FACILITATING INTERDISCIPLINARY COLLABORATION:

SECONDARY SCHOOL TEACHERS TEAMING FOR PROFESSIONAL GROWTH AND SCHOOL IMPROVEMENT

BRIAN SHAW

B.A. University of British Columbia, 1992
B.Ed. University of British Columbia, 1995

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This work is dedicated
to my family
for their support and patience,
and to my
collaborative colleagues

Abstract

This qualitative study incorporates elements of ethnography, participant observation, case study and action research to address the question *In what ways may interdisciplinary collaboration of teachers be facilitated?* The research setting is a public senior secondary school in British Columbia, Canada. Teaming of teachers for professional development, enhancement of student learning, and school improvement led to creation of cross-curricular collaborative teams and small changes in the culture of the high school. A process for thematically coding and analyzing multiple sources of qualitative data is presented. Eight themes emerge and are discussed: making time for collaboration; shared vision and values; purpose of teaming; forming groups; the political context; learning skills and interdisciplinary approaches; designing collaborative systems; and the pace of change. The project concludes with ideas for others engaging in similar research or facilitating interdisciplinary collaboration.

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Introduction

Statement of Purpose

This project aimed to bring together high school educators from different disciplines and specialties to explore collaboration for professional development and school improvement. At the secondary level, in particular, teaching tends to be a solitary endeavor. Isolation is a way of life, and individual teachers bear responsibility for solving their own problems and finding ways to reach students. Usually when classroom teachers do collaborate it is within their own expert areas, or with non-enrolling teachers (counsellors, special education teachers, and teacher-librarians for example), though this is often limited as well. Teachers discuss school-wide issues in staff meetings and committees, but they rarely get to work together in teams to learn and to improve their students' learning.

Organizing a high school faculty by subject disciplines has advantages, and empowers teachers to identify themselves as experts. But fragmentation into departments separated by real and metaphoric walls can also divide the school into disjointed units and cliques. A shared sense of unity and purpose is hard to maintain and loneliness, estrangement and alienation may weaken resolve to improve practice. There might be less impetus to improve practice and pedagogy by working together, or fewer opportunities for teachers to share their considerable collective experience, talents, and energy with each other.

No one teacher has all of the answers, or holds the one best way to teach, even within a particular subject specialty. Teachers in differing subject areas have much to

learn from one another to improve their practice, enhance student learning, and boost career satisfaction. This project sought to generate discovery and growth for teachers by finding ways for them to work together. Creating purposeful, interdisciplinary, collaborative teams and discussion groups was a means for establishing closer ties among teachers, breaking through cultural and systemic barriers, building a professional learning community, and for improving the school.

Background

This project actually originated with discussions with Dr. David Townsend in 2001 about assuming a generative leadership role for school improvement. My past studies included shared decision-making and micropolitics, and, though the results were less than I had hoped for, they signalled a beginning of learning how to bring about gradual change for the better through collaboration.

In the spring of 2002, Dr. Gary Phillips, renowned author on the topic of school climate, was commissioned to conduct a *cultural audit* of our high school. He found what he considered to be a good school that could be better. Among his 16 recommendations for improvement were the following suggestions:

- provide ways for teachers, parents, and students to assume responsibility and take ownership for decision making
- generate synergy through staff taking collective responsibility for school concerns
- create cross-discipline colleague teams to augment the department format, to increase unity, celebrate student achievement, share ideas and practices leading to professional growth, to solve problems and instructional dilemmas, and improve job satisfaction

- differentiate instruction for all students and develop inviting classrooms
- conduct a small study of drop-out students

In my new roles as professional development representative and teacher-librarian at our school, I was curious as to whether any of these suggestions could make a difference, and, if so, how we could go about finding out. Furthermore, I was interested in the topic of collaboration for professional development and ascribed to facilitative and transformational approaches to educational leadership. I thought this might be an opportunity to combine my studies with an action research project that could do some good in our school. Facilitating the creation and functioning of teacher groups became the focus of my masters leadership program for one year. By starting small, remaining flexible, being open to new possibilities and ideas, exercising sensitivity to the people involved, aiming for consensus, and seeking gradual change, I hoped this project would contribute something modest but meaningful to the education knowledge base.

Setting

This case study took place in the only secondary school for Grade 10-12 students in a community of about 10,000 people in the interior of British Columbia. The school, a large one-level building with adjacent buildings, is located in the centre of the community and serves a wide geographic area. A faculty of 31 teachers, three administrators, and 15 support staff workers serve a student population of 750. Enrolment has remained fairly stable for several years, and, as of this writing, was not anticipated to grow or decline substantially. The teaching staff has also remained relatively stable, though retirements and leaves in recent years have seen teachers transferred from elsewhere in the school district. The school offers a wide array of innovative career programs and fine arts

opportunities to students, though it also has a reputation for being somewhat traditional. The boundaries of this case study periodically extended into the context of the school district, involving interactions with educators having connections to the school.

Research Question

The following question guided research efforts and focused analysis of findings: *In what ways might interdisciplinary collaboration of secondary school teachers be facilitated?*

Definitions.

- *Collaboration.* The act of working together with one or more people in order to achieve something. This includes, but is not limited to, collegiality, which involves equality and mutual respect among professionals. It also implies need for goals, planning, cooperation and ongoing effort. It is more like consultation than casual conversation. In this context it is specifically related to the work that teachers do, and focuses on teaming of teachers.
- *Interdisciplinary collaboration.* Teachers specialized in instruction in particular subject areas, disciplines or fields (e.g. mathematics, English, industrial education, science, music, special education, social studies, French immersion, career education,) consulting one another and working together for a particular purpose, as opposed to *intradisciplinary* collaboration (e.g. teachers of science). Though the terms *interdisciplinary*, *cross-curricular*, *cross-discipline*, *multidisciplinary*, and *across-subject areas* may hold different meanings to people these were considered to be synonymous for the purposes of this study.
- *Secondary school teachers.* Teachers who are specialized at working at the high

school level. This includes classroom teachers and non-enrolling teachers or professionals. In this setting, it means educators of Grades 10-12 students.

- *Facilitate.* To ease or to make easy, help, aid, assist, make possible, grow, expedite, or smooth the progress of efforts.
- *Ways.* Means, strategies, actions, approaches, behaviours, methods, plans, processes, procedures, changes, traditions, conditions, events, occurrences, incidents, values, ideas, systems, structures, resources and devices.

Related Sub-questions.

- What restrains interdisciplinary collaboration?
- What factors are particularly relative to facilitating collaboration in this school?
- In what ways might collaboration have an effect on classroom practice, professional development, and school improvement?
- What do the teachers want to achieve? What are their goals?
- Is there a question teachers want to answer?
- How will students be affected?
- What will teachers actually do when grouping together? For how long?
- How should teachers organize themselves?
- How can teachers best work together to learn from one another?
- What can teachers do to recognize each other's strengths?
- How can the school generate synergy?
- What process will teachers use to resolve conflict?
- What resources will be needed? Where can they be found?
- What can administrators and others do to support teachers?

Literature Review

A consensus of belief has emerged in the body of knowledge regarding school reform over the last couple of decades. It affirms that teachers, more than any other relevant factor, are the key to continuous improvement of schools. Attend to the quality of teaching and student learning and achievement will be enhanced. Professional development of teachers, therefore, is the linchpin of teaching quality (Sullivan, 1999).

Another widespread and important theme may be found in the notion that reforming schools into true learning communities will lead to advantages for both teachers and students (Barth, 1990; 2001; Sergiovanni, 1994). In particular, DuFour and Eaker (1998) examine the characteristics of what they call a *professional learning community*, in which "Educators create an environment that fosters mutual cooperation, emotional support, and personal growth as they work together to achieve what they cannot accomplish alone" (p. xii).

Conzemius and O'Neill (2002) say that collaboration is a "core value and a critical component of learning communities," because it brings diversity of thought and perspectives to the creative process which can enable continuous improvement in the school. "Having teachers share their knowledge, expertise, and experience gives us a better understanding of the challenges we face" (p. 11).

In an influential study, Newmann and Wehlage (1995) found that student achievement increases in schools with collaborative work cultures that foster professional growth among teachers and other educators. Among their conclusions:

> If schools want to enhance their organizational capacity to boost student learning, they should work on building a professional learning community that is

characterized by shared purpose, collaborative activity, and collective responsibility among staff. (p. 37)

The occurrence of teachers working together is frequently cited as an important dynamic contributing to well-being, productivity and renewal in schools and colleges (Austin & Baldwin, 1991; Korinek, McLaughlin, & Walther-Thomas, 1999). Deal and Peterson (1999) believe that "in school cultures valuing collegiality and collaboration, there is a better climate for the social and professional exchange of ideas, the enhancement and spread of effective practices, and widespread professional problem solving" (p. 7).

Working together means collaboration. A more detailed description by Idol, West, and Lloyd (1988) defines collaboration as an interactive process that enables teams of people with diverse expertise to generate creative solutions to problems. The outcome produces solutions that are different from those any individual team member would produce independently (p. 55). Skillful collaboration, therefore, results in synergy.

The personal and emotional aspects of this process can also be rewarding. Teacher collaboration breaks the isolation of the classroom, leads to increased feelings of effectiveness and satisfaction, and to "a more elaborate and exciting notion of ... teaching" (Popkewitz & Myrdal, 1991, p. 35). For beginning teachers, collegiality can save them from the usual sink-or-swim, trial-and-error ordeal. For experienced teachers, collaboration prevents end-of-year burnout and stimulates enthusiasm (Inger, 1993).

In collaborative processes, teachers share with each other, help each other learn, and become better teachers (Barth, 1990, p. 46). Barth (2001) says teachers giving and receiving "craft knowledge" can bring about school reform (p. 62). He calls on

educational leaders to "find ways to honor, reveal, exchange, and celebrate the craft knowledge that resides in every schoolhouse" (p. 62). This is the rich expertise that leads to improvement from within the school itself. Barth (2001) emphasizes that teachers modelling their learning has a dramatic impact on their students:

> If [children] see about them adults who ask questions, read, write, pose and solve problems, work together, and struggle with important learning, *they* want to ask questions, read, write, pose and solve problems, and engage in and struggle with important learning. (p. 24)

Furthermore, teachers working together set an example for students to work cooperatively in the classroom, and these teachers may feel more comfortable asking students to group for learning (Schmuck & Schmuck, 1990).

In these examples, cultural norms are created that support a climate of eagerness to learn, and of wanting to strive for excellence. But the culture of a school can inhibit and prevent collaboration as well. Deal and Peterson (1999) refer to "toxic cultures" where dysfunctional norms such as "distrust colleagues" and "criticize innovation" exist and resist progressive and collaborative efforts. Despite the abundance of literature extolling the value of collaboration, there appears to be much concern about the plethora of obstacles that can prevent collaboration from being effective.

Norms and traditions in secondary schools, in particular, tend to isolate teachers within their classrooms. The image of the teacher standing in front of the class, or marking papers at her desk, with the classroom door usually closed, is prevalent. Teaching has been likened to the second-most private act in which adults engage, dryly comment DuFour and Eaker (1998), adding: "In fact, schools have been characterized by

some critics of public education as little more than independent kingdoms (classrooms) ruled by autonomous feudal lords (teachers) who are united only by a common parking lot" (p. 115). This seemingly facetious comment would be funny if it did not ring so true.

Judith Warren Little (1990) characterizes teaching in a similar vein: "Schoolteaching has endured largely as an assemblage of entrepreneurial individuals whose autonomy is grounded in norms of privacy and non-interference and is sustained by the very organization of teaching work" (p. 524). Clearly, it is difficult to overcome deeply entrenched traditions, norms, physical isolation, busy schedules, politics, and budget deficits to enable teacher collaboration.

In a historical-critical study, Torres (1996) noted the prevalence of "cognitive individualism," among mid-career teachers that can be a roadblock to collaboration. This is a perspective that conceives of knowing, learning, production of academic knowledge, and even professional development as individualized processes. Individuals, mainly white, middle-aged males, with these thought processes view group work instrumentally; that is, they see groups merely as a collection of individuals, and that groups exist solely for individuals, which inhibits in-depth dialogue, trust, interdependence, and the generation of synergy. Hargreaves (1995) said that many "classroom teachers in mid- to late-career, prefer to cultivate their own gardens, making small changes with their own classes where they know their efforts will make a difference" (p. 15). He points out that while "no person should be closed to change and continuous learning, in institutions that value cultural transmission and stable socialization among their many goals, there are moments and places for consolidation and routine" (p. 16).

Collaboration is often viewed as an "add-on" to the day-to-day work of the

teacher, something that is at the fringes of responsibility when there is already little time to do the important work at hand of teaching children. This seems particularly true at a time when teachers are expected to do more with less in many jurisdictions--fewer resources, larger class sizes, expanded roles and responsibilities, heightened achievement standards. What is less-often recognized is that collaborating can be an effective way for teachers to cope with these demands (Barth, 1990, p. 29).

If administrators believe in the value of collaboration for professional development, they should clearly articulate it, openly encourage it, build time into the schedule for teachers to work together, allocate resources to facilitate it, and support it when the going gets tough (Inger, 1993; Kruse, Louis & Bryk, 1994; Manning, 2000; Peterson, 1999).

However, administrators mandating teachers to participate in collaborative activities can lead to what Dawe and Hargreaves (1990) call *contrived collegiality*, in which teachers may appear to cooperate with administrative requirements that they work together though they actually do not. The best impetus for teachers to work together originates within and among teachers themselves (Barth, 1990).

Another disincentive to collaborate is the potential for conflict, which could expose teachers to criticism. Isolation then, becomes preferable to being attacked (Little, 1990). Achinstein (2002) verified this side of collaborative work in micropolitical case studies she conducted in two middle schools. Heightened stress and anxiety was reported by teachers who engaged in collaborative activities in one school. But the conflict was viewed as being positive overall because it was part of a healthy process of negotiating the values and actions of the schools, and accepting differences. Schools that cover up

and submerge conflict may stagnate, or not improve in substantive ways. Blase (1988) contends that while many teachers view politics as disruptive and self-serving, educators can use *positive politics*--where power is exercised with others, rather than over them--to improve schools. He offers a number of practical approaches and strategies for doing this. Barth (2001) also contends that collaboration may sometimes require long meetings, and cause frustration, and anxiety, but it has paybacks in the long run for participants if they believe in it and can learn to be team players (p. 100).

