

V. Case Study of Evelyn Murray

Introduction

Evelyn Murray's voice was unmistakable as it rang down the hall. The smooth, deep, not-quite-Jamaican accent rolled out the words, "Excuse me?!" as she tried to get her students' attention. She stood in the front of her class, proud and strong, looking at the students, waiting to gain their undivided attention. Ms. Murray sported short hair and a straight posture. She always dressed professionally – wearing dresses or pant suits almost every day. Her demeanor exuded her confidence and her pride. It also declared that she was in charge. The students' behavior indicated that they, too, sensed this – they were better behaved in her class than in many others.

Ms. Murray was not only the eighth grade math teacher for the institute, she also taught the sixth grade *superintendents* class mathematics and acted as the professional developer for the institute – helping new teachers become effective in this setting (Interview, 11/5/98).

I had worked with Evelyn earlier in the Indiana University research effort with CRI simulations as a site manager for data collection. I had visited her class several times when she was the sixth grade math teacher to collect data on what

students learn by using *The Chelsea Bank*. Now, two years later, I faced her and some of those same students, now eighth graders, as they were about to revisit *The Chelsea Bank*.

In my initial observations of Ms. Murray's regular classroom (10/29/98), I realized that very little had changed in her approach or demeanor from what I remembered. She was teacher-centered, for the most part, leading all classroom activities and discussions. She provided the students with several math problems to work and had them show their work on the chalkboard. When an answer was incorrect, she asked the rest of the class what was wrong with it, the students answered and everyone moved on to the next problem.

Evelyn was also interested in her students developing a level of understanding that would allow them to work similar math problems to those she offered as practice. To this end, she often presented multiple ways to solve certain problems, provided extra opportunities for the students to practice, and suggested mnemonic devices to help the students remember simple operations, such as when to change the sign while working an equation. Despite any initial opinions I held about her approach, it was measurably effective. Evelyn was voted the teacher of the year for her district last year. She has worked with her top classes preparing for tests so

that 100% of the students pass the “Regent’s Exam” in math each year (Observation, 11/5/98).

Ms. Murray became a teacher eight years ago after a successful career in business in which she worked her way from being a clerk to being a manager. She became a teacher because she loves children and wants to make a difference in their lives (Interview, 11/5/98). Further, she wanted to provide her students with a better learning environment than she had as a student. She attended a school where learning was auditory – done by rote, which was extremely difficult for Evelyn because she was a visual learner. In response to her own experiences, Evelyn attempted to create an environment in which students could hear, see, and try out the concepts being taught (Summary, 12/28/98).

While Ms. Murray retained a social distance from her students, once in a while she could be seen laughing with them about something happening in the class or helping a student in trouble. Ms. Murray was not a cuddly teacher; however she was respected. She showed her care for the students through the standards she sets for them and through a constant system of reminders to the students that they were about to go to high school and that it was time to be serious about what they were doing in school.

During my first meeting with Ms. Murray, we discussed why she had chosen to use a simulation in her classroom, she was quick to answer that the simulation brings “excitement” to the classroom and makes the students happy (Interview, 10/29/98). Those two concepts – exciting and happiness – were two that ran throughout Evelyn’s description of her teaching, her goals, and her decisions for implementing various approaches with the students.

Evelyn’s Chelsea Bank Class

Because she is also the professional development person for the institute, Ms. Murray teaches only two classes of eighth-grade math plus the sixth-grade class she works with before school during the week. Ms. Murray explained that the simulation class was designated as *average* – meaning that these students’ scores on the standardized tests indicated that they were at about a fourth grade reading level (Interview, 1/14/99). However, in Evelyn’s words:

I hardly have discipline problems with them which makes it easy for me to work with them. They’re very receptive students. Whatever you ask them to do, they will do it. All of these things make it very easy for me to work with them. They’re not extremely strong, but they are very good in mathematics. They’re good listeners. They want to learn. They are eager to learn – which is such a plus. They are really eager to learn and I think that’s one of the reasons why I want to work with them. (Interview, 10/29/98)

This eagerness to learn was only occasionally apparent to me as an outsider. For instance on 11/12, Mr. Peachtree, one of the teachers who doubles as a computer support person, was in the room and students eagerly asked him questions while Evelyn worked with other teams (Observation, 11/12/98).

