CHAPTER 1 4

CLASSROOM MANAGEMENT IN THE NETWORKED CLASSROOM

NEW PROBLEMS AND POSSIBILITIES

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During class one day I happened to be by the printer when a jam occurred I decided that I would handle the problem since I was next to the machine, although, usually students took care of this sort of troubleshooting. One of the students was quite insistent that he take care of the problem. He said he really needed the picture. He was so insistent that I sensed immediately that there was more to this situation than I was being led to believe. I asked the student to return to his seat. He did so reluctantly. There was a real buzz going on throughout the room. All eyes were riveted on me as I pulled the tangled piece of paper from the printer. It was exactly as *I suspected; a very explicit centrefold of Pamela Anderson in her birthday suit.*

The emergence of new information and communication technologies on the educational horizon brings with it many possibilities as well as many challenges for teachers. Often, it is the technical aspect of learning how to use new electronic tools that is highlighted when we think of these challenges. There's no doubting the fact that learning to use new tools represents the first step, one that encompasses its own challenges for teachers and requires an investment of time, energy and effort. However, we cannot overlook the fact that teachers face other challenges besides technical ones as they integrate new technologies into their existing practices. In many instances, it is not the technical issues that will challenge teachers in their use of emerging information and communication technologies: it is the pedagogical ones. More specifically, teachers will have to grapple with problems related to classroom organization and management as they begin to work in networked classrooms, i.e., classrooms where computers are not only connected to each other, but, as well, to the Internet. Problems like the one faced by the teacher in the excerpt at the beginning of this chapter highlight some of the dilemmas that teachers are facing with technology integration. Yet,

the solutions they have devised in the past often don't fit the problems which they face in the new networked classroom. For this reason, we have a situation where relatively experienced classroom teachers are having to face new classroom management issues.

Information overload, multi-tasking, monitoring and control, increased workload, changing roles: these are some of the issues which teachers are facing as they begin to integrate technology. These are some of the issues considered in this chapter that explores new pedagogies in general and classroom management in the networked classroom in particular. The issues are explored in relation to cases which are meant to reflect the lived experience of teachers in the day-to-day organization and management of their networked classes. Different cases are included in order to portray the experiences of teachers from primary to high school in classes where there are only a few computers to situations where there is high access to technology For each case, the situation of one teacher is described. While the situations represent constructed cases, they were cases constructed in part from the transcripts of a study of teacher beliefs about online learning. They were nonetheless designed to reflect as accurately as possible real individuals in real classrooms. The situations are followed by a "reflection" which is designed to provide some possible problem-solving options. The reflection places the case into a larger context and provides an opportunity to appreciate and understand the case in light of broader pedagogical issues. The situation regarding the centerfold that was described at the beginning of this chapter may be exceptional. Yet, the problem is very real and, perhaps, fairly common. Solutions to classroom management in the past might simply have involved rearranging the class or the seating arrangements. As the cases that follow will illustrate, in the networked classroom, the computer acts as a catalyst for re-organizing instruction, revising roles and, even, rethinking practices. This chapter provides a starting point to begin thinking about why and how the networked classroom can potentially lead to changing instruction, roles and practices.

INFORMATION OVERLOAD SITUATION

Initially, I was delighted to find so much information on the Internet related to the rain forest. Our school's library was not well stocked and our community's library was worse still. For us, certainly, one of the big advantages of having an Internet hook-up was that it provided

access to resources that we would never have otherwise because of our geographic isolation and because our school was so small.

When the project first began I showed the students how to use the search engines. We typed in *rain forest* with the quotations just as the learning resource teacher had showed us. If we had just typed in *rain forest* without the quotations, we would have had over 1000 sites. However, even using the quotations, the number of sites returned to us was still a problem because it listed almost 60 sites.

Students started searching through these sites but often turned up dead links, sites that weren't at their level, sites that weren't on the topic, sites that were too long, too short or simply inaccurate. While I had, at first, welcomed access to the Internet, I now felt overwhelmed by the amount of information in front of me, and in front of the students. I also felt quite disoriented while searching. At least when I have a book or a number of books in front of me I don't lose track of where I am or of what materials I am using. I can't say the same for using online resources. It was obvious that we were going to lose a lot of time and that we would not finish the projects as scheduled.