Teacher collaborations come in a great variety of forms, including various mentoring programs, new teacher induction, peer consultation or observation, coaching, team-teaching, institutes, workshops, seminars, school committees, shared decision-making, departmental planning, collaborative action research, planning for integrated curriculum and projects, sharing teaching practices and resources, student support teams, study groups, co-coaching sports teams and sponsoring extracurricular activities, star and hierarchical teams, and many more (Acheson & Smith, 1991; Austin & Baldwin, 1991; Barth, 2001; da Costa, 1995; Scott & Smith, 1990). These formal and informal groupings are designed to meet the needs of individuals, cultures and situations at hand.

Teaming appear to be the predominant vehicle for collaborative work, and also comes in many forms (DuFour & Eaker, 1998). Teams are more than just groups of people coming together to accomplish something, say Conzemius and O'Neill (2002). Teams serve a unique purpose, work in an environment of reflection, and must be focused with data and goals to be productive. When teams are performing at high levels, the results are generative, which "builds community, fuels motivation, renews the spirit, and enhances innovation" (p. 11).

Interdisciplinary teaming is often cited as an essential element of quality middle schools. Manning and Saddlemire (1996) say it "has proved to be a workable concept that is highly valued and enjoyed by both middle school teachers and students" (p. 341). Specialized teachers of different subjects within such teams influence one another through collaborative teacher interactions. In these interactions they may work together to plan and integrate curriculum, improve classroom practice and instruction, develop strategies for individual children and heterogeneous groups, manage behaviour, support each other, share knowledge, inquire and solve problems (Erb, 2000; Hackmann et al., 2002; Manning, 2000; Meichtry, 1990).

Interdisciplinary teams have been less utilized at the senior high school levels, where division of subject matter into isolated courses may frustrate students seeking a more relevant, natural, unified and holistic understanding and interconnectedness of learning. Jacobs (1989) says:

> It is no wonder that many secondary school students complain that school is irrelevant to the larger world. In the real world, we do not wake up in the morning and do social studies for 50 minutes. The adolescent begins to realize that in real life we encounter problems and situations, gather data from all of our resources, and generate solutions. The fragmented school day does not reflect this reality. (p. 4)

In contrast to a discipline-field based view of knowledge, interdisciplinarity does not stress delineations but linkages. Hargreaves (1995) believes that in the postmodern era, specialization and interdisciplinary approaches to learning are both needed to provide students a clear perspective of the many relationships between subject areas.

Manning and Saddlemire (1996) say the concept of interdisciplinary teams in middle schools "can be equally successful in the high school, especially when teachers see its advantages and are allowed to maintain allegiances to their subject area departments" (p. 342). Several attempts at interdisciplinary teaming in secondary schools appear to have had success, particularly in increasing teachers' collegiality and levels of collaboration, given the right circumstances, people, approach, and purpose (Gable & Manning, 1999; Inger, 1993; Lasiter, 1996; Legters, 1999; Little, 1990; Wolk, 2002).

There are opportunities for exploring the benefits and applicability of interdisciplinary teams to link studies and improve student learning in high schools, but such an endeavor is not without challenges. Inger (1993) observes that moving toward a more interdisciplinary experience for students in high schools may be difficult because:

> The departmentalization and subject-matter affiliations--and the walls they erect--are sustained not only by the dispositions of individuals but also by a range of policies and practices, including university admission requirements, that affect the way teachers think about curricula, the needs of students, pedagogy, and the purpose of education. (Departmental Walls)

There is an abundance of literature warning of other pitfalls of teaming as well. For instance, creating an effective interdisciplinary team requires much more than throwing together a group of individual teachers from various subject areas. It involves commitment, "like-thinking" to a degree, clarity of purpose, training in teamwork, high levels of trust, support of administration, effectively managed meetings, and ongoing assessment, according to DuFour and Eaker (1998, 119-129).

"How-to" sourcebooks for organizing collaborative teams of teachers are

available and provide some useful ideas (Garmston & Wellman, 1999; Conzemius & O'Neill, 2002). However, Fullan (1998) advises that, despite the very clear research showing the benefits of schools having collaborative work cultures, this does not tell educators exactly how to change their own situation to produce greater collaboration. He writes:

> They can get ideas, directions, insights, but they can never know exactly how to go about it because such a path is exceedingly complex, and it changes as they work with their organization's unique personalities and cultural conditions. (p. 4)

Sergiovanni (1994) also believes that the answer to building community does not lie with external recipes or training packages grafted onto a school, though theories and ideas can provide a start. He writes: "If we are interested in community building, then we, along with other members of the proposed community, are going to have to invent our own practice of community. It is as simple, and as hard, as that" (p. 5)

Understanding and working within a particular context, then, is a critical factor in preparing for and facilitating collaboration, assessing progress, persevering, and gathering data for a research project aimed at bringing about some small changes in school culture.

Research Methods

Overview of Methodology

This was a *qualitative* study. The history of this research tradition is rooted in early sociology, anthropology and journalism. It differs from quantitative research in that "data collected have been termed *soft*, that is, rich in description of people, places, and conversations, and not easily handled by statistical procedures" (Biklen & Bogden, 1998, p. 2). Data are frequently gathered through sustained contact with people in settings where subjects normally spend their time, such as schools (Gay, 1997).

As with quantitative research, data collection is highly disciplined. However, data may take many forms, and more often appear as words, not numbers. Observations and interviews of people are used to gather data, and documents may be studied (Cates, 1985; McMillan & Schumacher, 1989). Popular in qualitative research is the technique of participant observation, in which the researcher enters the world (or is already there, such as members of a school faculty) of the people he or she plans to study, gets to know them, earns their trust, and systematically keeps a detailed written record of what is heard and seen. *Active* participant observers do not attempt to be objective or to isolate themselves from the people being studied. Instead, they immerse themselves in the social environment in order to observe it from the inside, they interact with people to study their behaviour, and they may play an influential role in causing change during research. Field notes from their observations are supplemented by other data such as school memos, records, reports, and email (Biklen & Bogden, 1998, p. 3).

Qualitative research may be thought of as an umbrella term for many different kinds of study approaches that have similar characteristics, all of which are evident in this

project (Biklen & Bogden, 1998, pp. 1-5):

- It is *naturalistic* since the researcher works in natural settings where people engage in natural behaviour (talking, meeting, laughing, working) and not in controlled and artificial environments like laboratories. Context is critical.
- It is *hermeneutic*, because it may analyze text, and aim to interpret notes, journal writings, videotape, and other documents. Thematic coding and analysis methods may be employed to do this.
- It is *inductive*, as the researcher thinks and develops theory "from the bottom up" while analyzing data, to construct a picture that takes shape as he/she collects and examines the parts. Questions guide inquiry, and may lead to other questions, but hypotheses are not proved or disproved.
- It is concerned with *process*, not final product, to understand how phenomena occur. Therefore, this approach is flexible and adaptive, enabling the researcher to use strategies to suit the particular study.
- It focuses on *constructing meaning,* to interpret and understand the experiences of people, and how they make sense of their lives and social worlds. Qualitative inquiry, then, is also *social research* conducted to seek answers to questions about the social world (Neuman, 1997, p.1).

Qualitative research engages the researcher closely with the situation, people and questions under study and fits well with doing research in the interactive and dynamic environment of a secondary school (Suter, 1998). Three research approaches in particular are suitable for this project: ethnography, case study, and action research.

Ethnographic research analyzes human stories and describes culture. Ethnography originated as a branch of cultural anthropology. Spradley (1980) describes ethnography as "the study of both explicit and tacit cultural knowledge" (p. 8). Culture is "the acquired knowledge people use to interpret experience and generate behaviour" (p. 6). While explicit cultural knowledge can be communicated at a conscious level and with relative ease, tacit cultural knowledge remains largely outside of people's awareness. This is why the researcher must actively engage with people in order to "make inferences about what people know by listening carefully to what they say (and) by observing their behaviour" (p. 11). "Participation allows you to experience activities directly, to get the feel of what events are like, and to record your own perceptions," Spradley writes (p. 51). The researcher's subjective experience is an important aspect of ethnography.

Case study has been increasingly used in education but is also popular in many fields including psychology, sociology, anthropology, history, medicine and business. The case study approach involves in-depth research of a few people, events or organizations within a particular social context or place. Yin (1994) says case study "investigates a contemporary phenomenon within its real-life context, especially when the boundaries between the phenomenon and context are not clearly evident" (p. 13). Multiple sources of evidence are used.

Case study has been criticized on the basis that a single case is microscopic and not valid to produce a generalizable conclusion about phenomena. Yin (1994) counters this with the argument that the relative size of the sample does not transform a multiple case into a macroscopic study. The goal of the study should establish the parameters and be applied to all research. Therefore, even a single case is acceptable provided it meets

the established goal. The case study approach appears to be less of a method for conducting research and more of a guide for establishing the frame for data collection.

Another, related method and process appropriate for this study is action research. The term was coined in the United States by the social psychologist Kurt Lewin in 1944 in connection with his research that aimed to promote social action through democratic decision-making and active participation of practitioners in the research process (Kelly & Kember, 1993, pp. 1-3). It has re-emerged as a process by which teachers may inquire into their practice and take action to improve it (Anderson & Herr, 1994). Qualitative action research is inquiry-oriented, but research design is somewhat flexible and adaptable to changing conditions. The emphasis is on describing observable change (Alberta Teachers' Association, 2000, p. 4).

The process occurs in four steps: *planning, taking action, observing,* and *reflecting* on the results of the action. These steps are expandable. The process lends itself to a spiral of cycles and series of actions in which inquiry leads to reflection, which leads in an iterative and recursive fashion to more inquiry. Sometimes the information gained leads the researcher to refine the question with a different focus (Alberta Teachers' Association, 2000; Calhoun, 1994). Rapaport (1970, p. 499) describes action research as an activity that aims to contribute both to the practical aims of people in an immediate problematic situation, and to the goals of social science, by joint collaboration within a mutually acceptable framework.

This last point is particularly significant for the purpose of this project. Collaborative action research provides a means for teachers to work together to effect change in their classrooms and school. It is important that all participants in the research

have a voice. Teachers "can learn about collaboration by doing it … (they) can see the greater benefits of collaboration by reflecting on their work and by taking ownership of what they have accomplished with the help of others" (Alberta Teachers' Association, 2001, p. 36). Collaboration is central to other action research processes (Sagor, 1992).

Data Collection and Activities

The key method of observation involved recording notes to describe what I was seeing, hearing and experiencing at the time. I would then reflect upon these primary notes, seek out corroborating information and related documents, ask questions about what was happening, challenge my assumptions, and make further notes. Collecting data in this way, as well as via the use of questionnaires, and in-depth interviewing of participants, resulted in most of the information collected. Questionnaires (See Appendix B) and anonymous feedback forms were standardized and respondents were voluntarily self-selected for participation. My past experience as a journalist prepared me to conduct semi-structured interviews using a list of themes and open-ended questions. This interview format was chosen because: (a) I am familiar with it (b) it would impose a logical and consistent order on all interviews, and (c) it allowed flexibility for myself and for interviewees to deviate from the format for exploratory and interpretive purposes. Most interviews were done via telephone in order to facilitate contact and to reduce interviewer effects, while interviews with key respondents were conducted face-to-face because they required more depth. All interviewees were purposively selected according to their involvement with different teams and initiatives or because they were privy to information. I sought a variety of perspectives.

The four-stage action research process of planning, action, observing, and

reflecting guided each of eight events or activities engaged in and studied for this project. Accordingly, I immersed myself as an active participant-observer in a series of activities that began in September 2002 and ended in March 2003:

- September 2002 NIDs Curriculum Implementation and Professional Development
- "4Ls" Collaborative Initiative
- Local Environment Collaborative Initiative
- November 2002 NID Professional Development
- January 2003 NID Professional Development
- District Leadership Team and School Planning Council
- Workshops in Collaborative Skills
- School-Wide Cross-Curricular Teams

September 2002 NIDs. These two non-instructional days (NIDs) days at the start of the school year, as with the other non-instructional days, were mandated by collective agreement. Their content and purpose was to deal with discretionary matters of curriculum implementation and professional development. The principal planned the first day, which served to explore ways to develop the social responsibility of students in alignment with ministry and district directions, and with recommendations from the report produced the previous spring by an external consultant following the cultural audit of the school. The second day was prepared by the professional development (PD) committee, of which I was a member, and focused on staff processing of the cultural audit report. The main outcome was to develop an action plan to address key elements of the report after obtaining staff input and consensus.

Data Collected:

- cultural audit formal report
- planning notes
- agenda
- notes taken during observations
- summary of participants' ideas and social responsibility action plan
- participants' feedback to PD committee for future planning
- written researcher reflections

4Ls Collaborative Initiative. This teacher-driven but administration-supported effort emerged immediately after the creation of an action plan at the September NIDs to address the social responsibility of students. It involved a core group of teachers receiving information from other teachers about students who repeatedly infringed a set of teacher-determined codes related to the topics of Language, Lockers, Litter, and Language. The lead teachers instructed students in the writing of essays to promote reflection and learning. This collaborative activity featured no formal meetings of teachers until a staff meeting at the end of the first semester to discuss results and decide whether it should continue. I nominally participated in this collaborative initiative.

Data Collected:

- notes taken during observations at September NID
- "4Ls" organizing memo distributed to staff
- notes taken during January staff meeting
- formal interview with a core facilitating teacher
- written researcher reflections

Local Environment Collaborative Initiative. This thematic school-wide project was created and sustained by a partner teacher and myself. It began in October 2002 and was, like the 4Ls effort, partly a result of the September NID action plan to develop students' social responsibility. However, it also sought to deliberately enhance interdisciplinary collaboration of teachers in the school and generate synergy. It featured two voluntary formal meetings of teachers: the first was a planning session that occurred after school and attracted 11 teachers; the second took place during the November NID when 16 teachers participated. Teachers were encouraged to work with at least one other teacher outside of their departments on the theme of *local environment* during the first semester. This could include integrating curriculum, coordinating extra-curricular activities, or taking students on field trips--all of which were done in limited ways. The main work was the design and maintenance of a school-wide recycling system for paper, pop cans, and several other recyclable items. This included promotional efforts to make students and staff aware of the need to keep the school and grounds clean. Plans for a school-wide clean-up campaign in the spring were also devised. The initiative ended in January, though the recycling system continued into the second semester, and a clean-up day did occur, though with little input from members of the group.