Evelyn also commented that she would be working with this class because she had them for a double period (two class periods back-to-back) one day each week. She explained that this “lends itself to the simulation because it gives me time to go online and offline in one period rather than be online one day and then do the offline discussion the next day. When you are online one day and offline the next, the kids really lose the essence of what’s happening. So, I prefer to do it during the double period.” (Interview, 10/29/98).

The class had 32 students at the beginning of this study, but through shifts in classes and transfers, ended with 33 students. Typically, there were 30-32 students present on a given day and at least one member of the class was chronically truant. The students represented many countries from around the world – some were immigrants themselves and others were the first generation of the families to be born here. Overall, the make-up of the class could be described as African-American, Hispanic, and Indian.

The other class that Evelyn taught was the “Regent’s class.” It was comprised of the 30 or so students who will be taking the Regent’s exam in June. While Evelyn claimed that she felt *Chelsea* improves math skills, she did not feel that it was appropriate to use with the Regent’s class. Any questions I asked about this class received answers that implied that *Chelsea* would not work to prepare the students for this kind of exam because the math in *Chelsea* was too simple.

Using The Chelsea Bank

When asked about why she wanted to use *The Chelsea Bank* at all, Evelyn quickly pointed out many benefits of use. First, she asserted that it tied into her math curriculum well and that it tied in to the students’ real lives (Interview, 10/29/98).

She elaborated, saying this was why she adopted the simulation five years ago:

I chose to use it because it really helps with math. It is very related to mathematics. There are so many things – you can really do a lot of math with it. The kids learn about banking. Their parents have bank accounts and some of the kids have bank accounts. It’s nice for them to actually see how it works and to learn how to interact with people in the business field. (Interview, 11/5)

This emphasized the kind of tie to the real world that Evelyn sees as being a key to education. In fact, it was the desire to tie learning into real-life that led Evelyn to Classroom, Inc. She and another teacher had applied for a grant proposing to link mathematics with the banking world. When the grant committee saw the proposal

tying math to banking, they felt this school might prove to be a good site for implementing the simulation (Interview, 11/5/98).

In my observations of her class, I was surprised by the way she used the real-world tie, though. Rather than using the simulation as a basis for learning about the real world, she tended to use the real world as an aide to working through the simulation. For example, to help students think about third-party checks, she used an example of her trying to cash a check for her daughter.

Evelyn: “So, let me ask you a question, though. Could this be a third party check or something?” [I heard a couple students say, “yes.”] “Could it have been a 3rd party check? What do we mean by a third party check? What do we mean by a third party check?”

Student: “You’re paying it to two different people.”

Evelyn: “You’re paying it to two different people?”

Some other students murmured answers – Evelyn looks around for a second, then said,

Evelyn: “Okay, let’s go back – this check is handed to me and this check is in, let’s say, my daughter’s name – Jessica Cromwell. I am her mother, but nobody at the bank knows I’m her mother. But now, Jessica does not have an account with the bank, so she wants mom to cash this check. Do you think I can go to the bank with a check saying Jessica Cromwell? Jessica Cromwell has now signed this check. And, I am signing the check also. Do you think the bank will give me the money?”

I heard a couple students mumble, “No.”

Evelyn: “No, it’s payable to who? To Jessica. I can deposit that check and then when it’s cleared, I can take the money out and give it to her. But I cannot go to the bank and say ‘Okay, can you please cash this check for me?’ and it says “Payable to Jessica Cromwell.” I cannot do that. So, you need to read your manuals better. A third party

check cannot be cashed by anyone. You cannot do that. The person does not know if you are the person....” (Observation, 1/7/99)

In another example of tying real life to the simulation as an aide for helping the students think through the situation better, Ms. Murray worked with a team struggling to decide whether they could cash a check that a customer wrote to herself from a different account. She tried to explain to them that it was okay because the check was from a different bank than the customer was depositing it to. Evelyn elaborated explaining, “Say I have two accounts – one at Chase and one at Citibank. I put ‘Pay to the order of Ms. Murray’ on the check from one to deposit to the other. I can do that.” (Observation 1/21/99).

During our first few discussions explicitly focused on using *The Chelsea Bank* in the classroom, Evelyn stated that her primary goals for the students were (a) learning to work together, (b) learning more about the business world, and (c) promoting students taking pride in their own work (Summary, 12/28/98). It is important to note at this point that she did not mention development of mathematical skills as a goal even though she claimed that *Chelsea* developed those skills. This was an ongoing inconsistency in our discussions. Further, as the research went on, she actually cut her *Chelsea* time in half because she felt it was interfering with mathematics.