REFLECTION

There's no doubt that the Internet's capacity to provide its users with up-to-date and voluminous information is one of its great advantages. At the same time, ironically, others would argue that it is also one of its greatest disadvantages. Schools are used to dealing with information and knowledge. Information is to schools what money is to a bank. In the past, we have relied frequently on this banking analogy to describe the process of transmitting information from the teacher to the student. The "money" was transferred to the students where it could be invested for later use. The Internet reminds us why this analogy can no longer work. In this information age, schools cannot rely solely on transmitting information. On the one hand, there is simply too much of it. On the other hand, students not only need to be able to process it or use it to build on what they already know, but to apply it to new situations in order to make sense of the world around them. The purpose of schools thus becomes one of providing students with opportunities to build on their existing knowledge through gathering and sharing of information and knowledge. The process of relating and interpreting new information to prior knowledge in order to build more elaborate knowledge constitutes a cornerstone of learning.

In the situation where the teacher felt overwhelmed in trying to find online information on the rain forest, what was needed was not less information, but more emphasis on retrieving and processing the information. As teachers, we have to remember when we are using vast databases such as the Internet that what we are most interested in is not the necessarily the final product but the process itself. For students to search online requires not only that they know certain practical techniques for searching in large databases, but that they be able to define very clearly what it is that they are searching for. More than ever before, we need to plan, evaluate, define and articulate our priorities and our strategies before we even begin to search for new information. We have to ask: *What am I looking for specifically? What do I already know about this subject and what more do I need to find out? What are the key words related to my topic? What information have I found already?*

Students need to be carefully guided through this process, especially if they have been or are used to a mode of learning that favors transmission of information. They may be accustomed to dealing with discreet chunks of information that have already been processed by the teacher or by their textbook. The information found online can be very different in nature. The authentic, real-world quality means that it may not be in the format, length, or depth of treatment expected. It may be far beyond what the student is accustomed to in terms of level of understanding or it may be below their expectations. Making choices about the information, knowing where to search for it, how to search for it, what parts of it to include or exclude: these are some of the aspects of constructing knowledge from information retrieved online. Some of this preplanning can be done in a whole-group setting. Other strategies, such as validating the source of information, may be better accomplished in teams. Finally, some activities and certain parts of the process may be done individually. What is important is that students take ownership of the process, and that they not become too impatient about wanting to have a final product.

In terms of specific search strategies, there is plenty of information available on the Internet. Most search engines allow the user to choose the advanced search option and they then provide numerous suggestions on how to refine the search. As well, there is always the option of working in a smaller database on the Internet. Many sites provide, for example, a search capacity for their site only. Government sites most

often offer this option. For younger students, there is the option of using search engines and databases specifically designed with children in mind such as *Ask Jeeves for kids, Kid info* or *Kids Click*. There are new search engines being born each day. Some actually cater to educational needs and to specific age groups. Teachers and students need to locate the engine or engines that best suit their particular needs. They also have to preplan, and to use search strategies. By doing a search on a particular topic ahead of his/her students, a teacher gets a sense of what the students may find. He/she may create a webpage with specific links for the students to go to. Most importantly, teachers need to emphasize the process of information retrieval and knowledge construction. When teachers take this type of approach, they will be better able to appreciate the wealth of information that the net provides as well as its value in the entire learning process.

MULTI-TASKING SITUATION

I had been teaching for exactly 20 years so I felt as if I had a lot of experience under my belt. I was confident that the types of learning situations I provided for students were challenging and interesting. During the summer, the school had been fully networked so that my classroom now contained ten state-of-the-art computers to be shared among 25 students. Nothing was lacking: I had high-speed Internet access, all sorts of programs, different peripherals such as a printer, headphones, speakers, scanner, etc. I felt that I was very well equipped — except for one thing: I was not prepared psychologically or, most importantly, pedagogically, for the new type of learning situations that became part of our new networked classroom. I was very open to the use of technology. I had seen what some other teachers had done. I had my own computer with Internet access at home, and I was very impressed by the possibilities and potential offered to me by this new technology. It's a good thing that I was so enthusiastic! Otherwise, I would have given up pretty soon, packed the computers back into their boxes and shipped them off to some other school where the teacher would know what to do with them. It wasn't the technical aspect of it that posed a problem. I felt fairly comfortable and even knew how to create a basic web page. It was more the change in the classroom situation that I found difficult to manage. In the past, although I had made some use of learning centres and used a theme-based approach, I had still relied extensively on whole-group instruction. I was concerned about being efficient, about getting through the curriculum and about making sure that I had covered all the material with

all the students.

