in the absence of action in the school: "It's a good thing because even if we cannot do anything about what's happening around the place, all the diversions, all the negative vibes, it still means that you can talk about it" (Interview 3:Katie). In her second interview, when asked about her perceptions of the PLC, Jamie responded by saying: "I looked at it as a way for teachers bringing our ideas together, helping each other out, and in a sense it gives you a time to vent" (Interview 2:Jamie).

In another interview with Jamie, I asked about how the PLC affected her as teacher and she replied:

How I look at this group is that we are going outside of the norm, in a sense, and sharing our ideas and venting. You know this is a venting process, what we are going through and what we would like to see happen in the near future. Actually, I think this group is good, because when we have staff meetings, we don't come to conclusions. . . How this group is now, again sharing ideas, venting, we started off small but we can see we are going to something bigger because administration has come in now. It's like going someplace. (Interview 3: Jamie)

Another first-year teacher, Skye, also talked about sharing frustrations, but in a controlled environment: "We do talk about our beefs and complaints, but we don't take it to that level where it becomes silly and you talk about this one isolated incident that could go on" (Interview 3: Skye). Based on these comments, teachers apparently felt satisfied with this forum to express their concerns and frustrations with teaching at this school.

In the final meeting, questions were asked to ascertain the teachers' opinions about the group. This was meant to be an evaluative process reviewing the group over the 12 weeks. When asked about what the motivation was to join and remain in the group, an uncertified teacher who was in the process of becoming certified to teach replied as follows:

It presented an opportunity to share on a professional level and, because I am not a trained teacher, I figured I could learn something from the association with people who have been trained in the field of education. Like most of the others, it provided an opportunity to vent frustrations. (Meeting I I :Kolin)

Similarly, Matt reported many benefits, including a forum to vent frustrations: "[I liked] the ability to collaborate and share ideas, learn different techniques, different classroom management strategies, and it provided an avenue for us to vent our frustrations" (Meeting 11 :Matt). Later in the same meeting, Katie said: "We spoke freely on any issue and we vented our anger quite a few times" (Meeting 11 :Katie).

Thus the participants clearly seemed to benefit on a social level. They got to know their colleagues better and the PLC provided a forum for them to express their concerns and issues. During this getting to know one another and this venting process, it seemed that teachers realized they shared similar concerns, and they did not feel alone. They expressed feelings of comfort about not being the only one to have the same experiences at the school. The next section of this paper describes the participants' changes in attitudes and teaching practice.

Changes in Attitudes and Teaching Practice

Analysis of the data revealed a number of the changes these teachers experienced in the PLC. These changes provided some indication of growth among the teachers, resulting in a shift in attitudes and practices to create better classrooms for both students and teachers. Not surprisingly, changes in attitude and changes in teaching practice appeared to be related. Changes in beliefs and changes in practices tend to go hand in hand. However, not all changes in attitude meant changes in practice, at least not immediately.

A rather abstract change seemed to occur among all the participants. Examples would include a heightened level of motivation and being more conscientious about their teaching. Some of the teachers were still in the thinking phase and had not moved on to any changes in their classrooms. Most of these abstract changes were mentioned early in the research; near the end of the study, Khyle said:

So far [the PLC] is mostly affecting the way I think and, at this point, I am getting ready to implement. I am mostly going through the thought processes at this point. Well, in terms of my own learning, it has motivated me to learn more, to be more open, to take from elsewhere and to learn new things and techniques . more open to what's out there. (Interview 3:Khyle)

When asked about changes in her teaching practice, Katie replied: "As a matter of fact, I am more conscious now with my teaching" (Interview 2:Katie). She elaborated on this statement by showing subject integration with science topics that she taught in her geography classes, as in this practical example:

I am looking for that connection [between geography and science]. I keep on targeting science because it's the same thing you are doing in your science. Why would rocks dissolve? Because the water is so powerful or because you have certain minerals that can be dissolved by water. The first thing that comes to your mind is sodium chloride. Any rocks with rock salt will dissolve. What will absorb water and why? I am looking at the science aspect of it. (Interview 4:Katie)

As mentioned before, there seemed to be a link between attitudes and practice. In some cases, this change in attitude did lead to changes in practice. For example, teachers reported a change in their practice to include more student-centred teaching and activities. Teachers claimed that, although the ideas discussed were not new, they had previously allowed their teaching to become stagnant. One teacher termed his attitude towards teaching as "self-preservation," where he just wanted to make it through the day and leave. Collectively, teachers indicated that they experienced a new level of rejuvenation with respect to their teaching. When asked if the PLC had changed their teaching practice in any way, teachers provided the following evidence:

This PLC has indeed changed the way I practice. Like I was saying in previous interviews, a lot of what was said here is not new to me. Some of them were things that I had practiced earlier, but, like Geoff, I found that the system didn't readily lend itself to some of the ideas I had. So I had switched into a mode of self-preservation. To me it was keep the students occupied and hope that the time runs out quickly so that they could go their way. I am ashamed to say I had gone into that mode and [the PLC] revived the real drive for teaching in me. This is one thing that was done. I am again willing to go the extra mile in the classroom and really take time and teach instead of having students record notes and define words and so on. (Meeting 11:Kolin)

This renewed vigour was also highlighted in an interview with Kolin:

Like I said, a renewed, I am afraid to use the word, vigour, a renewed desire to bring life to my classes. To use more hands-on methods of teaching, hands-on for the students, make the students participate, learn by doing instead of just giving notes and having them regurgitate. (Interview 4:Kolin)

Similarly, Geoff reported becoming discouraged in this school but he too experienced this sense of renewal:

Just like Kolin, as far as settling down into a mode and just staying there, this PLC has allowed me to pull out of that spiral and one of the other things too is that I have come to the point where the PLC has helped me to focus a little less on just covering content and dealing a little more with more students and even the students' issues. That is where I see myself changed in that sense. (Meeting 1 1 :Geoff)

The changes Matt experienced were about students' assessment and timely feedback. He also mentioned that his level of patience with his students had improved. In our final meeting, Matt also spoke about how his practice shifted to a more studentcentred approach:

The PLC has also changed the way I try to assess kids in terms [of feedback]; I learned from Katie that giving back papers immediately [is helpful]. I knew that before, but I never really practiced it but I have been trying to do that. Little things that I have picked up in here, classroom management issues, how to deal with the students, I have become a little more patient in terms of ignoring and leaving things alone and sharing a little laughter here and there. Just be a little less tense in the classroom, so I have learned quite a few things here, if I were to go on I might need about three more tapes. (Meeting 12;Matt)

Matt's student-centred approach to teaching also changed in terms of how he could try to involve his students more and have them take more responsibility for their own learning:

We could have the kids build their own charts and have them make posters and change our way of assessing. That's another thing I would like to see too. Give them

more hands-on. I am not saying throw the paper-and-pen test through the door, because that is what will be used to ultimately evaluate them. It's sad. You just use different methods of assessment to tap into their skills. (Meeting I I :Matt)

To be able to have students take more responsibility for their learning, the teacher should also realize that he or she needs to relinquish some control and allow for more student exploration. In an interview, Matt talked about giving up some control to his students:

In terms of being not so uptight, I am uptight in the classroom, I tend to dominate, but I [now] let the kids have more freedom in the classroom, freedom with limitations. That's from the motivation session. I don't know if my dominating was a turn off for the kids. I want to see what good that will do for me, along with other ways of motivating kids. (Interview 4:Matt) Creating student-centred classrooms requires thought about one's teaching practice and an examination of how to make lessons more interesting for the students. Khyle also expressed the shift towards more student-centred classrooms:

[The PLC] caused me to focus more on managing students and examining how they learn. I am thinking about new techniques and trying to make my lessons more interesting, more meaningful, and more relevant, and I try to see that the students may need to be taught in different ways. Basically, it had me looking more into different ways of reaching the children. I think sometimes we are so busy, just going through the days and trying to get the syllabus completed, that we don't stop to look at things like how students learn in terms of those who are more visual, those who do better at hearing, touching. So the PLC helped me to take a closer look at all these things and to stop, think, and move on. (Meeting 12:Khyle)

When asked if he had made changes in teaching practice, Khyle said "yes" and his example suggested a constructivist approach to teaching topics that were covered in science classes:

I have a second form, and I was looking at something with them and they pointed out to me that they were doing it in science. I am happy that they pointed it out to me. I didn't realize they were doing such things in science, but then

based on what we did at our meetings; I realized that we can use all this information and work together for the benefit of the students. That knowledge helped me to optimize the information that they had already received. (Interview 2:Khyle)

He further qualified this example and attributed it to the PLC by saying:

Usually, I would not have paid much attention to that, but because we are looking at this in the PLC, I had to look more keenly at the whole matter because this is one of the things that we are focusing on, so I could not just skim over that information [from the students]. (Interview 2:Khyle)

In another meeting, about one month later, Khyle mentioned using what the students learned in science to build on in geography class. Although his classroom was not well equipped for technology, it was something that he considered seriously in his class. Khyle's examples illustrate that some teachers were making changes based on our discussion of building on what students already know or have learned in other subjects and of avoiding re-teaching when possible. As reported earlier in this paper, this approach saves teaching time as well.