Data Collected:

- planning notes from discussions with partner colleague
- Local Environment organizing memo distributed to staff
- poster of participants' ideas from first session
- correspondence (email and notes) with participants
- observation notes from session at November NID

- formal interviews with selected participants
- written researcher reflections

November 2002 NID. This professional development day involved all faculty, support staff and administrators and was planned by the PD committee in collaboration with other educators in the district. It included activities for developing collaborative skills, characteristics of collaborative schools, Myers-Briggs Personality Styles (Humanmetrics, 1998-2003), interdisciplinary teaming, and differentiation of instruction. I was highly involved in planning, gathering resources, preparing, facilitating and co-presenting.

Data Collected:

- planning notes
- correspondence (emails and notes) with facilitators
- agenda
- posters created by facilitators and participants
- observation notes
- detailed questionnaires (n=7) from participants (See Appendix A.)
- anonymous feedback forms from participants (n=26)
- written researcher reflections

January 2003 NID. This last professional development day, also developed by the PD committee, featured a local facilitator presenting a framework for instruction entitled Pathways to Understanding: Patterns and Practices in the Learning-Focused Classroom (Lipton & Wellman, 1998). Study of these multi-grade level and cross-discipline strategies enabled interdisciplinary teaming structures of teachers once again. The

afternoon then centred on presentations and discussions for ongoing collaborative efforts at the school, characteristics of learning communities, and interdisciplinary approaches to teaming. Once again I was involved in preparations and presentations.

Data Collected:

- planning notes
- agenda
- correspondence with PD committee and facilitators
- observation notes
- facilitators' and participants posters
- anonymous feedback forms from participants (n=22) with suggestions for establishing interdisciplinary teams (See Appendix B for responses.)
- written researcher reflections

District Leadership Team and School Planning Council. Simultaneous to the events described above, I participated in two collaborative endeavors during the school year. The school district had established four leadership teams to develop strategies for achieving goals in the district's accountability contract with the education ministry. Beginning in September 2003 I was an active member of the Employability and Life Skills team, along with six others. I participated in and chaired several meetings, and worked closely with the group to build consensus. I facilitated the development of an action plan to enhance student learning by developing assessment protocols, and presented this to ministry representatives. The other new collaborative group I was appointed to by school administrators in January 2003 was the School Planning Council (SPC), which had the mandate to develop goals and strategies for improving student

learning within the school. This group included myself as teacher representative, three parents, and the school principal. I also presented the plan we developed to school board trustees. Both of these required attending training and orientation sessions and regularly engaging in collaboration first-hand. I learned much about working with others for improving schools and school districts by being focused and seeking results.

Data Collected:

- observation notes
- written researcher reflections

Workshops in Collaborative Skills. To further inform myself about facilitating collaboration I attended two seminars. The first was a ministry-sponsored leadership academy in November 2002 featuring Data-Driven Dialogue, presented by Laura Lipton (Lipton & Wellman, 2002). This seminar meant to develop practical structures for using data to focus a group's attention and energy, to understand and apply a three-phase model for guiding data-driven dialogue, and to extend a repertoire of tools for mediating productive group learning, planning and problem-solving. The second workshop was a district-sponsored session on Cognitive Coaching (Costa & Garmston, 2002), facilitated by local trainers. This approach emphasized the use and practice of non-judgemental discussion methods between teacher peer coaches to help teachers identify and solve professional problems. The workshop illuminated pitfalls of faulty communication and participants practiced skills for pausing, probing, and paraphrasing to facilitate active listening and reflecting. In addition, my research continued to be informed by my own extensive readings for my developing literature review. I frequently compared and contrasted what I was reading in the literature with what was happening in the school. For

instance, the work of Judith Warren Little (1990) on the persistence of privacy in teacher relations served to illustrate how individuals maintain norms of privacy and may actively resist collaborative work to do so. This was useful for helping to facilitate the Local Environment and cross-curricular teams.

Data Collected:

- observation notes
- handouts and readings
- written researcher reflections

School-Wide Cross-Curricular Teams. These interdisciplinary teams of seven members each were created over a two-month period following the November NID. They were a joint initiative of the new principal and some teachers. These teams were discussion groups designed to build unity and collegiality, and to stimulate sharing among the faculty, through dialogue on key issues for school improvement: a) cross-curricular instructional and pedagogic strategies, b) indicators of positive culture change, and c) cross-curricular strategies for addressing the school improvement plan developed by the SPC. The first meeting was held in early March 2003, and two others were scheduled for April and May. I decided to conclude research and data collection after the first meeting, consolidate and reflect upon what I had gathered, and begin putting together this research report. I played an active role as a consultant to the principal and facilitator of the teams.

Data Collected:

- planning notes
- correspondence with the principal and teachers

- organizing and informational memos to staff
- observation notes
- collated comments and ideas from team posters distributed to staff
- written researcher reflections
- formal in-depth interviews with selected participants and the principal (n=12; See Appendix C for questions asked.)

The Research Process

Over time it became evident that, while each of the above activities followed the steps within the action research process, they were also causes and effects within a greater cycle of progression. This led me to reconsider and refocus my research question following the November NID with the realization that what I was really learning was how to facilitate interdisciplinary collaboration in this school. The cultural audit report had resulted in the September NIDs, which spawned the 4Ls and Local Environment collaborative teacher initiatives. All of these activities were considered during planning for the November and January NIDs, as was my participation in the district leadership team and school planning council. By the end of January, *planning* for the cross-curricular teams was underway, led by the principal. These plans were revised following iterative discussions and reflections, leading to *action* in the form of the first meeting of the teams in March. My participation in the School Planning Council, District Leadership Team, and collaborative workshops had influenced my contributions to this planning. *Observing* these team meetings involved taking copious field notes while facilitating and participating in them, and also conducting formal interviews with participants afterward. *Reflecting* meant gathering, thematically coding, and analyzing

data to determine generalizations and conclusions about what contributed this past year to the creation of the teams, and what direction they might take in future meetings. (See Figure 1, The Research Process.)

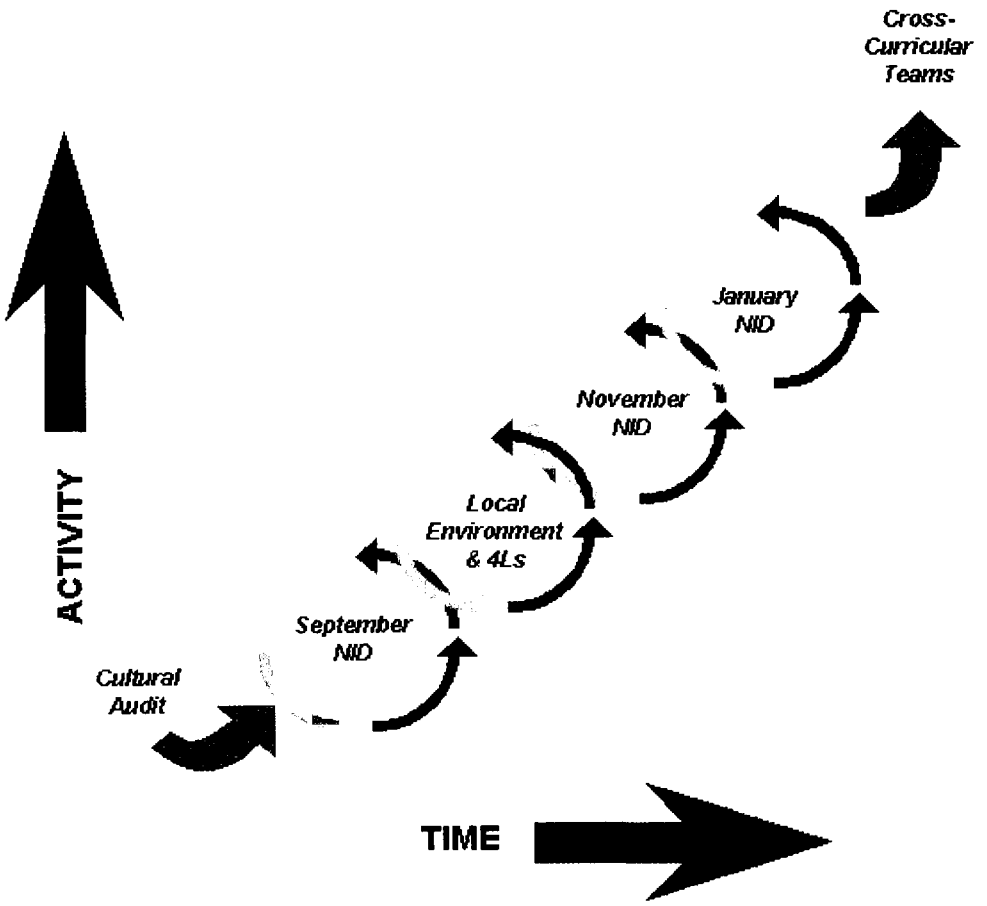

Figure 1

The Research Process

Data Analysis

Overview of Analysis Methodology

To guide my final reflections, make sense of the great amount of information that was gathered, and to arrive at conclusions about what could be learned from this project I first studied qualitative data analysis. Most of the analytic methods employed are outlined by Neuman (1997) in the book *Social research methods: Qualitative and quantitative approaches [3rd ed.]*, (pp 418-441). According to Neuman, the challenge of analysis is to organize a large quantity of specific details into a coherent picture or set of interlocked concepts:

> A qualitative researcher rarely tries to document universal laws; rather, he or she divides explanations into two categories: highly unlikely and plausible. The researcher is satisfied by building a case or supplying supportive evidence. (p. 420)

Qualitative researchers generate concepts as they read through and question data. Data analysis is a search for patterns in data-recurrent behaviours, objects or a body of knowledge. Once a pattern is identified, it is interpreted in terms of a social theory or the setting in which it occurred. "As the researcher reads through data, certain words, phrases, patterns of behaviour, subjects' ways of thinking, and events repeat and stand out" (Biklen & Bogden, 1998, p. 171).

Thematic coding (or "tagging") facilitates data retrieval. It is used to classify data according to theme, so that later on, when conducting analysis, it easy to retrieve all information that relate to a given topic. The essence of thematic coding is classification.

Social researchers must decide whether their objective is to code *etically* or *emically*. "To code etically means that we judge what a paragraph relates to according to our own criteria. To code emically means that we judge the topic of a passage according to what the informant himself believes the topic is" (Analytic Technologies, n.d.).

Thematic analysis of qualitative data is an explicit and systematic step-by-step process. The mass of raw data is organized into categories on the basis of themes, concepts, or similar features. Order is imposed on the data by coding processes, including open coding, which is performed during a first pass through recently gathered data to condense it and assign code labels for themes. "Open coding brings themes to the surface from deep inside the data," writes Neuman (1997, p. 422). The data are made manageable in this first pass.

Axial coding (Neuman, 1997, p. 423) is a second pass through the data, or more particularly, to review the initially coded themes. New codes may emerge, and new questions arise. The researcher moves toward organizing ideas or themes and identifies the axis of key concepts in analysis. Relationships between themes are examined. Questions are asked about causes and consequences, conditions and interactions, strategies, and processes, and categories or concepts are clustered together. Existing concepts may be divided into subcategories. Sequences may be discerned. Core themes are identified by multiple pieces of evidence.

The last pass through the data is called selective coding (Neuman, 1997, p. 423). This involves scanning data and previous codes. The major themes have already been identified, and now the researcher starts to organize the overall analysis around several core generalizations or ideas.

Analytic memo writing (Neuman, 1997, p. 424) involves the researcher making notes of thoughts and ideas about the coding process, and starts shortly after data collection begins. Each coded theme or concept forms the basis of a separate memo, and contains a discussion of it. The memos form the basis for analyzing data in the research report, and may even form parts of the report, perhaps with revisions. The memos may help to generate potential hypotheses, which can be added or dropped as needed, and to develop new themes or coding systems.

The similar analytic method of successive approximation (Neuman, 1997) "involves repeated iterations or cycling through steps, moving toward a final analysis" (p. 427). At each stage evidence and theory modify each other. Beginning with a research question, a researcher gradually moves from vague ideas and concrete details in the data to generalizations. It in this sense it is like the action research process.

These methods provided a theoretical framework to organize and present my findings in a coherent written format to help others make sense of it as well. The final product was this research report, and because this was action research there is a set of tentative conclusions to inform further action.

Application of Analysis Methods

In practice, the coding procedures outlined above were helpful for establishing and adapting my approach to analysis, though they were not rigidly applied. In fact, they were often forgotten altogether while I considered what was best to do to next to progress in my analysis. Sometimes I was not aware that I was moving from one phase of coding to another because I was intently engaged in my own process of successive approximation. I would, however, periodically revisit the coding methods when I

encountered a particularly vexing problem and these proved to be invaluable for re-focusing.

Data were collected and stored for referencing as research progressed and were later sorted into six file folders organized typologically and chronologically, as follows:

- Field Notes and Reflection
- September NID Feedback
- November NID Feedback and Questionnaires
- January NID Feedback
- March Formal Interviews
- Documents and Correspondence

Analysis actually began with the onset of research and data collection. Four themes germane to the topic of school collaboration began to emerge: *culture*, *politics*, *system* and *process*. These were imagined as dimensions through which an intricately interconnected community of people could be interpreted. They naturally reflected several elements of my graduates studies and other foundational experiences, but because they were formulated during research they also incorporated the ideas of other educators in the school. These were my paradigms, my domains of thought, for viewing the collaborative work of educators.