We were working on our dinosaur unit. I had divided the class up into five teams of five students each. Each team had picked a particular dinosaur and had to research it and then complete a visual and oral presentation. The groups of students were expected to rotate around the different centres which I had set up in the classroom. We were using print and Internet based materials. Using the computers and the Internet made class management a lot more hectic. Working with primary children is challenging at the best of times because they place so many demands on our time and energy and the differences in ability are often so great at that level. I really had to be a jack of all trades and needed to be in all places at one time. There were all kinds of problems to solve: sometimes they were technical ones, like when the students couldn't get the file to print or the problems were social — students were arguing over whose turn it was to use the computer, or students couldn't find what they were looking for online. And everyone was at a different point in the project. Some students had begun their display while others had not managed to locate any material. Those who had completed their display called on me to help them just as much as those who were still searching online.

I felt exhausted and overwhelmed by the whole situation. It seemed like my class had been transformed into a beehive where students were coming and going in what seemed to me to be a disorganized and disruptive way. I didn't know who to give my attention to. Everyone needed me. As well, I had the impression that a few of the students were no longer on task. They had a problem and were waiting for me to come and help them, but I just could not get the time to help them. Some students were constantly asking me questions and soliciting my help whereas others seemed to either have tuned out or to be completely off task. While I was helping one student or team, the others were calling on me so that even I was distracted and I wasn't really helping anyone. I obviously did not have enough eyes or ears to help everyone who needed me. I actually felt for the first time in a long time that I did not have control in the class and wondered what the students were learning.

REFLECTION

There's a wide gulf between a class in which students are all doing the same thing at the same time and one in which students are using technology to complete individual or small group activities and projects. A teacher that engages his students in the latter knows deep inside that he is capable of handling the situation. The beginnings may be dif-

ficult, but the competent teacher will quickly learn by doing, and adopt classroom management strategies that suit what she wants students to accomplish. There's no doubt that it's not in this type of environment that a teacher can sit back and remain idle. The teacher must organize the classroom in a way that encourages students to be active learners. No matter how well prepared or organized, he will have to improvise, act spontaneously and immediately in order to respond appropriately during class. The teacher who has chosen to integrate technology by putting the computer in the hands of students, considerably empowers students in their role as learners. Consequently, her role in the class and her management of this role becomes that of a director or a guide who clarifies instructions, draws students back towards the question under inquiry or to the principle objectives of the activity and helps select the appropriate information. To be able to do this, teachers must have a clear idea of the core content to be mastered and of the learning outcomes, especially given that each student does not take the same path in order to achieve them. The first experiences can be trying given the great diversity of interventions and questions that can arise. However, the teacher does not need to know everything.

For example, when it comes to a technical problem related to the computer, the teacher can draw on the expertise of students who have the related aptitudes. This would be especially appropriate in elementary and secondary school classes. In a primary classroom, students can provide some assistance, but to a lesser degree. In this case, teachers may want to rely on assistance from older students in higher grades who may be scheduled to come to the class periodically. Certainly, they too can benefit from such experience. Parent volunteers can also be useful in terms of providing some support to the teacher and students in a primary classroom. Most importantly, as well, the teacher needs to rely on the use of peer learning. Part of the expertise of the teacher that comes into play involves making decisions about grouping students into teams that will allow for an appropriate balance of skills, abilities and knowledge. Students will require some instruction and guidelines related to working in teams to ensure that these teams form a supportive and cohesive group. Preplanning, organizing, clear guidelines and directions, appropriate groupings: these are some of the prerequisites for the teacher in the networked classroom. These may not be new elements to some teachers, but they will find them especially necessary in classrooms

where students are empowered by computers. For others, the networked classroom will provide teachers with an opportunity to practice what they learned during professional development activities. Another important asset to rely on is that of spontaneity. The teacher in the networked classroom knows from the start that, unlike in the traditional classroom, he cannot always expect that the lesson will go as planned. Not only will technical problems or glitches result in unforeseeable occurrences, but the mere fact that the class is more student-centered will result in a greater diversity of needs, activities and problems which will require the teacher to make quick decisions and to problem-solve on the spot. An important principle of working in a networked classroom is that the teacher must be "omnipresent." The teacher has to circulate constantly throughout the classroom. Students will call on her frequently and continually.