When asked about benefits of the PLC, Kolin said:

Another [benefit] is that a number of techniques that I had abandoned because I was discouraged, I have been motivated to re-visit and apply them in my classroom because they could be effective teaching methods and they require some more effort, yes, but the benefits are there. There are benefits [to the students of the PLC of teachers]. (Interview 3:Kolin)

Kolin also mentioned in his interview some of the things he had changed to refocus on a more student-centred teaching practice. He also developed trust between the teacher and the students with something as simple as taking the students outside again after having stopped that practice because of "bad" experiences. He went on to say that, although there are still challenges, "most of the students, the majority start to feel like you care. You are brave enough to take them outside" (Interview 3:Kolin). He said that he had "tried to become more student-friendly" and experiences in

the PLC have helped him to "get back to the stage where I really like teaching; where I want to teach" (Interview 3:K01in).

Thus the participants reported several significant changes in their attitudes towards teaching and in their personal practice. There was a clear shift to more student-centred practices with a deliberate attempt to build upon knowledge from other subjects. The overall comments about changes in practice were positive, and it was heartening to hear so many members of the PLC report a rekindled enthusiasm for teaching.

CONCLUSIONS

To answer the question initially posed in this paper, these teachers reported many benefits to participating in the professional learning community. They perceived that saving time through subject integration was a big benefit. Sharing ideas and techniques was also seen as beneficial because the meetings provided teachers with more ideas to choose from when dealing with issues in the classroom. When the teachers shared their personal experiences, others could see new ways of handling situations. Through discussions, these teachers were able to provide a sense of direction as to where they wanted to go.

Professional development was a major benefit in the view of these teachers, because the school did not provide many opportunities for professional development. The PLC provided many professional development opportunities; each meeting was a learning experience that allowed teachers to grow professionally. Teachers also reported that the PLC was a personalized learning opportunity because it addressed issues that were relevant to this particular group of teachers.

Effective planning sessions provided teachers with a sense of direction to map out further development of their teaching and other professional activities. This map helped teachers to see the overlaps of content between subjects and to realize that similar topics in different subjects did not need to be taught twice. By reducing repetition, they hoped to make better use of their time.

On a social level, teachers got to know each other better. Some teachers had never spoken to each other before the PLC was initiated. Because of the interactions with colleagues in the PLC, the teachers reported less loneliness and a reduction in their level of professional isolation. They realized that they were not the only

teachers experiencing specific emotions and problems, and this was comforting. They were able to share many concerns and frustrations with each other.

Most of the teachers experienced changes in attitudes and embraced new practices. These included being more openminded and more willing to experiment in their classes. The PLC teachers also worked to make their teaching practice more student-centred. Group meetings and discussions made the teachers more conscious of their teaching and of how they taught their students. Several teachers reported that, through participation in the PLC, they discovered a renewed vigour for teaching. Thus there were a number of professional benefits arising from the early meetings of this professional learning community.

The perceived benefits of the PLC by these teachers are also congruent with some of the existing data. One benefit that the participants reported was that the PLC was a personalized form of professional development because it addressed many issues that were relevant to this particular group of teachers. They considered it a learning experience and appreciated the fact that they were interactive and not being "talked at." Some of the teachers welcomed this professional development because it provided many opportunities for sharing ideas and for collaboration. More importantly, it provided professional dialogue about teaching and learning and ways to enhance the learning experiences of their students. Furthermore, this PLC illustrated that these teachers could take initiative with respect to their own professional learning by selecting the various topics that were discussed in each of the sessions.

The PLC seemed to enhance socialization among the teachers and reduce isolation. It has been argued in the literature that a PLC reduces isolation among teachers (Little, 1987; Fullan, 1991). This group's members reported that they were not as isolated as they had been prior to joining the PLC, and they did not feel alone in many of their concerns. They thought they were alone until they learned that other teachers in the group shared the same concerns, and this provided a sense of comfort. In addition, they were able to express their frustrations and concerns about the school in the PLC.

The PLC context also provided a place for teachers to get to know other teachers they might not have otherwise spoken with.