Culture. "The way we do things around here" (Deal & Peterson, 1999, p. 3). The values, beliefs, assumptions and norms of behaviour of a community or organization. The history, rituals, traditions and patterns of a group of people, their sub-cultures. Includes the school's *climate*, or social atmosphere, with unwritten rules, and underlying social meanings that shape people's thinking and guide their behaviours.

Politics. The way a group of people get things done. The macro- and micropolitics of a school, involving the complex interactions of people with shared and differing views, ideologies and interests. Includes concepts such as conflict and power, roles and agents, struggles for scarce resources and recognition, and balance of influence among individuals and groups. Also, competition between coalitions and alliances, and attainment or thwarting of their goals through persuasion, compromise, win or loss, or some kind of resolution.

System. What forms did collaboration take? The organizing and structuring of people and resources, including how interdisciplinary collaborative structures fit with the existing systems and operations of the school, district and ministry. The use of physical space, effective groupings, communication systems, and meeting formats. Also, tools for getting work done, roles and positions of authority, hierarchies, and scheduling and use of time.

Process. What happened? The steps, procedures, developments, plans, ebb and flow of progress, and growth over time to generate interdisciplinary collaboration. Includes identifiable patterns and significant events. What was done and how it was perceived. How causes led to effects which became causes. The advancement, abandonment or modification of ideas, approaches and opportunities. Purposeful and accidental occurrences. Linear, circular and spiral chains of events.

These four themes were never thought of as being mutually exclusive. They were developed to serve as a starting point for sorting the information, and were later used for cross-classification analysis to develop eight additional themes. A three-dimensional graphic representation would be more effective to help conceptualize interrelationships,

but the original themes may be satisfactorily illustrated in two-dimensional form with overlapping concentric filters. The additional themes are plotted within. (See Figure 2.)

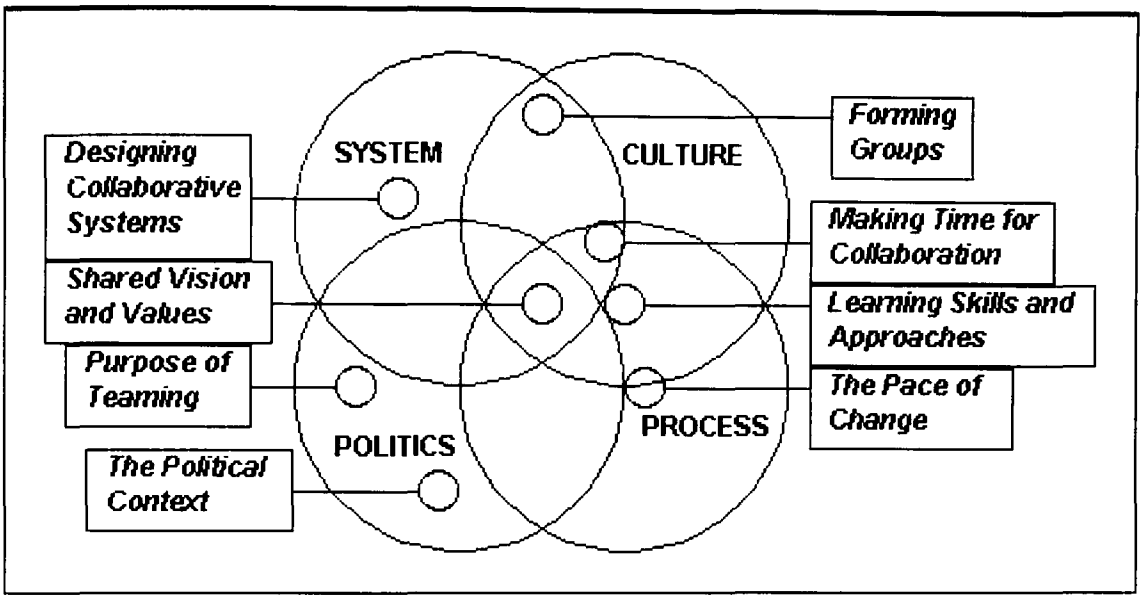

Figure 2

Venn Diagram Showing the Interrelationships of Themes

These four themes were clarified after the final collection of data. The lengthy and tedious task of organizing the mass of accumulated data into file folders gave me time to reflect upon the developing themes and define them with criteria. This actually constituted the open-coding phase of analysis and first comprehensive pass through the data.

A second pass through and reading of all of this now-organized information was then conducted. It was careful and time-consuming. It meant coding etically because I

was judging the data and categorizing it according to my own criteria for the four themes. Each piece of datum considered to be significant to a particular theme was selectively tagged with a coloured label corresponding to the theme, whether it was an entire document, a paragraph, a quotation, phrase, question or key word. Most of these were either repeated (though not counted), emphasized with detail, or relative to ideas contained in my project proposal and developing literature review. A few simply triggered my curiosity, and I wanted to revisit them later to think more about them. A number exclusive to the item was assigned and included on its tag.

Axial coding took place in two stages. A review of the now open-coded data involved focusing on one theme at a time to develop four separate lists of key words and phrases. All words and phrases previously selected were reconsidered. Some were rejected and a few new terms were formulated to merge similar ones. Overall, 23 significant words and phrases were identified as key concepts via logical deduction. This continued with a fourth pass through data in which the lists were scanned to discern patterns and relationships. This resulted in clustering the key terms and phrases into 13 subcategories of the four themes. For instance, the word *membership* was considered to be a matter of system. The question, *Who determines interdisciplinary collaboration?* concerned politics. At this point, system and culture yielded the most subcategories followed by politics and process.

Using simple recipe cards, analytic memo writing occurred at about the time the fourth pass began, initiating a form of selective coding. Each memo represented a subcategory. Grouped key words and phrases, and clarifying notes, were written on the card. Some cards contained several sentences while others were simple collections of like

words. I recorded codes corresponding to the files and numbers of relevant and important data on each memo for reference when writing later on. With the application of analytic memo writing, I began to recognize compelling connections between some themes and subcategories.

Selective coding continued with a fifth pass through data that took place during the formulation of generalizations and the writing of findings for this report. At first, each analytic memo was to form the basis for a statement of finding or a conclusion. However, it soon became clear that some sub-categories, both within and between themes, were actually too similar and interconnected to justify standing alone. This led to construction of the Venn Diagram Showing the Interrelationship of Themes. (See Figure 2.) Partly with the use of this graphic device, the 13 sub-categories were re-assembled into eight new themes.

This process, while not positivist or scientifically verifiable, was deliberate and systematic. Critical thinking, inductive and deductive reasoning, and visual analysis were necessary. It was also *apropos* for learning about the nature of interdisciplinary theory. I started with analysis, which required breaking ideas into distinct parts in order to focus on them and begin to understand them. But, as thinking progresses, connections between ideas become apparent again, necessitating synthesis and the bringing of ideas together in new ways.

The findings are contained within eight theme headings that were written as phrases. These were explained by using the tags recorded on the analytic memo cards to retrieve supporting data and add detail with anecdotes and quotations. I reflect upon and discuss the findings by adding my subjective views, in ethnographic tradition, and by

linking the findings to ideas in the literature review. Finally, in Conclusions, I summarize what I learned from this study and offer a few thoughts to readers.

Findings and Discussion

In presenting and discussing the data, my research findings are contained within eight themes: (a) making time to collaborate (b) shared vision and values (c) the purpose of teaming (d) forming groups (e) the political context (f) learning skills and interdisciplinary approaches (g) designing collaborative systems, and (h) the pace of change.

Making Time to Collaborate

One of the most probable findings of this project was that secondary teachers in this school needed adequate time, purposefully built into the school day, to collaborate. Most teachers are busy people; many of them want to work with others not in their teaching areas but find it difficult to find the time to do it given tight schedules. Teachers consistently signalled this in various ways, and my observations support their contentions.

Discussion about barriers to interdisciplinary collaboration during the September NID centred mainly on lack of time. Establishing "professional learning groups" during class time supported by release time was proposed by one participant. Other barriers related to time constraints that were identified by teachers included lack of preparation time, short lunch breaks, and the difficulty of meeting after school when teachers are tired and have families and personal matters to attend to.

These restraints were apparent with the voluntary Local Environment effort, which appears to have been hindered partly because of inadequate time. This was first apparent with the initial meeting of the group, which was held after school. Though 10 people attended, eight more said they would have been there but had other commitments

at that time. In contrast, an optional 45-minute meeting of the Local Environment group on a subsequent professional development day attracted 16 educators. Several ideas arose from both meetings, but more solid plans were developed and carried through from the second. No other whole-group sessions were scheduled, as there was not more time to get together on professional development days, and because it was deemed too difficult to coordinate the schedules of so many people to meet after school. It was left to individual teachers to find time to work together on the various initiatives. The need to wrap-up many activities after the first semester because of changing schedules, reduced preparation time, and other responsibilities also set a tight deadline for the initiative. A lead teacher said he believed most people did not have enough time to take the effort "a step further" and actually work together, and that this limited results.

Time and collaboration continued to be linked by teachers following the two professional development days. One teacher said that creating time for collaboration to occur was essential to preventing it from becoming "one more thing" to do on top of a heavier work load this year due to increased class sizes and the addition of more responsibilities such as expanded hallway supervision time. Suggestions included changing the timetable to accommodate collaborative time, such as providing team members with common preparation blocks in the timetable, giving adequate time for team-building, conducting collective inquiry, and accomplishing "true" collaboration ("not just talking about it"). Concerns were raised about there being little forseeable time, with no more professional development days available, to advance as a collaborative school.

The message was likely well-received by the principal-appointee, who was

already sympathetic to the cause for in-school time to be provided. He said that while he was vice-principal he had wanted to try collaborative grouping, but several principals wanted to do it outside of school time and so it did not occur. Now, as principal, he was able to mandate the time.

The outline for cross-curricular teams in February provided for three sessions of 45 minutes in March, April and May, with another possible in June. The principal said he wanted to avoid having meetings at the start and end of the semester--times when workloads increase for many teachers. The establishment in February of a static timetable with 1 1/2 hour blocks coincided with the scheduling of the team meetings -- which would occur for either the first or latter half of the block. Each meeting would take place during a different block to minimize the impact on students of reduced class time. Also, one of the meetings was during the sporadically scheduled Career and Personal Planning course, which further limited the amount of lost instructional time.

(By happenstance, the first meeting in March coincided with inclement weather and a resulting "non-bus day," when most students did not attend school anyway. This circumstance may have created more relaxed initial meetings in which people were better prepared, less harried, and able to concentrate.)

Teachers responded positively to the time scheduled and allocated for the first meeting. One noted that teachers were "fresh" for the morning event and appeared to be more energetic than during the monthly after-school staff meetings. Another observed that the amount of time given to discuss the assigned topic and to share ideas was "just right" as she could sense the conversation was coming to an end naturally. Any longer would have prolonged it artificially, while less time would have been insufficient and

hurried.

Following the meeting, the principal reacted cautiously but favourably to a proposal to provide funding for release time for cross-curricular teams in the next school year (though he could not commit due to provisional budget development in an already tight fiscal situation). To complement the monthly meetings and provide even more time, teachers might each have a substitute teacher paid for one day, used flexibly at the discretion of their team, to plan and work together. The principal was more favourable, however, to suggestions to adjust the timetable prior to the next school year to schedule common preparation blocks for team members. Time and money, therefore, were also linked in efforts to generate greater collaboration.

The finding that teachers believe they need more time to collaborate is reflected in the literature. Some authors go as far as saying that successful change in schools requires providing teachers with adequate time to collaborate (Louis, Kruse, & Marks, 1996).

Shared Vision and Values

The *Phillips Report* (2002) described this school as a "culture of content cliques instead of collegiality." Social and professional isolation, or "cocooning," instead of collaboration and community, was manifested by teachers "closing their door and doing their thing in seclusion." The cultural audit report recommended creating interdisciplinary teams to foster a collaborative all-school perspective and wider sense of responsibility among faculty. Consequently, from the beginning of the school year, efforts and talk involving interdisciplinary work provided venues for people to talk about what the school and teachers should be like--both pro and con the consultant's recommendations.

The phrases "shared vision" and "common values" were used by several educators at different times in this study. I did not find this to be surprising, giving the attention these terms have received in educational literature. Deal and Peterson (1999), Sergiovanni (1994) and many others have strongly argued the importance of school cultures having a common vision, mission, values, attitudes and beliefs. But what actually constituted a possible vision for the future, and positive values, for the teachers in this school were rarely discussed explicitly. The professional development committee presented and discussed with staff the model of the school as a "professional learning community" (DuFour, 1998) on two of the NIDs. Shared mission, vision and values; continuous organizational learning, inquiry and research; and interdisciplinary collaborative teams are fundamental characteristics of this model. Based upon the number of questions asked during one of these activities, teachers were curious about a vision that might be adapted to make the school better.

Based upon the feedback forms, teachers left the interdisciplinary discussions on these days with fairly positive reactions to the ideas and ideals, though only a few commented on ways that these ideas could be put into practice. Comments representing values and beliefs included:

- "We need to have an ethic at the school of constantly looking for and embracing new ways of thinking about and doing things if they're going to change for the better."
- "The most important thing teachers can do it sit down and talk to one another."
- "We must create shared understandings and common values."

- "As professionals, we should talk about our practice."
- "If we want students to be cooperative learners we have to model it for them."
- "We need innovation to improve student achievement. If it's not working why keep doing it? You need to take a closer look at what you are doing."
- "Can we challenge each others' beliefs 'gently but relentlessly?'"
- "Mental models get ingrained and we have to have paradigm shifts to break free."
- "Teachers see it (collaboration) pays off for students and this energizes them to do more. Lots of schools are organized in cross-curricular ways for this reason."

With a few exceptions, most teachers were philosophically supportive of efforts to build collaborative capacity, generate synergy, and unify faculty. In the main, they expressed interest and openness in sharing and working with others outside of their departments and responded positively to opportunities for doing so during cross-curricular team meetings.

Many teachers indicated that they were pleasantly surprised at what their colleagues had to say in these meetings about instructional, assessment and pedagogical strategies. Common practices between disparate fields, such as the use of learning simulations, were revealed. Some went so far as to say they would re-assess certain methods they had abandoned, or would consider trying new ones, because of what teachers in other subject areas said about them. One veteran teacher believed the newer teachers brought fresh ideas from post-secondary studies that made her see things

differently, while a new teacher felt that what she was doing in the classroom was validated by the veteran teachers in her group.