Evelyn was concerned with making the learning experience more worthwhile for her students. She acknowledged that she was not able to implement *Chelsea* as

she did when these students were in sixth grade because they had matured and should be thinking at a higher level than before (Interview, 10/29/98). From the very beginning she emphasized to the students and to me that this time would be different because they are older and more mature now (Interview, 10/29/98; Observation, 11/5/99). Further, she wanted her students to become more aware of the world of work and how companies operate.

One of the most overt ways that she raised the expectations for her students while making them more aware of the real world was through the assignment of “real” roles corresponding to actual jobs in an office. Within each group, she told the students that one person would be the manager, one would be the clerk, and one would be the administrative assistant. The students designed schedules outlining their roles and switching roles every two months¹ (Interview, 10/29/98, Observation, 10/29/98). Particularly in the first few weeks of class, Ms. Murray spent a lot of time suggesting ways the work might be split between the roles by saying things like:

The manager must make sure everything is intact. The manager must make sure the computer is closed down properly. The administrative assistant will collect the folders and hand them to the manager who will collect the folders and hand them to me because I am the president.” (Observation, 11/5/98)

¹ The simulation itself lasted less than the six months that would have been required for each student to serve a full two-month term in each position. When I left the school at the end of four months, there were only three more scenarios to be completed. Evelyn did not adjust the schedule to address this time discrepancy.

Or “Who’s the manager in this group? You better do something about this folder.”
(Outside Observer 1 Observation, 11/12/98).

From the perspective of creating a learner-centered environment, *The Chelsea Bank* acted as a powerful tool of change for Ms. Murray. When I asked Evelyn how preparing to use *Chelsea* differed from the way she prepares for math class, Ms. Murray offered valuable insight about the power that a single tool can have. She replied:

Math is very structured and one thing builds on the next. So, if I start working with angles then the next thing I’m going to do is triangles because they are angles and they have to really connect together. However, working with *Chelsea* has different scenes at different times and different things that [students] are doing in the bank. So, first of all, it requires a lot of preparation for the kids – for it to be interesting and for the kids to understand what is going on in there, and it takes an extra step after the fact where you have to ask questions. You do the same thing in mathematics also, but everything is there for you in mathematics – the homework assignments, you know where to get them from. Whereas, in *Chelsea*, I have to really sit down and look at the lesson and decide on the level of the students I am teaching to create certain questions that would be interesting and that will hold their interest. So, it’s really a different situation. (Interview, 12/2/98)

From Evelyn’s perspective, *Chelsea* clearly forces her to more closely examine her students – where they are in developing certain skills and what holds their interests.

This means that she not only examines the cognitive abilities of her students, but also their motivation levels as well. This critical examination of her class was one step toward becoming learner-centered.

First Day in the Lab

The first day that the students worked in the computer lab, Evelyn led all of the activities. There were guests coming to observe the class, creating a sense of rush to get the students through the basic introduction and into working on the scenario (Observation, 11/5/98). Ms. Murray called the student groups to their computers, one group at a time, in a pattern that repeated itself throughout the four months I was in the classroom. Once they were seated, Evelyn began the introduction:

It is your responsibility to know your group and what is required of your group. You have an assessment sheet. Today or maybe another day, you will fill out a sheet. Do not say everything went well if it did not. There is sometimes room for improvement.

Welcome to the Chelsea Bank system. Some of you did this two years ago. I'm sure there are some things you don't remember...There are some very important things on the system. Some people, two years ago, did not go through it thoroughly. I want you to go through the processes so you know when you go through the simulation you will have questions. There are things to press on, click on, and you have to read. I want collaboration. You have a group, talk in the group...I want you to go through the manual and check. Many of us have never cashed a check before. I worked at a bank and I went through training school. This manual is like your training school.

The manager must make sure everything is intact. The manager must make sure the computer is closed down properly. The Administrative assistant will collect the folders and hand them to the manager who will collect the folders and hand them to me because I am the president...