Participants were able to dialogue about teaching and learning as they came to understand others' perspectives on teaching and learning. The teachers shared personal experiences about their classrooms and thereby learned more about how their colleagues dealt with particular classroom situations. There are many benefits as well as challenges in initiating a PLC of teachers. This group demonstrated that its members could function as a learning community for a short period of time because it displayed features that were common to other PLCs. The failure to meet after the initial 12 weeks confirms that a leader must be present to ensure that the group continues to meet. These teachers seemed to respond better to a leader who was familiar with the school but was not in a position to create power struggles with them at the school. As a former teacher at the school, I was familiar with the school's culture and thus I was able to relate quickly and directly to their issues. As a former teacher turned researcher, I was not in a position to create power struggles because I was not in a position of authority over them.

The participants discussed several issues and shared many experiences and ideas in the meetings and in their interviews. When they were asked to document specific situations by writing about classroom successes and failures or anything they had tried in their classrooms, they were more reluctant. This was evident in the collected data for the study. There were large amounts of dialogue data from interviews and meetings, but there was very little in the journals and exit comments. These teachers preferred to talk rather than write about their concerns, issues, problems, successes or teaching practice. A few of the male teachers indicated it might have been a "gender thing," implying that men do not like to write about their experiences. The female teachers also indicated that they do not like to write and gave that as their reason for minimal documentation of their teaching. One teacher simply and honestly said that he was too lazy to write in a journal.

SUMMARY

This paper has illustrated a range of benefits associated with this professional learning community, as reported by the participants. They reported that saving time through collaboration and proper planning may allow teachers to find time to teach other topics in greater detail. The teachers also reported the benefits of

sharing ideas and techniques. They collected many suggestions from the group that allowed them to have a pool of new ideas when teaching or dealing with management issues in the classroom. It was clear in the meetings that these teachers understood the perspectives of their colleagues and that they were able to build upon what other teachers said. The participants reported that the PLC was a personal professional development forum and they enjoyed the topics being discussed in a small-group setting. They appreciated the fact that the topics were professionally relevant and not externally imposed or mandated by higher authorities.

On the social side of teaching, these teachers enjoyed getting to know each other, especially teachers who were not in their own department. What they also found comforting was the fact that they did not feel as isolated after working in the PLC and they did not feel that they were the only ones experiencing some of the emotions they felt. The PLC meetings also provided an important venue for these teachers to express their concerns about teaching at this school. This was important because there are no other venues to allow for such sharing of perspectives. Once problems and concerns were described, the members of the group also tried to find solutions to their problems.

Some of the changes in attitudes seemed incredible within this group of teachers, and some attitudinal changes led to changes in practice. There was a clear shift towards more student-centred classrooms and lessons. Assessment considerations were explored to ensure that students got feedback about their work in a more timely fashion. Teachers made their classrooms more student friendly by encouraging more student autonomy in the classroom. Considering the relatively short 12-week period, the teachers reported an interesting array of positive changes in their classrooms as a result of what was shared and learned in the professional learning community.

References

- Barlow, D. (2005). The teacher's lounge. *Education Digest*, 71 (2), 64-67.
- Bolam, R., McMahon, A., Stoll, L., Thomas, S., & Wallace, M. (2005). *Creating and sustaining effective professional learning communities* (Research Report RP637). Not-

- tingham, UK: Department for Education and Science, DfES Publications.
- Bryk, A., Cambrun, E., & Louis, K. S. (1999). Professional community in Chicago elementary schools: Facilitating factors and organizational consequences. *Educational Administration Quarterly*, 35, 751-781.
- Butler, D. L., Lauscher, H. N., Jarvis-Selinger, S., & Beckingham, B. (2004). Collaboration and self-regulation in teachers' professional development. *Teaching and Teacher Education*, 20, 435-455.
- Court, D. (1999). Teacher isolation. *Education Canada*, 39(1), 25. Retrieved March 25, 2006, from <http://proquest.umi.com/pqdweb?did+413122601&sid=1&Fmt=3&clientid=14119&RQT=309&VName=PQD>
- Cowan, D., & Capers, M. (2000). Co-developers: Partners in a study of professional learning communities. *Issues ... about change*, 8(2), 1-8. (ERIC Document Reproduction Service No. ED452586)
- Dana, N. F., & Yend01-Si1va, D. (2003). *The reflective educator's guide to classroom research: Learning to teach and teaching to learn through practitioner inquiry*. Thousand Oaks, CA: Corwin.
- DuFour, R. , & Eaker, R. (1998). *Professional learning communities at work: Best practices for enhancing student achievement*. Bloomington, IN: National Educational Service.
- DuFour, R. Eaker, R., & DuFour, R. (Eds.). (2005). *On common ground: The power of professional learning communities*. Bloomington, IN: Solution Tree.
- Eaker, R., DuFour, R., & DuFour, R. (2002). *Getting started: Reculturing schools to become professional learning communities*. Bloomington, IN: National Educational Service.
- Fullan, M. G. (1991). *The new meaning of educational change* (2nd ed.). New York: Teachers College.
- Fullan, M. G. (2001). *The new meaning of educational change* (3rd ed.). New York: Teachers College.