The statement that best summarized the consensus was: "We have more in common with how we teach and evaluate than we have differences." There were many indications that a significant portion of the staff valued collaborating in cross-discipline ways to de-fragment the professional culture. They wanted to be innovative, to generate synergy for school improvement, and wanted to agree on a shared vision and value system that spanned subject-area teachers throughout the school.

The Purpose of Teaming

"How do you know if you're getting there if you don't know where you're going?" was a question posed by a teacher after the first meeting of the cross-curricular teams. This comment represented the view that realizing a long-term shared vision begins with setting understandable and meaningful objectives to strive for. Shaping culture, identifying common values, and generating synergy are important reasons for doing collaborative work, but perhaps abstract motivators for action-oriented people who want to know exactly what to do and get on with it. For instance, collaboration to develop collaborative skills alone was a notion the former principal had difficulty with during planning for the November PD day; to his mind, collaboration had to be "for something"--a specific purpose, such as how to differentiate instruction. His comments were similar to those of DuFour and Eaker (1998) who write: "The purpose of collaboration must be made explicit. Forming teams is a means to an end, not the end itself" (p. 123).

While most teachers seemed to agree that this school was fragmented and that interdisciplinary collaboration would be a good thing, they varied in opinion as to what

they wanted to do. This became apparent at the September NID day with differing ideas for addressing elements of the *Phillips Report.* A group of teachers, including myself, wanted to focus on the report's recommendation to concentrate on being a welcoming school. We wanted to engage in cross-curricular collaboration for differentiating instruction, celebrating student success, enhancing the physical environment, and creating school-wide thematic projects to integrate curriculum.

Some others, however, wanted to discuss ideas for developing consistent strategies for reducing student absenteeism and lateness, including implementing a hall pass system, clarifying consequences, and create a collaborative system which would have students write essays following a violation of one of "4Ls"--Lates, foul Language, Litter or Lockers (offensive displays, loitering, or kissing by the lockers).

An action plan inclusive of both directions was generated, but on paper it lacked specific goals, targets, timelines, and data measures, and so results were hard to assess. At a staff meeting five months later discussion as to whether to continue with the 4Ls strategy ensued. Nobody could say if the initiative had improved student conduct; there were no data to be analyzed and no baseline to work from. Nobody really knew what the goal was in the first place. But the principal encouraged continuing with the project until the end of the school year and gauging results then.

At the outset of the Local Environment initiative the intent was to organize around a broad theme so that many individuals in different disciplines, grade-level areas, and job descriptions, who have varying interests and personal styles, could think of a way they could participate in the collaborative project. The interpretation of local environment was deliberately left undefined for the first meeting to see what purpose or purposes

might naturalistically arise from the group. However, one initial participant believed there was a need to centre all efforts on a particular goal--to become a "green school" (environmentally-conscious and friendly). Another teacher, however, saw the theme as including a research project in partnership with scientists in the Arctic. Eventually, most collaborative work focused on improving the school environment in some way. A school-wide recycling program was the most notable and had the most participants, though there were also hallway beautification undertakings, promotional campaigns encouraging students to be aware of their impact on the environment and to avoid littering, landscaping ideas, and plans to hold a clean-up day on school grounds. Tension between the desires to focus teams and to be inclusive and flexible was evident.

My own proposal in December for creating cross-curricular teams for school improvement around the general topics of literacy, numeracy, school environment, differentiating instruction, and health and athletics development, appeared to resonate somewhat with the incoming principal. He indicated that interdisciplinary teams might address four areas of student learning: literacy (reading and writing), numeracy, social responsibility, and employability skills. How they were to do this was left undetermined; collaborative action research was the approach I proposed and the principal requested that I distribute relevant reading material to staff on the topic. Soon after, however, the principal changed and limited the scope of the interdisciplinary teams; they would actually be cross-discipline dialogue groups that would meet at least three times, in 45-minute sessions, and address focus questions on three school improvement topics: (a) sharing instructional strategies and ideas to improve student learning (b) indicators for cultural change in the school, and (c) strategies across the curriculum to address the goals

in the school improvement plan for the next year. Each group would address the same question at the same time. These cross-curricular units would, however, continue to be called teams rather than discussion groups.

Two teachers expressed concern about "make work projects" just prior to the formal announcement of the cross-curricular teams. Before committing to the new task they wanted to be convinced of the reason for it, in order to decide whether it justified their time, work, risk, support, and willingness to try something new. Whether they accepted the general purpose of having cross-curricular discussions for school improvement was unknown.

To some teachers integrating curriculum to enhance student learning was their primary understanding of the purpose of interdisciplinary teaming. Some of these teachers' interdisciplinary experiences had involved collaborating with other teachers to blend course outcomes, topics and skills together (often in the form of student projects organized around themes conducive to integration), particularly in the intermediate grades.

Following the first meeting of the cross-curricular teams, one teacher said she was confused as the direction of the groups; she could see no long-term meaningful goal if integrating curriculum was not the purpose. Another said unifying learning cross-discipline to enhance relevance for students was "where the rubber hits the road" for teachers in collaborative work; otherwise, "it's all just talk."

Conversely, another teacher said he believed collaboration was important, but it would be much more useful if teachers with similar subjects and grade-level courses (e.g. all teachers of English 10) got together and shared ideas and resources. Yet both he and

the previously quoted teachers saw collaboration as a means of bettering what they teach within their classes, and wished to restrict collaboration to a curricular meaning. Several other teachers saw the purpose of the sessions simply as team-building and preparation for more substantial collaborative work to be done later on, though they did not know what that might be.

When asked, most teachers interviewed said they were comfortable with the broad discussion topics, and did not have concerns that the teams lacked purpose. They viewed the teams simply as a way to share ideas with other people they rarely talked to, for countering isolationist habits, building relationships, or taking a break from the daily routine of working with kids to converse with adults. One teacher, relatively new to the profession, found support and validation for what she was doing in the classroom in her discussion with more veteran teachers. Another, however, said that even with a broad discussion topic the collaborative arrangement should have been "flexible" in terms of participation; he noticed that some teachers were quiet and seemed uncomfortable during the discussion--that they were "put on the spot" to talk when they did not want to.

Results of this first session were hard for me to determine but there were indications that it was positive. This seemed to be another example of the ongoing strain to ascertain a purpose and approach for interdisciplinary teams that could be meaningful to all participants.

Altogether, these experiences made me think of what Ball (1987) says about *goal diversity* in schools: "On the one hand, schools contain within them members committed to and striving to achieve very different goals....On the other hand, schools are confronted with a whole set of often contradictory demands and expectations from

outside audiences and agencies" (p. 13). Goal diversity makes it difficult to agree upon a purpose that has value or permanence.

Forming Groups

The practical matter of putting together teams of individuals was a concern for facilitators and participants alike at many points in this study. Determining structures conducive to various interdisciplinary efforts appears to have involved many factors. The voluntary projects encouraged all who wanted to join in. The challenge with the large number of people in the Local Environment project, according to the other facilitator, was finding a way for everyone to participate meaningfully. School-wide recycling was one way, but it became clear that if the project were to stimulate ownership and commitment then people had to be able to exercise discretion about what they wanted to do and with whom they wanted to work. The one stipulation we facilitators requested was that each teacher had to collaborate actively with at least one other teacher outside of his/her department. Several teachers began partnerships on smaller projects. My partnering facilitator told me that this made it more difficult to coordinate the whole group. It seemed to be too "loosely-coupled," he said, adding that without being able to have regular meetings it was hard to build unity.

The 4Ls initiative, too, was loosely structured and depended upon the voluntary work of a couple of individuals to coordinate and perpetuate it. Facilitators of the three professional development days consciously grouped all teachers (and support staff on one of the days) across disciplines rather than by department or specialty. Mixing and random-selection methods from Cooperative Learning (Kagan, 1994), such as jigsaws and distributing cards and numbers to people assigned to tables, were determined by

facilitators in planning sessions. One of the presenters said she believed these methods achieved their purpose, though some groups needed to be adjusted slightly. These interdisciplinary groupings for learning were intentionally and regularly refreshed to encourage interactions between as many people as possible.

The cross-curricular teams also had to include most teachers in the school in four groups. Non-enrolling professionals such as the special education teacher, vice-principals and counsellors were assigned to monitor pre-arranged activities for students, though the principal did say he would permit teachers to opt out if they wished to. One teacher did opt out and assisted with students. The main consideration of the principal was to attain discipline-area heterogeneity of enrolling teachers in membership. This required breaking up traditional department groupings and joining together teachers of social studies, mathematics, industrial education, language arts, physical education, fine arts, business / career education, and science.

The principal sought my input into the make-up of these teams. I told him that equal distribution was not possible because some departments were larger than others. Nor was random selection logical, I added, as the purpose of the teams necessitated making decisions about the configurations most likely to achieve certain aims. For example, a team focused on improving students' reading and writing in content areas across the secondary curriculum would benefit from having two language arts teachers with knowledge in instruction for literacy. The employability skills team might tap the expertise of industrial and business education specialists to help develop the employability and work habits of students in core academic courses. I identified a few teachers for certain teams based upon their interests, and three because of their

affiliations with the District Leadership Teams. Two of the latter teachers also suggested particular teachers for the cross-curricular teams they were to be on.

The optimal size of the teams for generating synergy was another factor. Based upon what happened with the Local Environment group, I thought we should make the cross-curricular teams smaller and less complex to coordinate. The principal settled on seven members each. I noted that this was also the size of the District Leadership Teams, which appeared to function fairly well, though some members on the Employability Skills team had told me they thought this size was hard to work with too. I also reasoned that smaller numbers would span fewer disciplines, create more work for members, and minimize pools of knowledge and skills to draw upon.

When the principal later changed the design of these teams so that they became discussion groups the membership and size remained mostly the same. Some teachers proposed creating their own groups but the principal was cool to the idea. He said he held out hope that the teams would be able to focus on the four learning goals in the next school year and wanted to keep them intact. He also wished to retain their interdisciplinary nature and was concerned about "some people getting into cliques." He noticed that some of the groupings that resulted from the activity utilizing the Myers-Briggs Personality Inventory (Humanmetrics, 1998-2003) at the November NID were "classic" demonstrations of how people with similar personalities could form exclusive circles and limit circulation of ideas with others. He wanted "intermixing of personalities" to counter this tendency. Gender was another consideration in this respect. The number of men in the school meant that female teachers had to be consciously dispersed throughout groups.

The idea of heterogeneous groups ran counter to the views of those who believed existing relationships formed the cornerstones of effective collaboration. One teacher suggested putting together the discussion groups from cognitive coaching partners, in which " three sets = one interdisciplinary team," because teachers already chose a peer to coach them on their professional growth plans. Others indicated that naturally occurring "units of identifiable professional relationships," or people with similar learning styles, would be likely to have shared values and be conducive to teamwork.

Continuing to call the discussion groups *teams* caused confusion for a teacher at the first meeting. "How much of a teaming spirit should we be getting into?" this teacher asked. "I had no input into the make-up of the group. There's no science member. It was a large group to have anything concrete or complex come out of. I have no reason to reflect and get back together with my group . . . there's no momentum. *Team* is a misnomer." This teacher also believed that having an appointed moderator on each team would have facilitated dialogue.

Two others said they preferred changing the groups for subsequent meetings to allow sharing of more ideas with more people, or to provide "a different mix of people." However, these appeared to be exceptions to the rule as all but one teacher did not opt out, most said they were comfortable with the others on their team, and several said they appreciated the diversity. A representative set of remarks of one teacher was: "I was very happy with the make-up and organization. What a wonderful group to be collaborative with. There is a good range of subjects. We're diverse and yet we can work together." This teacher welcomed the opportunity to get to know better colleagues whom he rarely worked with or even saw in the school.

From my own perspective as a participant-observer, I was mindful of the advice of DuFour and Eaker (1998) that "creating configurations for teams does not ensure an effectively functioning team" (p. 120). Organizing teams required awareness of the people involved and deliberately weighing and balancing relevant factors. To attempt to do this, and to add further discussion to the findings related to forming groups, I found it was helpful to use an ethnographic strategy to classify teachers by using analyst-constructed typologies according to their distinct approaches to, support for, and beliefs about interdisciplinary collaboration. By the end of my research, three groups with roughly equal numbers were identified. I have named them the *Cross-Curricular Collaborators*, the *Cocooners*, and the *Confederates*.

The *Cross-Curricular Collaborators* were highly committed to working in multiple projects with people who taught in other subject areas. Several assumed leadership roles and developed, promoted and coordinated initiatives, often teaming together to do so. They were able to articulate and advocate the virtues of collaboration and put in the extra work and time to make it happen.

Significantly, several of these were previously converted to the collaborative cause, having transferred to the high school from the local middle school in recent years. There they say they practised integration of course outcomes and teamed with other teachers with different specialties by grade level. One representative quotation: "I did cross-curricular work with others at the middle school. It opens doors for students to make connections in learning, and it opens doors with colleagues. It can create work but ease up work as well."

One new teacher said her recent teaching education program in university

emphasized collaborating with other student teachers for professional growth. She said she was very comfortable doing so with teachers at the school. The principal-appointee also identified a source for his enthusiasm for interdisciplinary collaboration as his graduate studies, though they happened several years before.

Not all individuals with this pro-collaborative approach had previous experience or education in working with other teachers. Some appeared to be idealistic, or to just believe in the worth of it. According to one: "A school is not a school without interdisciplinary collaboration, in my view. Some schools are organized around that--integrated curriculum, projects. It energizes and synergizes teachers and students. Another said: "Our school system does a poor job of putting education together. We compartmentalize. But that's not how students learn. They need synthesis."

Job descriptions or certain assignments of a few included cross-curricular roles and responsibilities, such as for the teacher-librarian. Another teacher wanted to engage in professional development via learning in collaborative groups with colleagues he did not work with much.