Obviously too, the teacher must foster a class climate which is well suited to learning. From the beginning, the teacher must accept that he will not have control of everything at all times. This is probably one of the most difficult realizations that the teacher will encounter. In terms of managing students' behaviors, this context of decentralized control has the advantage of allowing the teacher to quickly know each student and to determine which ones are likely to exhibit divergent or inappropriate behaviors. Knowing students in this way, the teacher can more easily act proactively rather than reactively. However, the context of learning in the networked classroom is not only accompanied by difficulties. The very nature of using technology affects the motivation of students and, consequently, mitigates certain undesirable behaviors. When students are engaged and actively pursing their learning goals, they are more likely to remain on task and to exercise internal control and discipline. In a class where technology is used frequently, students have to be encouraged to first try to solve the problem or answer their question before coming to the teacher for help. They need to be encouraged to draw on the knowledge and skill expertise in their group. Before the teacher takes on another task, he has to ask: "Can this wait until later?" or "Can someone else in the room carry out this task for me?" The teacher has to expect unforeseeable occurrences. However, being well prepared before each class can reduce the number of interventions and tasks required during class time. At the same time, multi-tasking should not interrupt the flow of the lesson, and student rotation around

class centres should proceed smoothly. Some groups may have to wait until another time to move to another task when it becomes important to avoid breaks in concentration for other groups and to ensure a smooth, coherent, pattern of interaction, of communication and of involvement. In some cases it may help for teachers to keep a log or record of their activity during class. Frequent analysis of the log will allow teachers to determine where they are spending most of their time. They may need to look at ways of introducing greater efficiency by cutting down on some tasks. Pre-assigning certain responsibilities to students on a rotating basis can help alleviate some of the burden. For example, certain students can be responsible for distributing any handouts, for clearing jams in the printer, for troubleshooting, etc. The use of technological tools can also help in the completion of tasks. The teacher needs to ask; "Is there a way that the computer or copier or some other tool can do this more efficiently?" In general, the old adage of "killing two birds with one stone" is a central one when it comes to multi-tasking. For those new to this type of learning situation or context, multi-tasking is not easy. When all students are working on the same task with the teacher in front of the class, controlling everything that goes on is easier — or, at least, it appears this way. It is also difficult for teachers to accept that they cannot control everything.

MONITORING AND CONTROL SITUATION

Before we had access to the computer lab, students typically went to the Resource Centre to access the materials they needed in order to do their paper/research project. The advantage provided by the computer lab is that students were able to access more current and more varied materials. As well, they could add images in order to provide a more polished look to their project. One of the important aims in their course was that of individualizing the process and the product. The computer lab certainly helped us to achieve this goal. Our lab was state-of-the-art. We had high-speed access as well as computers with fast processors. Downloading images, sound clips, and video files was easy on such powerful machines. Students often remarked that they would have liked to have such machines at home so that they could download images and videos. I too was pleased with and proud of our new computer lab and felt that I had all the tools I needed to deliver a great course.

However, this new computer lab, along with the sophisticated tools it offered, also brought with it a whole new set of problems that I had

never dealt with before and which made me feel very uncomfortable. During class one day, I happened to be by the printer when a jam occurred. I decided that I would handle the problem since I was next to the machine, although students usually took care of this sort of troubleshooting. One of the students was quite insistent that he take care of the problem. He said he really needed the picture. He was so insistent that I sensed immediately that there was more to this situation than I was being led to believe. I asked the student to return to his seat. He did so reluctantly. There was a real buzz going on throughout the room. All eyes were riveted on me as I pulled the tangled piece of paper from the printer. It was exactly as I had expected; a very explicit centrefold of Pamela Anderson in her birthday suit.

In spite of the protestations of students, I required them to return to their classrooms. I told them to immediately take their hands off the keyboards. The students were making all kinds of excuses, complaining that they had to leave, that they had not finished their work, etc. I didn't know how to deal with this right away. I just wanted everyone to go back to class so that, as a group, we could discuss what had happened and what the implications might be. As we were leaving the lab, I checked a few of the students' computers. While some of them had obviously been on sites related to their projects, others had, I discovered, been visiting sites of a sexual nature, sites with computer games, or sites of their favorite rock groups.