Everyone working with the computer now, do you see an icon called Chelsea? ... People working on the computer, I want you to click on Chelsea now. (Observation, 11/5/98)

This introduction offers many insights into Evelyn's teaching style that become important as we consider the change process and try to determine how or if she has evolved. First, we can see that she feels the student roles are important. She has very intentionally provided these titles (manager, administrative assistant, and clerk) in order to convey a sense of maturity and responsibility to the students (Interviews, 10/29/98 & 11/12/98). It is also apparent that Ms. Murray values retaining absolute control. In fact, she became so aggravated with a team that rushed ahead of her when she gave the instruction to click on *Chelsea* that she backed them out of the program and made them start over (Observation, 11/5/98). Further, this provides a typical example of the lectures that Evelyn gives her students. She tends to make several points that weave in and out of each other throughout the lecture. In order to understand what she is asking for or emphasizing, the students must listen intently.

Another aspect of this introduction that is particularly relevant is the emphases she makes during it. We learn immediately that group work is an issue and that the roles influence all aspects of the students' lives. We also learn that the students' are supposed to go through the simulation carefully. Throughout the time I spent in the schools, Evelyn continually raised these issues.

Enacting the Framework

Overview

The enactment of the framework occurred one step at a time spread across all four months of work with each teacher. The work unfolded in the first phase with Evelyn beginning with reflection. As she evolved, we added proximal goals moving us to a second phase of our work. Finally, the impact of outside resources was extremely important in my work with her and moved her into a third phase. The other two pieces of the framework were also important, but did not affect her behavior as overtly as the reflection, proximal goals, and outside resources did.

Phase 1 – Introduction

The first phase of my work with Ms. Murray lasted from my first observation (October 29, 1998) until December 17, 1998. During this phase, I observed and interviewed Ms. Murray five times in her class plus one time in a collegial group meeting. I was also able to have two outside observers visit during this phase. However, there were a number of unusual occurrences during this first phase that made it unusual. For instance, one observation involved observing a class comprised of students from the *Chelsea* class combined with another class because of classes being shifted to accommodate a major fieldtrip and two sessions in the computer

room involved outside guests coming in to see the simulations at work. Further, two weeks of the observations were disrupted due to extreme technical difficulties in the computer lab.

My focus during this initial phase was developing an understanding of Evelyn and determining how I might best be able to support her in becoming more learner-centered. To this end, I was largely an outsider rather than a participant. In our interviews, I asked questions which promoted increasing amounts of reflection as time went by. For instance, in the first and second interview, my questions focused on why Evelyn became a teacher, why she uses the simulations, and what her plans are for using *The Chelsea Bank*. By the final two interviews, I included questions asking Ms. Murray to tell me how students learn, how well her students were doing with the simulation, and how she might improve her own approach to the simulation.

Overall, this phase lasted longer than initially anticipated for several reasons. First, while we had met two years previously, we were basically strangers and a certain level of trust had to be built. Next, Ms. Murray had a strong personality and certain leadership traits that I felt I needed to be particularly sensitive to if this effort was to accomplish any of my goals. Further, I felt that it took a long time for Ms. Murray and I to build the kind of rapport necessary for the change effort. While she was always very willing to help me in this research effort by being interviewed or

helping to work through problems such as scheduling a time for the collegial group meeting, Ms. Murray did not readily accept me as a peer. She maintained, for the most part, a safe distance. She answered questions as an expert talking to an outsider, making my approach far more etic than I had originally anticipated. Over time, we did develop a more peer-like relationship, however, there was always a distance between us which, even in our best interviews, seemed to leave certain ideas unexpressed and certain questions only partially answered.

As time went on and we began to refine our roles, I became more proactive by making suggestions to Ms. Murray. In fact, even early on, I noted the struggle in my journal saying,

“I am finding it harder to take on the role of facilitator with Evelyn. Part of this is definitely related to her demeanor – she is very sure (and thoughtful) about what she is doing. Her actions and lessons are deliberate and well thought out. Part of it is that I’m not sure where to start – Ms. Murray is beyond many of the “basic problems” I was prepared to deal with. In order to bring her to where we want her, I need to find a way to support her in becoming more learner-centered. She knows all the tools and questions and goals, but she believes that a teacher needs to transmit information (as evidenced in her comments that kids are affected by the information the teacher has transmitted to them.). I need to find a way to help her become learner-centered in an environment where authority is considered expert. I also need to find a way to support her in becoming learner-centered in a way that does not cause her to lose control over the discipline of her students. I don’t think she would be willing to do anything that would compromise

their respect for her or her feeling of being in control.”
(Journal, 11/5/98)