The typology for the *Cocooners* originated from the cultural audit. Phillips said many teachers in the school isolated themselves in their classrooms, in departments, or in cliques, and minimally participated in external endeavors or concerned themselves with school-wide issues. Of course, all teachers "cocooned" or focused exclusively on working with the students in their classes at times, but some notably more than others.

Workload was one probable reason for this. They were responsible for many students, had many classes with heavy preparation and assessment duties, or were challenged with helping students with special needs in inclusive settings. For several,

collaboration meant extra work, or at least different work, which removed attention from other responsibilities. "I don't have time to think about that right now," one teacher said when approached to join the Local Environment project, also indicating concern about balancing family and work life.

A couple of others expressed disillusion with school politics for not wanting to participate in any of the collaborative endeavors, including professional development days. Said another: "We talk and talk but nothing ever gets done, so why do it?" A few teachers were physically isolated by being in far ends of the building or in other buildings and had limited communication with the rest of the school.

Many of these people already contributed to extra-curricular, district leadership teams, or other out-of-class activities, and felt they were "already doing enough" to meet their responsibilities. A few did not attend all sessions of the cross-curricular teams or were "passive," or "quiet" or "reluctant" when they did, according to reports of fellow members. Some appeared to be swayed by the collaborators and the confederates if it did not involve too much risk or effort.

The term *Confederates* refers to those professionals who shared and emphasized the view that the autonomy of teachers, and of the school, was the primary consideration in any collaborative activity. They either actively resisted the influence of the board office (and sometimes banded together to do so at staff meetings) or they advocated for the status quo in terms of teachers being undisturbed to work individually or within current departmental arrangements.

Some of these teachers rejected the very notion of interdisciplinary collaboration outright. Asked one: "Why are we 'sold' on collaboration for everyone? Teamwork is not

my forte." Another said: "I don't get it. Now we're supposed to emerge from our cocoons to metamorphize or something?"

Others in this typology said they supported collaborative work if it was voluntary, initiated by teachers, and did not interfere with teachers' independence and decision-making in their own classrooms. An example was the 4Ls initiative. At least three wanted the cross-curricular teams to include work on the 4Ls project, and objected to the principal's desire to focus on the four areas of the district accountability contract. Two of these teachers did, however, participate in the cross-curricular teams after the purpose was modified. Based upon notes gathered from the teams' meetings some confederates were still critical of the initiative and brought a political element to the discussions that was off-topic. One telling comment was:

"There is a cynicism on the part of some teachers for top-down planned activities. The political climate has soured the work environment. Teachers need to retake / share leadership and enthusiasm for educational planning and change."

In the main, the confederates were middle-aged, experienced males. Perhaps these professionals exhibited signs of what Torres (1996) called "cognitive individualism," or maybe they preferred, as Hargreaves (1995) describes, "to cultivate their own gardens, making small changes with their own classes where they know their efforts will make a difference" (p. 16). They showed less concern about integrating curriculum, team teaching, or building school-wide thematic projects than about promoting excellence in student achievement in their individual classes. One of them said he saw himself as a subject-specialist who did not feel comfortable telling other subject-specialists how to teach.

While the people in each of these three typologies tended to exhibit common characteristics, it is important to note that several individuals did not clearly fall within one label or another, nor did some stay with one approach throughout the year. In fact, most people moved between these categories at least somewhat, and no one teacher exhibited all of the characteristics of a type.

The Political Context

The September NID revealed conflicting beliefs among the staff regarding the Phillips Report and the culture of the school, but most teachers appeared to favour developing cross-discipline collaboration, and several actively participated in the ventures that followed. Support and input continued with the other professional development days.

In the first semester collaborative teaming was driven mainly by teachers and support staff. Professional development days, school-based team reform, the 4Ls and Local Environment initiatives were started and maintained primarily through the ideas and voluntary work of teachers. During this first semester the principal announced his retirement effective the end of the semester. The long-serving vice-principal was appointed to a temporary principalship for the second semester, and two teachers in the school were made vice-principals. The principal-nominee openly set about an agenda for school improvement, which included establishing "cross-curricular teams" in the second semester to focus on improving student achievement and learning in reading, writing, numeracy, social responsibility and employability.

These goals were the same as those in the school district's *accountability contract* with the ministry of education. To develop plans and strategies for addressing these

objectives, which would form the basis for ministry reviews, the superintendent of schools had created "district leadership teams" comprised of teachers and administrators and backed with substantial resources. District administrators vocally advocated the concept of collaborative teaming of educators. The principal-appointee noted that the board office supported the idea of the school's cross-curricular teams in general.

Also at this time the provincial Liberal government put legislation into effect requiring that school planning councils (SPCs) be established in every school in B.C. These groups, composed of three parents, the principal, and a teacher as stakeholder representatives, were responsible for setting school goals and strategies for improving student learning, which were to align with district goals.

Many teachers were still dismayed at the provincial Liberal government for halting negotiations and imposing a contract the previous spring after a lengthy labour dispute. The new contract had limited potential wage increases, increased class sizes, and reduced the bargaining power of the B.C. Teachers' Federation. Individual job action, and attempts at collective, consensual job action continued into the next school year. They included a failed movement to stop all teacher participation in extra-curricular activities. A few teachers at the school saw the SPC legislation as another imposition designed to limit teachers' influence, because it was dominated by parents and had no role for union representatives. Near the end of the first semester, at a required meeting to elect the teacher representative to the council, a majority of teachers voted instead not to elect a teacher to the position as a protest against the provincial government. A teacher was later appointed by the administration--an action that was vehemently opposed by a few teachers. It was evident that this form of collaboration, essentially a form of school-

based shared decision-making, was not supported by many. There would be minimal teacher input into the development of the school improvement plan, which needed teachers' support if it were to get meaningful results. Other new administrative initiatives at this time were also viewed with suspicion by some; they might either increase workload or diminish teacher autonomy within classrooms.

A month later, the principal had modified plans for the cross-curricular teams. Rather than doing action research or projects around the four areas of learning, a discussion group format would be established to focus on key school issues: cross-curricular instructional approaches; measures to improve school culture; and strategies to address the school improvement plan goals. At the staff meeting when this was announced, the new principal was asked by a teacher if the cross-curricular teams initiative was coming from the superintendent--to which the answer was no. He said that teachers were being consulted on the purpose and structure of the teams, and that some were helping him facilitate the process, making this a "joint effort." These teachers were undoubtedly having an influence on the principal based on the changes that were being made to the teams, though he also made it clear that if the teams were to be given school time he would ultimately decide purpose and direction. There was little public objection to the idea after that, though some teachers expressed their disappointment to me that the teams would not be continuations of previous efforts such as 4Ls and Local Environment. School union representatives did not resist the idea either, and another two teachers consented to participate in the new arrangement.

After the first meeting of the teams some teachers said they doubted that the next two meetings would be as harmonious as the first because the discussion topics were

more controversial. Said one teacher: "It will be interesting to see how teachers approach this after the third meeting. The question could have a big bearing on the experience. It may not be as good next time if we're talking about culture." Others believed the discussion topics were necessary to develop a school-wide view among staff and to get past job-actioning. One said: "Our school is lacking a wholistic sense in the last three years. We are in pockets throughout the building. We need to do this. But we get caught up in politics and we forget that learners are why we are here."

The prospect of generating strategies for the school improvement plan developed by the SPC was a point of concern for a teacher who suspected the cross-curricular teams process was designed to "co-opt" teachers. The discussion topic "could become contentious," this teacher said. Most interviewees indicated that they would support the cross-curricular teams if they felt they were being listened to and their contributions were valued by the administration. A couple of teachers were concerned that the effort could fall apart if a different principal were appointed for the next school year--one who did not support it. "Our new administrator will be so important to the process. There needs to be a connection with the new educational leader, whoever that may be," said one. Another wondered: "Will school administration philosophies be compatible with different classrooms and collaborative interdisciplinary models?" Uncertainty about the future of the endeavor also seemed to make a few other teachers wary about committing themselves too much.

These anecdotes appear to support the work of micropolitical theorists as well. For instance:

> ...in practice, when teachers collaborate, they run headlong into enormous

> conflicts over professional beliefs and practice. In their optimism about caring and supportive communities, advocates often underplay the role of diversity, dissent, and disagreement in community life, leaving practitioners ill-prepared and conceptions of collaboration underexplored. (Achinstein, 2002, p. 421)

Learning Skills and Interdisciplinary Approaches

While they approved of collaboration in principle, many teachers appeared to be unsure about how to actually do it. Their previous learning of collaborative skills had been limited mainly to training in Cognitive Coaching, a method and set of strategies for supporting peer partnerships to reflect and solve their own problems in the classroom (Costa & Garmston, 2002). This approach provided a common language for teachers to openly communicate to improve classroom practice, and I saw it as a potential basis for further skill-building.

Other facilitators also believed that meeting in groups on school-wide projects called for teamwork abilities. The chief facilitator of the November NID reviewed and provided practise for participants in several of the Cognitive Coaching skills. During planning for the staff meeting when the cross-curricular teams were to be outlined, the principal also acknowledged that preparing teachers to work together was needed. The professional development committee also chose to make collaborative skill-building a consistent area on which to concentrate in further NIDs, so that "teachers have the tools to do it," said one member. Resources for direct and learner-centred instructional strategies, activities, exercises, surveys, and handouts were gathered and presented in order to stimulate the self-awareness and understanding of teachers.

For my part in assisting the principal at the February staff meeting, I utilized ideas

from *The Adaptive School: A Sourcebook for Developing Collaborative Groups* (Garmston & Wellman, 1999). The authors assert that for effective, results-focused group work to occur "members need consciousness and lenses for shaping personal decisions and behaviours in meetings" (p. 33). This requires individuals to balance personal goals with collective goals, acquire resources for his or her work, and share resources to support the work of others. Skills, defined as "something that someone knows how to do," for collaborating become norms when they constitute *normal* behaviour in a group. Garmston and Wellman identify seven norms they consider to be essential for teams to function. These skills incorporate the Cognitive Coaching skills of *pausing*, *probing*, and *paraphrasing*, with which many teachers in the school are familiar, but add *putting ideas on the table*, *presuming positive intentions of others, paying attention to self and others*, and *pursuing a balance between advocacy and inquiry* (p. 37). These teamwork skills were defined and discussed by teachers at the November NID and at the February staff meeting. Teachers were given several opportunities to practise and develop them.

Many teachers recognized the necessity for this learning after the first meetings of cross-curricular teams and agreed that these were essential skills for team members to have, based upon interviews with participants. Many of the skills they said were important to making the sessions productive were these seven norms, or variations thereof. The need for participants to *come prepared* for the meetings with ideas to share was most frequently mentioned. Their criteria for coming prepared included engaging in "prior reflection," as well as "gathering and organizing examples," and being able to "present" and "articulate ideas." Several of the skills they described were more like attitudes or habits of mind, such as "open-mindedness," "avoiding negativity,"

"flexibility," "willingness to take risks," "being extroverted," and "valuing the ideas of others." Others were *interpersonal abilities*. These meant being "inclusive" of others, "moderating comments," willing to "follow meeting formats," capable of "moving on" with the topic at hand, "not dominating discussion" nor forcing others to speak. Recognizing and assuming *roles* such as the moderator, the "idea-guy," the pragmatist, and the peace-maker, would also have contributed to productive meetings, an interviewee suggested. It was apparent during my observations at the first meeting that some teachers were better suited to, and more comfortable, in certain roles than were others. For instance, one teacher consistently sought to include and seek the input of all members of the group on a given topic. Another teacher often acted as an analyst of the ideas that were put on the table, injecting a critical perspective as to the applicability of strategies for various disciplines, classes and teaching styles. "Actively listening" to peers and "talking in language all can understand" (ie. avoiding obscure jargon) were *communication skills* another teacher stressed. She proposed highlighting and focusing on a "skill set" for each meeting that groups could formally practise and rehearse.

While teachers informally modelled their collaborative abilities to colleagues, there were also indications that other teachers learned from them. For instance, an interviewee said that a teacher in his group "translated" some of the comments of other members, putting their ideas into different words. This was not done in an "arrogant" way, and the teachers who made the original comments were not offended, according to the interviewee. "It made some things clearer for me," he noted.

Two teachers said they tried to encourage discussion of curriculum integration in their different groups but were met with "blank faces," as if it were a "mystery." This

echoed a conversation I had previously with my partnering facilitator of the Local Environment group. This teacher had pointed out that all current ministry curriculum guides (Integrated Resource Packages or IRPs) contain *Cross-Curricular Outlines* for blending studies across-disciplines, merging prescribed course outcomes, and increasing relevance to students, though teachers rarely "pay attention to this part" of the IRPs when creating their course outlines. Another interviewee said that developing teachers' knowledge of curricular wholism, classroom practices for connecting learning with other subject areas, widely-applicable assessment approaches, and organizing thematic projects to combine courses, teachers and students might take specialized training. He added: "We need someone with a high degree of organizational skills to ensure that meaningful integrated assignments are available and that a framework for cross-curricular evaluation is available."

The principal also noted the need to have able and knowledgeable coordinators to facilitate interdisciplinary work. He offered to send a teacher on a site visit to study a school where interdisciplinary collaboration was being successfully conducted. He also wanted a facilitator to gather ideas and summarize notes from the teams detailing the content of their discussions, and to distribute these staff-wide in order to develop coherence between groups. This would require analyzing, writing and communication skills, he pointed out.

I attended various workshops inside and out of the district to develop knowledge of collaborative skills, such as leadership teaming and Data-Driven Dialogue workshops (Lipton & Wellman, 2002). These workshops, however, did not deal directly with effective group facilitation, and so I sought ideas from literature. Garmston and Wellman

(1999) stress the importance of having confident and skilled facilitators of collaborative groups. They say the following about good facilitators:

> They are flexible. They follow principles, not rules. They improvise. They know their own cognitive and emotional styles and can work beyond them when to do so will serve the group. They are comfortable with who they are and can set aside judgments about others. They are clear about their intentions. They think about outcomes. They are reflective and learn from experience. They can direct or request, be firm or soft, be serious or light, and focus on tasks or relationships. They have abundant knowledge about processes and groups. They are effortlessly competent with many facilitation moves. They also know that they have more to learn and are continuous learners. (p. 87)

These characteristics resonated with me because I had noticed several of them reflected in the people facilitating the NIDs and the workshops, as well in the current and previous principals. I often reflected on these in my notes, and used them to help distinguish my role as a facilitator from my role as a researcher.