REFLECTION

What happened in this situation is not surprising. One of the great advantages of having a networked classroom also represents one of its disadvantages. Networked computers provide students with access to a very wide array of authentic, real-world materials. Students can access everything they need in order to complete projects on almost any topic. Some of this material might never be found in a school's resource centre or in a public library. With this wide access to authentic, real-world materials comes as well access to information and materials that we normally would not want students to access in school. Not only might viewing some of this material be inappropriate, but it could as well be illegal especially in cases where students may be downloading pornography. So, in this case, the teacher had good reason to be alarmed, upset, disappointed, discouraged and concerned.

However, the presence of such materials on the Net and the ease of access afforded students to such materials should not discourage teachers from making use of the medium. Controlling and monitoring the activities of students to avoid such incidents can be fairly easily accomplished. First of all, ensuring that students are on task, doing work and visiting sites related to their assignments can be accomplished to a certain degree by a well-planned and co-ordinated pedagogical approach. The arrangement of the computers in the lab may help or hinder: preferably, the teacher must be able to see the screens, and it is actually easier to do this when computers are not aligned in traditional rows.

Students need to be afforded opportunities to choose their own learning paths. Restricting them to certain sites may actually backfire, resulting in a situation where students are even more tempted to wander outside of the boundaries set by the teacher. However, as indicated earlier, the teacher can provide a certain range in the form of suggested sites which may be bookmarked before the lesson or provided to students in a handout. The motivation and determination that accompanies opportunities to set one's own learning path can often provide students with the drive they require to remain on task for most of the lesson. Timeframes need to be clearly established and closely monitored and adhered to. Students can be evaluated during the process and not on the final product. Thus, the teacher can require students to complete a log sheet at the end of each session in the lab. Students should indicate on this sheet what they accomplished during the lesson and what sites they visited. It's harder to be off-task when you have strict time limits to which you must adhere. There always needs to be a backup plan or alternate route for students who are near the end of the class and who may finish their project before the end of the class. These students may be more inclined than others "to wander off" to sites where they should not go.

In spite of the best pedagogical planning, there will always be those students who will nonetheless test the limits. That is one of the reasons why students have to be made aware of the school's expectations and consequences related to online use. These expectations and consequences usually take the form of an Acceptable Use Policy. Many schools now require students of all ages to sign an Acceptable Use Policy in which expectations for computer use are clearly delineated. Consequences for infringement of the policy can include revoking a stu-

dent's computer privilege, suspension, expulsion and, even, criminal charges. Teachers also have to be very watchful in a networked classroom. If students are aware that the teacher can quickly check, control and monitor students' recent navigation history, they will no doubt be more cautious about straying from the paths they should be on. There will always be students who will nonetheless push the limits and try to get away with what they can. However, these students can lose their computer privileges and the teacher will no longer have to worry about their online behavior. A final solution to preventing students from accessing such sites would be to install a program on the school's server that would block access. One of the problems, however, with blocking software is that schools have a responsibility to instruct students about safe and ethical computing. Using such filters does not provide this opportunity. These programs can also provide a false sense of security since computer-savvy kids will often find ways around the filters. In this case, sound pedagogical intervention may ultimately prove more effective than a quick technological fix.

WORKLOAD SITUATION

Working with primary children is demanding even at the best of times. One thing that makes it so demanding is that there are often such great differences between students at this age. Their reading levels can vary greatly. Some may be a few grades ahead, while others may be a few grades behind. Some are very mature socially, while others are not. Some have long attention spans, while others are not able to attend to a task except for very short periods. As a teacher, I had the responsibility of trying to meet the needs of all of these students at the one time. I managed as well as I could. Having taught for 15 years, I had built up a supply of materials to suit all levels. I had readers for all levels as well as supplementary materials for the more advanced students. My filing cabinet was filled with all sorts of activities and lesson plans, which I had developed, for use with primary students of all levels. In the regular classroom, it seemed like all students were able to follow along when I was teaching the class or when students were doing an activity.