- Glazer, C., Abbot, L., & Harris, J. (2004). A teacher-developed process for collaborative professional reflection. *Reflective Practice*, 5, 33-46.
- Grossman, P. , Wineburg, S. , & Woolworth, S. (2001). Toward a theory of teacher community. *Teachers College Record*, 103, 942-1012.
- Hipp, K. K., & Huffman, J. B. (2003, January). Professional learning communities: Assessment—development — effects. Paper presented at the International Congress for School Effectiveness and Improvement, Sydney, Australia.
- Hobson, D. (2001). Learning with each other: Collaboration in teacher education. In G. Burnford, J. Fischer, & D. Hobson (Eds), *Teachers doing research: The power of action through inquiry* (2nd ed., pp. 173-191). Mahwah, NJ: Lawrence Erlbaum.
- Hord, S. M. (1997). *Professional learning communities: Communities of continuous inquiry and improvement*. Austin, TX: Southwest Educational Development Laboratory.
- Hord, S. M., Chapman, R., Hinson, R. G., Hipp, K. A., Jacoby, C. L., Huffman, J. B., et al. (2000). *Multiple mirrors: Reflections on the creation of professional learning communities*. Austin, TX: Southwest Educational Development Laboratory.
- Huffman, J. B., & Hipp, K. A. (2003). *Reculturing schools as professional learning communities*. Lanham, MD: Scarecrow Education.
- King, M. B., & Newmann, F. M. (2000). Will teaching learning advance school goals? *Phi Delta Kappan*, 81, 576-580. (ERIC Document Reproduction Service No. ED603317)
- King, M. B., & Newmann, F. M. (2001). Building school capacity through professional development: Conceptual and empirical considerations. *The International Journal of Educational Management*, 15(2), 86-93.
- Kntse, S. D., Louis, K. S., & Bryk, A. S. (1995). An emerging framework for analyzing school-based professional community. In K.S. Louis, S. D. Kruse, & Associates (Eds.), *Professionalism and community: Perspectives on*

- reforming urban schools (pp. 23-42). Thousand Oaks, CA: Corwin.
- Lee, V. E., & Smith, J. B. (1994, Fall). High school restructuring and student achievement. *Issues in Restructuring Schools*, 7: 1-5, 16. Madison, WI: Center on Organization and Restructuring of Schools, School of Education, University of Wisconsin-Madison.
- Lee, V. E., Smith, J. B., & Croninger, R. G. (1995, Fall). Another look at high school restructuring, more evidence that it improves student achievement and more insight into why. *Issues in Restructuring Schools*, 9: 1-10. Madison, WI: Center on Organization and Restructuring of Schools, School of Education, University of Wisconsin-Madison. (ERIC Document Reproduction Service No. ED391232)
- Little, J. W. (1987). Teachers as colleagues. In V. Richardson-Koehler (Ed.), *Educators' handbook: A research perspective* (pp. 491-518). New York: Longman.
- Little, J. W. (2003). Inside teacher community: Representations of classroom practice. *Teachers College Record*, 105, 913-945.
- Louis, K. S., Guse, S. D., & Marks, H. M. (1996). Schoolwide professional community. In F. M. Newmann & Associates (Eds.), *Authentic achievement: Reculturing schools for intellectual quality* (pp. 179-203). San Francisco: Jossey-Bass.
- Morrissey, M. S. (2000). *Professional learning communities: An ongoing exploration*. Austin, TX: Southwest Educational Development Laboratory.
- Patton, M. Q. (2002). *Qualitative research and evaluation methods* (3rd ed.). Thousand Oaks, CA: Sage.
- Rosenholtz, S. (1989). *Teacher's workplace: The social organization of schools*. New York: Longman.
- Seashore, K. R., Anderson, A. R., & Riedel, E. (2003). *Implementing arts for academic achievement: The impact of mental models, professional community and interdisciplinary teaming*. Center for Applied Research and Educational Development: University of Minnesota.