Designing Collaborative Systems

Early on, the practical matter of how to build interdisciplinary forms of collaboration into the way the school was organized was on the minds of some staff members. At the September NID, comments included:

- "The department structure invites divisiveness as well as alienation."
- "'box thinking,' protecting territories, positions, status"
- "community instead of cocooning"
- "the action plan should have an evaluation of how departmental structure

effectively operates toward goals"

- "breaking cliques, barriers to collaboration"
- "How can we do this within the current system? Change the system?"

There were many system-related difficulties within this largely traditional high school that had to be considered. For instance, the curriculum was broken into disciplines of study which did not appear to be easy to join. There were many courses and many prescribed learning outcomes for those courses, indicating a need for complex solutions.

Some teachers said it was their job was to cover the mandated curriculum, particularly in the Grade 12 academic courses, such as history or physics, which prepared students for provincial examinations. "If my students do not do well on the exams then they might not get into university," said one of these teachers. Collaborative work to integrate curriculum was secondary to this important task. Raising provincial exam scores was what the Liberal government wanted anyway, this teacher pointed out.

The curriculum guides (IRPs) for Grade 12 courses included directions for building diverse skills by integrating cross-curricular interests (B.C. Ministry of Education, 1996). However, designing separate IRPs for most subjects does reinforce the traditional disciplinary liberal arts emphasis of the B.C. Ministry of Education. Universities were also organized into disciplines, and universities set admission standards for students entering from secondary schools.

As of this writing, the ministry of education was changing the graduation program to provide more concentration for students' personal and social development and to offer more opportunities for non-university-bound students to gain employability skills while preparing for other career pathways. As part of the new graduation program, several

academic courses in Grades 10 and 11 were to soon include provincial examinations. Whether this would present more barriers to integrating curriculum, or perhaps reveal new opportunities for grade-level teachers to team up to improve the learning of groups of students, remained to be seen.

Teachers were usually assigned course loads based upon their post-secondary background and subject-specialty. Many tended to think of themselves as English or science teachers almost exclusively. Organizing them into departments enabled them to work together for curriculum development and instructional enhancement (in varying degrees) but it may have also isolated them from colleagues who did not teach the same kind of courses. Most of these teachers taught a particular grade level, further specializing and separating them from others within their own department. Much of the time what passed for *intra*disciplinary collaboration occurred during mandatory department meetings where sharing and management of resources was the main topic.

The eight departments were managed by paid department heads. These head teachers provided curricular leadership within a disciplinary or special area, managed resources, and acted as liaisons to the administration. The department heads met in regular meetings with administrators for advisory and communication functions, which comprised the only consistent interdisciplinary body in the school. Much formal cross-curricular work was often limited to these people--a fact that clearly bothered staff members who wanted more say in school decision-making or opposed a hierarchy of authority. Several teachers, such as those in fine arts and physical education, were without representation of department heads. Competition for scarce resources in a time of shrinking budgets sometimes set departments and teachers against one another at these

meetings. A system of school-based budgeting requiring input of teachers into decisions of dollar allocations may have exacerbated this situation.

Such a departmental structure is typical of many high schools, and has been identified by other researchers as an obstacle to interdisciplinary collaboration. Inger (1993) writes:

> Working within departments organized by subject, teachers affiliate with others in the same field in professional associations and informal networks. Inevitably, the privacy in which teachers work--the insularity of the classroom--sustains teachers' stereotypes regarding the nature and importance of subjects other than their own. Thus, the capacity of teachers to pursue new curricular and organizational forms is limited not only by their relative isolation from one another in the school day, but also by the insularity of subject and departmental boundaries. Given these barriers, teachers have scant basis, opportunity, or reason for meaningful collaboration with teachers in other departments. (Subject Affiliation and Departmental Organization)

I wondered how we could counter curricular fragmentation and stimulate collaboration. Creating formalized interdisciplinary structures to unite disparate areas and teachers immediately opened up new possibilities. When teachers began to gather and dialogue in an interdisciplinary fashion many said they realized the potential for working together. School-wide issues such as student absenteeism and littering emerged and teachers brainstormed action plans that all could participate in, such as the 4Ls and recycling schemes. Poor student achievement and learning in reading, writing, numeracy, social responsibility, and employability skills could then be seen as everyone's

responsibility, and not only the concern of English, math, social studies, and career education teachers, or counsellors and administrators. Some teachers did share these concerns at the first cross-curricular teams meetings. Questions such as how could science teachers help students develop numeracy skills, and how could industrial arts teachers contributed to better literacy achievement on provincial assessments, were raised. Teachers started to talk about what works in their classroom and shared ideas for making them work in other classrooms. For instance, one teacher said he was "surprised" to see that so many teachers used learning simulations in their classes and sought suggestions for using them in a science class. Another said he would re-consider student self-assessments in light of the positive experiences of other teachers in the group. Teachers in this group emphasized finding curricular similarities and commonalities rather than dwelling on differences.

To counter-balance the splintering effect of the department system, the principal recognized a need for a formal position in the school to facilitate interdisciplinary unity. He and I briefly discussed the possibility of scheduling time during the next school year for a lead teacher to act as a cross-curricular coordinator. The formal role could involve planning, communicating, developing resources, and promoting collaboration, as well as helping to plan student activities. This would depend on budget and timetabling considerations. Creating a budget account with funds for resources and materials might accompany this. For the time being though, needed resources were purchased using library accounts and facilitators were to be volunteers.

Interdisciplinary work may have also been restrained by having departments and teachers located in specific zones and rooms in the school. Some programs, such as

media arts and business education were offered in adjacent buildings. The physical area of the sprawling single-story building made it difficult for teachers to literally get together. Many teachers rarely ventured into the shop wing or music/drama area. Other than the small staff room, there was no place (other than classrooms) identified for teachers to meet and plan together, though there was space available. Designating a comfortable room with supporting technology and resources for collaborative work was the idea of one support staff member.

Separate rooms in a central area of the school were chosen as the sites of the first cross-curricular meetings. Many people said they welcomed the chance to get out of their classrooms, to converge in a "warm" and open area, and partake of refreshments. One teacher suggested holding future meetings in other areas of the school to offer teachers a chance to see different classrooms and allow individuals to invite other team members into their rooms.

Partly because of the school's configuration, communicating with staff required various means. Computer technology was being upgraded to improve communication between disparate areas with administration, but was still inadequate. Network connections existed in every classroom but many of the computers were outdated. Email offered a way for some teachers to effectively communicate but several others lacked the skill or interest for using it to full potential. "Face-to-face meetings" were thought by one teacher to be less technical and more personal for the kind of collaboration she wanted to do. Most school-wide announcements occurred via the PA system, which was inaudible in some places. Memos distributed to staff mailboxes in the main office did not get regularly picked up by some people. Consequently, much information related to

collaborative work was transmitted verbally and passed from person to person, or required using a combination of communication systems, which necessitated redundancy at times.

The matter of what to do with hundreds of students while teachers were collaborating was another organizational issue. Providing meaningful and educative activities became the responsibility of administrators and some non-enrolling teachers. Student council was consulted in planning activities for one of the occasions. Grade 10 and 11 students were removed to the gym for presentations on drug abuse. Grade 12s went to the theatre to participate in preparations for graduation events. Reports from organizers were that these activities generally went well, though it was difficult to manage so many students with a handful of supervisors in two large areas. The next meeting was to be during with the bi-weekly Career and Personal Planning classes. Students would be split again between the gym and theatre (because neither space was large enough to hold the entire student body) to hear presentations from community members for course assignments. The last meeting was to coincide with a school-wide clean-up campaign, in which students were to remove litter from school halls and grounds. This idea arose from the Local Environment collaborative group the previous semester. After the first meeting, the principal said that having meetings during the school day next year would depend on being able to provide manageable activities for students. Some students were unruly and there were not enough supervisors to monitor them adequately. A better plan and system would have to be worked out prior to planning future cross-curricular meetings, the principal said.

The Pace of Change

Becoming a collaborative school takes patience. Facilitators made deliberate efforts to move forward while recognizing that the process should also unfold gradually with the involvement of teachers. In an interview with Dennis Sparks (2003), Michael Fullan said embedding change into the culture of a school requires a change in the culture of teaching. He elaborated:

> We know that when we think about change we have to get ownership, participation, and a sense of meaning on the part of the vast majority of teachers. You can't get ownership through technical means; you have to get it through interaction, through developing people, through attention to what students are learning. (Leaders Must Reculture)

Fullan said that if teachers are going to investigate and share new ideas for improving their practice, then sustained interaction is needed to first translate information into knowledge. Knowledge may then become wisdom. This process necessarily takes a great deal of time to build relationships and establish norms of continuous interaction.

Change begins with catalysts, one of which in this case was the *Phillips Report.* The consultant's study at the end of the previous school year recommended that cross-discipline teams and interdisciplinary sharing might serve to build collegiality and overcome a low sense of efficacy among staff. The report was straightforward about many aspects of the school's culture and sounded a clear call for change. The school's professional development committee chose three of the less controversial aspects to emphasize for the September NID: a) being a welcoming school, b) differentiating instruction, and c) interdisciplinary collaboration. However, the report still sparked an

emotionally-charged debate and divided staff pro and con cultural audit. Collaborative initiatives and professional development activities began soon afterward. Whether these actions would have occurred if the report had not been done is hard to say, since the report reflected the views of people who might have pursued them anyway. It is reasonable to say the cultural audit coalesced, highlighted and communicated these views to the school community and encouraged those educators who wanted to collaborate for school improvement.

The 4Ls and Local Environment initiatives in the first semester were the first experimental efforts. As such, they overcame inertia for change because somebody had to actually do something to get going. While questionable in terms of their intended results, these experiences provided proof of the desire of many teachers to collaborate. The Local Environment group started with just two teachers, and grew to include 16 at one point. "Now it's rolling, though limited mainly to the recycling," said the other facilitator at the end of the first semester. "Maybe we can do more next year." Another facilitator said after the March cross-curricular teams: "We tried some things, but now it needs to become a consistent emphasis and grow by formalizing it." These efforts may have planted and germinated the first seeds of interdisciplinary collaboration.

These small test-runs also yielded valuable lessons for volunteer facilitators and participants prior to creation of the cross-curricular teams in the second semester, including need for time during the school day, focusing purpose, improving communications, and involving teachers in development. The principal heard these ideas both from myself and from the 4Ls facilitator, who agreed with me that the effort was a good learning experience.

The three professional development days for the school year all fell within the first semester, which also served as opportunities to advance the collaborative cause. These days were spaced about two months apart -- not too close together to bore participants with the same thing over and over, but not so far apart to lose a consistent focus and progress in stages. The September NID attained staff consensus to try interdisciplinary collaboration. Accordingly, the professional development committee researched and planned the next two events with this direction in mind. One of the outcomes for the November NID was: "Staff will build school-wide collaborative capacity by developing communication skills and participating in interdisciplinary teaming structures." Input from teachers, support staff, and administrators was actively sought out and integrated well beforehand. The agenda contained activities about collaborative norms of behaviour, benefits of interdisciplinary collaboration, Myers-Briggs Personality Styles awareness, and optional interdisciplinary "theme teams" entitled Local Environment, Social Responsibility, Multiple Intelligences, and Arts Enrichment. It also included an opportunity for teachers to work within their departments to develop lesson plans to differentiate instruction in certain disciplines. Only five teachers chose the latter option.

Feedback from staff about the "energizing" and "positive" feeling of this day regarding interdisciplinary collaboration was also affirmed by two of the incoming administrators. The principal-appointee called it "a great day" and told me the next morning that he was considering the possibility of creating formal cross-curricular teams and wanted my advice. He also encouraged continuing with the topic of interdisciplinary collaboration for the next non-instructional day.

The professional development committee's agenda for the January NID again contained the outcome "Participants will develop awareness of collaborative strategies and interdisciplinary (cross-curricular) teaming for school improvement initiatives." Exploring instructional and assessment strategies applicable across grade-levels and content areas once again allowed interdisciplinary grouping. Other activities and readings featured professional learning communities as defined by DuFour and Eaker (1998) and collaborative action research (Alberta Teachers' Association, 2000). Toward the end, input was gathered from staff regarding the now-active development of cross-curricular teams for the second semester. At the wish of the principal, I converged these ideas into a document that was distributed to all teachers and administrators. The principal modified plans for cross-curricular teams after a subsequent staff meeting, citing the suggestion "go slow to go fast."

One teacher said the November day was "artificial" and that true collaboration needed to be relevant to accomplish anything. Another teacher, commenting on the developing cross-curricular teams at the January NID, said: "How come we never evaluate the methods that we are collaborating (sic) to find what is good and useful and what is bad instead of moving to the 'new idea of the day?'" What both of these teachers seemed to signal was that collaborative work should arise from previous work and progress in a more natural or organic fashion.

However, these teachers and most others did agree that the first meeting of the cross-curricular teams were similar to the professional development days. One interviewee said some teachers were locked into a pattern of working alone and did not want to change. The professional development days helped people to "buy in to make the

extra effort," he said. Only one of the teachers interviewed said the distance between those days and the first meeting made it hard to see a connection. Thus, the professional development days, while apparently somewhat contrived, appeared to generate momentum for interdisciplinary teaming and helped to renew efforts to keep it going in a new way.

Conclusions

Recommendations on Method

A qualitative study such as this generates a large amount of data, particularly notes from observations, reflections and interviews. As a participant observer it was difficult to manage all of it while also doing my day-to-day job. To keep track of the paper trail, it makes sense to manage data from the outset and systematically store it for easier retrieval and referral later on. In hindsight, an action research journal would have also been an effective way to take notes and record my thoughts in one place. Simple notebooks could be divided into sections, such as primary observations, reflections, informal discussions, and reflections, and kept in chronological order.

I would advise practitioners embarking on similar research to carefully develop for themselves a method to analyze data that will lead them through the confounding maze of information they will encounter. Without the process of thematic coding, determining my findings would have been extremely frustrating. I found this part of the study to be challenging but very interesting.