When we were working in the computer lab, the situation was very different. There were lots of resources available online for the theme that we were doing. We even managed to find a site that was designed especially for primary. The problem, however, was that the reading level of a lot of the material was just too difficult. I needed to take a number of

these students aside to work with them and to help them read the material. I also bookmarked a large number of sites and added them to my space on our school's site so that students could access them more directly. This approach seemed to work better, but I had to ask myself if all this extra work was really making a difference in the end. I had little preparation time as it was and a lot of that was being spent on committee work. I wanted to use a more student-centered approach and take advantage of the possibilities offered by technology, but there just didn't seem to be enough hours in the day.

REFLECTION

Working in a networked classroom requires that the teacher be willing to accept a change in classroom roles. But the new roles and activities should not result in an increase in the workload of the teacher, at least, not once new routines are installed. On the contrary, the teacher as facilitator shifts a considerable portion of her delivery time to the students, who become actively engaged in problem-based and inquiry-based learning. Thus, if there is to be an increase in workload, it is the students who will bear the burden as learning becomes a more active endeavor and as the student is called upon to plan, implement and evaluate tasks. The teacher in the conventional classroom must be constantly directing, talking, organizing. He is constantly "on the stage" competing for the attention of students, maintaining their interest and motivation. The teacher is always visible, always central, always called on to make decisions, to explain and to solve problems.

In the networked classroom, the teacher remains a central figure in terms of guiding the students and providing the necessary supports, assistance, and prompting at the necessary moment. However, the student takes more active responsibility for her learning, and it is not the teacher who must be relied on to conduct activities, to make all the decisions and to maintain students' attention. In the networked classroom, students play a more active role in planning and organizing, and conducting activities. They must actively and energetically solve problems, apply knowledge and skills, communicate, collaborate, design and deliberate. The teacher has the responsibility to help students engage in these types of activities. This responsibility makes her role more complex and challenging, but does not imply more work in the end.

Students do not necessarily work with didactic materials or artefacts, which have been brought into the classroom or prepared by the teacher. Instead, other teachers' materials may be accessed, as well as authentic and real-world materials, to solve real-world problems and do real-world tasks. In the conventional classroom, the pattern of interaction of teacher to students places tremendous strain on teachers' time and energy, obliging them to be on centre stage at all times. The patterns of interaction in the networked classroom are often decentered, diversified and more collaborative. Not only does integration of technology require a more student-centred approach but it may often include outside interaction through collaboration and communication with individuals in other classrooms, with teachers of the same subject matter, and with experts from the near-by or extended community.

For many teachers, technology integration may place an initial strain on their time and energy. There are new skills to learn, new patterns of interaction to get used to, and of course, there is some getting used to and defining one's role in a networked classroom. For the teacher who has built up a repertoire and a base of materials and activities, this changing context may mean abandoning use of many of these materials and activities. Shifting approaches or strategies may also require that the teacher abandon certain ideas about the nature and needs of the learner. For example, beliefs in the need for students to be in possession of prerequisite reading skills in order to access authentic materials may not be compatible with working in the networked classroom. Instead, the teacher may need to shift his attention to the needs of the learner in the authentic learning situation who is working with whole materials in real contexts.

Indeed, new skills and new ways of thinking and of interacting will be required of the teacher. While such role transformation may appear to increase the workload of the teacher, in the end it will actually make the teacher's job, not only easier, but more rewarding. As students take greater ownership of the learning process, the teacher becomes more of a partner in learning. Each year, there may be new projects, new collaborators, and new ways of solving problems, of planning, organizing and implementing. Teaching responsibilities shift from preparing didactic materials and transmitting information, to planning projects, finding solutions to problems, providing support, and guiding. The issue of workload should gradually shift as the teacher becomes accustomed to

the new responsibilities and abandons
some of the tasks that she previously took responsibility for and which proved no doubt onerous. All of this will take some time, adjusting, initial headaches, and ways of dealing with uncertainties. In the end, the teacher should find his load lightened. More importantly, she will discover many opportunities to, not only share knowledge and skills with others, but to learn new skills and build new knowledge along with the students. For many teachers, such an opportunity will represent time and energy well spent.

TEACHER AS FACILITATOR SITUATION

At the high school level, we had come to depend on lectures as the principal mode of instruction. This was especially true in Social Studies' classes, where students spent considerable time taking notes. Students were expected to complete projects, but these were largely done individually and outside of class time. In many ways, these projects were peripheral and not an integral part of the learning process. Towards the latter part of the 90s, a number of factors combined to result in a shift in focus throughout our school in general and in the Social Studies' Department in particular. Our school had become fully networked and we now had computer labs which were available, not only for computer classes, but for all subject areas. The introduction of all this new equipment had resulted in somewhat of a re-evaluation of teaching methods, with a greater focus now being given to promoting student-centered and resource and project-based approaches to learning. In addition to these changes, there seemed to be a bit of a curriculum renewal taking place. A lot of our textbooks and curriculum guides were being replaced, new courses were being introduced and there was more inservice time available. Our Social Studies' Department Head was really advocating the adoption of a more technology-based approach, particularly in the World History course in grade 12 where students were mature enough to handle being given a lot of responsibility. Also, we agreed that, of all the courses in the Department, the World History course lent itself very well to extensive use of the Internet in terms of accessing information and resources and, as well, in terms of sharing information with other schools and getting information from experts in the field.

I personally felt comfortable with this new approach, even if for me it did mean a lot of new planning and some rethinking of the ways I had done things in the past. I felt that I had the support of the school and of my colleagues and that we were all working together in order to infuse the school with new pedagogical approaches. Unfortunately, there was

one group whose support I needed in all of this, but who I didn't seem to be able to count on: the students. They had been accustomed throughout their student careers at being fairly passive most of the time. They were used to taking notes. Many of them felt reassured that they had actually learned something if they could open up their exercise books and find pages and pages of notes that they had copied down and which they were expected to memorize. This was their last year of school and many had plans to go off to university. They had become very conscientious and very concerned about having the skills and knowledge necessary to be able to do well at the post-secondary level. The school was evolving its conception of learning and so was I, but the students were not. They resisted my attempts at being a facilitator. They wanted me to be the holder/dispenser-of-all-knowledge type of teacher. They wanted to pack their notebooks with as much information as they could and they wanted me to test them so that they could prove that they could learn the material off by heart.

Their resistance to my role of facilitator took various forms. Some students were very direct in their disapproval and made comments to the effect that I wasn't doing my job. During parent-teacher interviews, a few parents complained that their children felt that, instead of teaching, I spent more time walking around the room watching what others were doing. Some students went to the Guidance Counsellor to complain that "they weren't learning anything." He sent them back to me, but it seemed as if I could not convince them of the validity of these new ways of knowing and of learning and the new roles that were required. Other students complained that they "had to do all the work." That was the other problem with the approach. Students were accustomed to being fairly passive in the past. In this new approach, there was a lot more expected of the students in terms of planning and then following through on their plan to completion of the project. There was more demanded of them cognitively and socially. They had to learn to work with each other and to determine answers to questions which they themselves posed. Sometimes, I heard them comment behind my back when I answered their question with a question, things like "we need a teacher who knows the answer", or "how are we supposed to find the answer if she doesn't know it?"

I just could not seem to get their co-operation. The projects were not going as I had planned, which made it even harder to convince the students of the validity of the approach. At one point, I even began to doubt my role and wondered if I shouldn't resort to just lecturing and giving notes. Looking back on the situation, I think that I was just as frustrated as they were. Yet I was still convinced that my role as a teacher was to assist the students, to be a facilitator, a "guide on the side" and not

the "sage on the stage." But how could I possibly convince students of that?

REFLECTION

There are many underlying issues related to the teacher being in the role of facilitator. One of these is that it automatically implies that students must take on a different role. The other important issue related to the teacher as facilitator is that it is premised on a particular conception of knowing and of learning. Students' resistance to the teacher in the role of facilitator was likely symptomatic of an underlying lack of acceptance of their new role and with a lack of acceptance of or understanding of the new conception of learning and its related benefits. The students in this situation are not unlike many others who are transitioning to new forms of learning. We cannot expect that students will simply adopt new ways of learning and of knowing without educating them in those new ways. Providing them with some guidance and some explanation is a minimum in this respect. Students need to know what their role is. They need to know what is expected of them. Many will also need guidance in time-management, in working in teams, and in many other areas such as planning, organizing, and evaluating.