Recommendations on Facilitating Interdisciplinary Collaboration

Several conclusions arise from the findings to address this project's research question: *In what ways may interdisciplinary collaboration be facilitated?* These conclusions are particularly relevant to the case school studied in this time and place, and may help to assist planning for future collaborative teaming. They are not permanent, nor comprehensive solutions. These are necessarily subjective and tentative because "there are not always right or wrong answers in action research; rather, there are possible solutions based on multiple view points" (Alberta Teachers' Association, 2000, p. 5).

Readers should be aware of this when considering the relevance of these conclusions for other school settings and situations. Comparison and contrast may offer insight.

First, *make time for teachers to collaborate during the workday*. Providing the right time for teachers to work together may be an insufficient factor alone for stimulating collaboration (Peterson, 1999), but it was clearly an essential prerequisite to enabling collaboration in this school. Recognizing that time must be built into the school day, or into the school schedule, shows teachers that collaboration is valued. Moreover, building teamwork and achieving positive results requires sufficient time.

Seek a shared vision and values supporting interdisciplinary collaboration. Whether it is the ideal of the learning community, or even the view of a better high school in the future, interdisciplinary collaboration should be a part of it. Identifying shared values is very difficult because so many individuals are involved, but reaffirming norms of behaviour that emphasize caring, communicating, helping one another, focusing on learning, and continuing to improve are a place to start.

Whether the status quo vision, based on the traditional high school model, would continue to highlight the culture of this school remains to be seen. Some of the values / beliefs (which I interpret as "don't bother me about what I do in my classroom and I'll leave you alone," and "I'm only responsible for what happens in my classroom" and "Teachers have different roles to play and they should stick to their own jobs") in the school were not supportive of interdisciplinary collaboration. I had assumed naively that all teachers wanted to work together more but that the system restrained them from doing so. Little (1990) warns of the persistence of norms of privacy.

Focus the purpose of collaborative work but be flexible and inclusive. To get

meaningful results, interdisciplinary grouping in this setting needed goals and targets that were realistically attainable, had appropriate time frames, and were capable of producing clear evidence to gauge progress.

At the same time, the purpose of collaboration had to be somewhat capable of being changed and adapted to the many people involved, so as to be inclusive of their subject-areas, priorities, interests, strengths and personal styles. This fosters ownership and commitment among team members, and prevents *contrived collegiality* (Dawe & Hargreaves, 1990).

Be practical when forming groups of diverse teachers. Simply placing together many different people and expecting them to generate synergy and results is not fair, nor reasonable. Facilitators must strive to understand the people they are placing together, and be sensitive to their needs.

Developing the three classifications of teachers was useful to me for trying to comprehend behaviour and group dynamics, and for recognizing emerging obstacles and opportunities during attempts to stimulate collaborative activity. From a practical perspective, identifying teachers according to their support for collaboration was necessary for putting together balanced cross-curricular teams. A team composed mainly of *cocooners*, for instance, might have been ineffective. A group of *confederates* might have actually subverted the purpose. Distributing *collaborators* evenly amongst the four teams might have exerted a generative influence.

Know the political context and engage in positive politics. Realizing that schools, school districts, and ministries of education are systems and political arenas is necessary to get people working together in new ways. These organizations are intricately

interconnected, bureaucratic structures. No change happens in a vacuum; cause and effect dynamics ripple throughout the system in many ways. Schools are also human communities where conflict is natural. Politics is the way a group of people get things done. However, this does not have to be negative (Blase, 1988). Personal interests, values, ideals and goals of people sometimes clash with those of others, but compromise and fairplay can soften competition. Individuals and groups seek to fulfill their agendas as they assume and defer to roles, and may have to share scarce resources. Support for new initiatives, such as interdisciplinary collaboration to improve student learning, must be generated by building strong alliances and convincing people of the worth of doing it. Furthermore, Covey (1989) says that seeking cooperative win-win solutions in interpersonal relationships, in opposition to competitive win-lose approaches, increases the likelihood of mutual benefit (p. 207). This could also result in wider acceptance of a collaborative initiative and enhance participants' commitment to an action plan.

Collaboration brings people together but also heightens the possibility of conflict as values are made public, issues emerge, and power dynamics are played out in new venues (Achinstein, 2002). So it was in this school. Who would determine the purpose and direction of collaborative work became a point of contention, perhaps because of the political environment and history of the school. For years, a recurring source of conflict between teachers and administrators here had been characterized by some teachers and administrators as "top-down" vs "bottom-up" school improvement approaches. In other words, reforms initiated by teachers, as opposed to changes required by administrators. Some influential veteran teachers actively and vocally resisted some changes initiated by the ministry and district.

I believe that three events in particular contributed to the re-emergence of this ongoing political issue in the school in connection with interdisciplinary collaboration: (a) changing school administration (b) the creation of the district's accountability contract and district leadership teams, and (c) the requirement to establish a school planning council and create a school improvement plan.

The political climate and changing leadership influenced how interdisciplinary collaborative teaming would unfold. Who determined the purpose and controlled the teams was a matter of disagreement between some teachers and administrators. If it was seen as being at least somewhat bottom-up and reflected the influence of teachers, it seemed to stand more chance of being supported at the grassroots. However, without the leadership of school administrators the effort may have failed too. Support for school-wide interdisciplinary collaboration either had to exist or be developed at multiple levels and among key agents to make it happen.

Help teachers learn and practise teamwork skills and interdisciplinary approaches. Just as we should not assume that all students have basic abilities, facilitators should not assume that teachers have skills as collaborators. High school teachers need tools and knowledge to work together, especially with colleagues from other disciplines. Judith Warren Little (1990) and DuFour and Eaker (1998) warn that not training teachers in group processes, and not continuing to reinforce skills, can result in trivial change, or worse, negative norms of privacy and isolation can be strengthened in their discussions.

Teachers can teach each other too. Learning from each other sustains and grows collaborative capacity one teacher at a time by tapping and sharing the strengths they

have to contribute. Barth (2001) says collaborative teachers giving and receiving "craft knowledge" can bring about school reform (p. 62).

Design interdisciplinary collaboration to fit the school and modify systems to accommodate interdisciplinary collaboration. There are many ways to conduct interdisciplinary collaboration. It is important to identify and tailor the approach most appropriate for a given high school. The different efforts at interdisciplinary teaming in the case school required strategies to deal with curricular segregation, departmentalization, physical isolation, inconstant communication systems, and management of students. The ability to restructure some of the ways the school operated, and to effectively solve systemic problems on an ongoing basis, would be critical to sustaining the collaborative work.

Go slow to go fast. This conclusion arose from a participant's suggestion for creating interdisciplinary teams during the January NID. Substantial changes in education rarely happen overnight. Tentative steps can become confident strides over time. The desire of many educators to try interdisciplinary collaboration resulted in voluntary teaming initiatives, professional development activities, and, eventually, formal school-wide interdisciplinary teams.

This progress could not have happened without the participation and perseverance of key educators as leaders and facilitators. These collaborative professionals planned activities, built trusting relationships, networked, articulated and promoted visions, modelled skills, overcame inertia, and kept a focus on interdisciplinary collaboration throughout the school year. These teachers clearly validated what Fullan (1993) says about the need for teachers to exercise moral purpose and become change agents.

Teachers must develop and tap their personal strength to enable them to get the right things done.

Change in this school required catalysts, the idea of starting small, a desire to learn from experience, teamwork, having persistent change agents and facilitators, strategic planning balanced with natural progression, and opportune professional development days to cultivate understanding and support. The initial process of becoming a more collaborative and interdisciplinary school this year was necessarily slow to explore and experiment, to build support among teachers, and establish roots for future growth.

Final Statement

In considering what was ultimately learned from this study of interdisciplinary collaboration the project's sub-title comes to mind. Was there professional growth of teachers? Was there school improvement? (The two aims are linked because teachers' professional growth contributes to school improvement.) I believe the answer to both questions is affirmative. In what specific ways and to what degree, however, is harder to discern. Certainly, most teachers expressed enthusiasm for collaborating, and did explore and learn more, about how to do it. They shared ideas and inquired into new approaches. They implemented some concrete initiatives. They set goals and strategies. Most significantly, teachers regularly sat down together and talked about what could be done to improve their practice, the learning of their students, and what would make the school better. In this sense, it may not matter whether the effects of interdisciplinary collaboration in this first year can be specifically measured, because cultural norms of interaction were established and reinforced, having potential to further generate teachers'

professional growth.

As to long-term school improvement, gauging the impact of change requires more information. It would take further time and study to see if interdisciplinary collaboration continues and has lasting effects in the case school. Based upon current indications, cross-curricular teams will be a priority of the new administration and of many teachers in the next year. This could be the opportunity for the "rubber to hit the road"--to clarify and focus the teams, further build teamwork, and get firmer results. The learning that occurred in this project will be useful in making new attempts at facilitating interdisciplinary collaboration more likely to be successful, though the learning, inventing and problem solving will continue.

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Appendix A

November NID Detailed Questionnaire

Has collaborating today affected you in any noteworthy way? If so, how?

_____
_____
_____
_____

Could it have been more effective if done differently? How so?

_____
_____
_____

How has working with teachers of different disciplines been different than working with teachers within your own subject-area or department?

_____
_____

What are some difficulties or obstacles in collaboration?

_____
_____
_____

What might we do to make future interdisciplinary (cross-curricular) collaborations successful?

_____
_____

Is there one thing you may do differently in your classroom as a result of this professional development session? If so, what might that be?

_____
_____
_____

Please complete the following sentences:

Differentiated instruction is . . .

_____
_____.

Interdisciplinary collaboration is . . .

_____
_____.

Appendix B

Participants' Feedback from January NID

Re: Questions and Suggestions for Establishing Interdisciplinary Teams

- Schedule time within common blocks in the timetable to meet
- Can collaborative teaming be in professional growth plans?
- Ability to collaborate is essential to social improvement
- We must create shared values
- Examine and modify beliefs of the team
- How much time is necessary to accomplish true collaboration?
- What values do we (students, parents, teachers, AOs) deem as shared?
- Break teams into "learner types"
- Collaborative teams work because we have much more in common in how we teach and evaluate than we have differences
- Collaborative teams share a common purpose
- Can we challenge each other's beliefs "gently but relentlessly?"
- 3 sets of Cognitive Coaching (Costa & Garmston, 2002) partners = 1 interdisciplinary team
- What happens when a person's participation is only minimal in your collaborative project?
- How come we never evaluate the methods that we are collaborating to find what is good and useful and what is bad, instead of moving to the "new idea of the day?"
- Evaluate what we are doing first

- Need to have a value/ethic at the school of constantly embracing/looking for new ways of doing/thinking about things if they're going to change for the better
- We need to model collaboration if we want the kids to do it too
- How can we do this within our current system--change the system?
- We have to make sure this is palatable for everyone involved and still honor everyone in the system
- How to establish shared understandings and common values needed as basis for professional learning communities
- Time is needed for collective inquiry
- How can we fit this into day-to-day activities?
- New strategies need more than one rehearsal--to incorporate into practice we need to review strategies again/often
- How will this pan out?
- The "deep learning cycle" in Professional Learning Communities at Work (DuFour & Eaker, 1998)
- How can continually re-inventing everything we do possibly be "stress-free" too?
- We need some time set aside to actually "collaborate"--not just talk about it
- How are we going to advance as a collaborative school with no more NIDs?
- Will we still be able to meet at this?
- Provide release time for specialized collaborative teams
- Identifiable units of professional groups
- On NID meet with smaller groups
- Why are we "sold" on collaboration for everyone? Teamwork is not my *forte*

- Is there a way to involve more at-risk students in School-Based Team efforts via group sessions around certain issues? e.g. attendance or lateness--students in groups with counselors dealing with this problem together?
- Assign teachers who are becoming members of an interdisciplinary team the same prep block so they can plan together
- Aim teams to do action research on school goals and improvement issues
- Be purposeful / seek results
- "Go slow to go fast"--start small

Appendix C

Questions for Interviews

Questions Asked of Teachers After First Meeting of Cross-Curricular Teams

1. Describe your past experiences collaborating with colleagues from other subject areas. How is this initiative the same or different?
2. Is interdisciplinary collaboration worthwhile? Did the professional development days influence your response?
3. What do you see as the purpose of these teams?
4. How are you approaching this? Do you think teachers will embrace it?
5. What do you think of the questions to address, the meeting times, make-up of the teams, or anything else about these teams?
6. What difficulties, obstacles or restraints do you foresee? What concerns, if any, do you have? What is needed to make this work?
7. What do you see yourself doing in future meetings? What skills, knowledge, or approaches do you or teachers need? Are the 7 Norms of Collaboration helpful?

Questions Asked of Principal After First Meeting of Cross-Curricular Teams

1. Why did you decide to create cross-curricular teams? What do you see them accomplishing? What is their purpose? Why should teachers do this?
2. What is "cocooning" and what does it have to do (if anything) with cross-curricular collaboration? How is it related to school culture and the concept of learning community?
3. How does cross-curricular collaboration fit in a departmentalized school? What

are some advantages and disadvantages to departments?

4. How did this initiative develop since November? (Describe what happened)

5. Why did you change the format of the teams from the four learning areas (literacy,

numeracy, etc.) to the discussion topics you chose? Was conducting action research, or creating integrated topics, thought to be too difficult or time-consuming? What influenced you?

6. Will this continue to be supported next year? If so, will there continue to be time for collaboration during school hours? Will release time for teachers be provided and budgeted for?

7. What might the teams look like next year, and what might be their purpose?

8. What is your belief as to teachers determining the purpose and make-up of collaborative groups? To what degree or in what ways should they be involved?

9. What are some difficulties or obstacles to facilitating and supporting collaboration? What makes it hard to do? How can we overcome them?

10. What are some ways to support and encourage collaboration? What skills, abilities, or attitudes do teachers need to have?

11. What does effective collaboration look like? What are people actually doing?

12. How is this viewed by administrators, staff, students, parents, and board office administrators? Is there much support? Is there skepticism? Do some people see this as a waste of time? Are they optimistic?