It's not surprising that students might initially resist a more learner-centred approach. Sitting passively taking notes and listening to the teacher is far less demanding on students than being responsible for learning. Often, it is less demanding to work individually than it is to work collaboratively. From the point of view of students, if they don't see any added advantage to such an approach, they will likely not want to take on what they will interpret as extra work. Students accustomed to a more teacher-centred approach will not necessarily have the skills for or understand alternate approaches. They will need to be carefully guided through the process initially. Those accustomed to information transmission will need to learn how to construct their understanding starting from their prior knowledge and to determine the desired learning paths in order build further knowledge. Furthermore, they will need to learn how to share knowledge and build it collaboratively. Students should gradually come to see that the teacher facilitator is actively modelling skills and methods, using questioning to foster deeper levels of student inquiry, monitoring progress, and coaching with feedback and refocusing. They will not see the teacher as someone who is simply

standing in the sidelines but as someone who intervenes where necessary to respond to student inquiries, moderate discussions, identify problems, guide students, and to provide encouragement and examples.

We often focus on the need to evolve teachers' conceptions of learning, but we forget sometimes that students too need to adopt new perspectives and understandings. This is especially true in the case of older students who, like those in this situation, might be inclined to reflect on and to question the change in teaching approach. This is where a specific focus on metacognitive skills will prove useful to both the students and the teacher. Use of metacognitive strategies by students will help them plan, attend to the task, and evaluate the achievement of outcomes. Some of the planning strategies will include selecting the learning paths, preparing, determining the difficulty of tasks, and the time frames required. In order to attend to the task, students will need to learn to focus on materials, search for, locate, relate, contrast, validate, and relate information to what they know already. In order to evaluate the achievement of outcomes, they will need to review, repeat, revise, test, and judge.

The teacher as facilitator has a dual role to play. She is responsible for teaching but also for helping the students learn how to learn. Depending on the students' past experiences in learning, their age, their enthusiasm, this role may be more or less challenging. At the primary levels, students may be more accustomed to a more active learning situation and will likely transition more easily to a more learner-centred approach with teacher as facilitator. It is at the secondary level where the challenge may be more heightened. Students at this age are more conscious of demands placed on them and are more likely to reflect on and question teaching practices. As well, if these students have a prior history of learning through a transmission mode, they will likely have to be coached more specifically in order to be able to transition to a mode that requires them to participate more actively in the learning process.

Roles and responsibilities will need to be clearly defined for and with students. Students must be aware of the teacher's expectations for their performance and involvement. The teacher can model instructional behaviors, which the students can copy for use in their interactions with other students. The teacher can also solicit feedback from students on what works and what does not work. Adopting new approaches in education will require changing ways of thinking. Both

teachers and students have established mindsets and paradigms that will need to evolve and shift gradually in order to allow room for new beliefs and behaviours. The teacher as facilitator has an important role to play in teaching students about these new paradigms and new ways of learning.

CONCLUSION

For many teachers, working in networked classrooms can be frustrating at the outset. All the techniques they had down pat, the lesson plans they had been successfully using for years, the approaches they took: many of these will have to change in order to ensure an effective transition to the networked classroom. For this reason, teachers need to be very committed to working with technology. They must have faith in their ability, not only to improve education, but also to transform it by setting up conditions that actually require students to adopt new learning strategies. Working in the networked classroom also requires teachers to shift some of their beliefs about the role of the teacher, the role of the student and, most importantly, about learning.

Classroom management will be redefined in the networked classroom in a way that is coherent with new conceptions of teaching and learning. There will be new approaches to interacting and collaborating as well as new ways of knowing. There will be a different locus of control and an interchange of roles. These changes should not be surprising. In all areas, be it in education, health care, or engineering: as the tools evolve, so too do our practices. However, in education, we have been somewhat slower to embrace use of the new tools. Seymour Papert, (1993) in his seminal book, *The Children's Machine,* recounts the anecdote of the group of surgeons and teachers who have travelled 100 years into the future in order to see what has changed in their profession. While the surgeons witness an operating room where practices and procedures have been transformed as new technology was adopted, the teachers find themselves in familiar territory where little has changed in the past one hundred years. Papert's lesson is a startling one. It reminds us that, as educators, we have to keep pace, that we have some catching up to do, and that, perhaps, too, we have not tapped the full potential of education as we venture into the new millennium. There are new issues and roles, as well as challenges and changes awaiting teachers in the networked classroom. At the same time, for those

who are willing to rethink their role, practices and beliefs, there are al new possibilities and potential.

REFERENCES

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