Phase 2 – Using Proximal Goals

In phase two of my work with Ms. Murray (1/7/99 & 1/21/99), I was able to see her try out proximal goals and adopt aspects of them for her class. During this phase, I really began to feel the effect of her decision to cut back to using *Chelsea* only once every other week. She decided before the Christmas break that her students needed more math practice and was forced to visit *Chelsea* only every other week. This was important to my work with her because it meant that any suggestions that were made took at least two weeks to be enacted and the change process was slowed considerably. However, I was still able to see certain kinds of changes. This phase included only two weeks of working with Evelyn, 1/11/99 and 1/21/99. It also includes one observation by an outside observer and one videotaped session. This phase lasted from the first implementation of proximal goals until the first impact of the Chuska (1995) book on her teaching.

My focus during this phase was in supporting her use of goals and promoting a deeper sense of reflection. To this end, I focused more on reflective questions. Further, I continued to become more proactive in my work with her, especially in the

collegial group meeting, to ensure that there was opportunity for Ms. Murray to learn from her peers rather than always feeling the need to take the role of mentor.

Phase 3 – Using Resources

The final phase of my work with Ms. Murray occurred during the month of February (2/4/99 & 2/25/99). In addition to seeing her evolve in her classroom, I was also able to see her evolve in the collegial group meetings. In this phase, it seemed that things started making sense for her. Perhaps the largest changes were based on a raised awareness of questioning strategies from reading *Improving Classroom Questioning* by Chuska (1995). In addition to the changes in disposition and questioning style, I also saw movement away from a directive role with the students. Sometimes this led to a hands-off approach, but it was still progress for this very directive teacher.

This phase of the data collection included only two classroom observations because of Ms. Murray's *Chelsea* schedule. During the phase I was able to record one session on videotape and have an outside observer that same week. The phase lasted from the first time I saw her use any ideas from the Chuska (1995) book until I ended my data collection.

Teaching and Learning

Teacher Ownership

In my observations of her classroom and interviews with her, I came to understand that Evelyn's practiced model of teaching and learning at the beginning of our work centered around the idea of the teacher as the holder and conveyor of information. Within this conception, it was clear that the teacher's job was to convey the information to the students who would learn from hearing and working with the information enough to "get it." During my first observation, for instance, Evelyn worked with the class on math. The students were struggling with changing the sign when adding positive and negative integers. Ms. Murray's reaction was to recommend that they bring in a sign saying, 'When the signs are the same, you add the absolute value and keep the sign. When you are subtracting integers and the signs are not the same, you subtract the absolute value and keep the sign of the larger number' (Observation, 10/29/98). There was an implicit belief that if the students saw this saying enough, they would learn it.

Also tightly tied with this conception was the idea that learning and teaching were both owned by the teacher. This was consistently demonstrated through her ownership over the conversation – she chose what the students talked about and the

direction the conversation took. For instance, in the following section, she led them in thinking about the workplace. When she felt they were not covering information deeply enough, she inserted the information she felt they needed. In this example, when the student asked about harassment, she stopped the students' thinking by offering a pointed answer to his question and immediately returned to her discussion:

- Evelyn: (speaking to the whole class) "Those of you who are managers, what does a manager do?"
- Student: "Watches the employees."
- Evelyn: "Is that all? Just watch the employees? What do you think they should do?"
- Student: "The manager should watch the person do their job so they can do it if the person isn't there."
- Evelyn: "Okay. I can agree with that. The manager should know how to do all the jobs."
- Student: "Report people"
- Evelyn: "What if a person's late or not doing their work? What should the manager do?"
- Student: "Fire them"
- Student: "Warn them"
- Evelyn: "Does everyone agree? The manager should talk to them?"
- Student: "He could have the worker come in early or something."
- Evelyn: "Why come to work early?"
- Student: "To get their work done."
- Evelyn: "It's your duty to get to work on time, unless something happens. What is the difference between a person going to work early and a student going to school early?"
- Student: "The teacher"
- Evelyn (cuts student off): "Listen to the question. Should it have the same effect? What do you think?"
- Student: "No. Because if the worker is late, their pay is docked. And if a student's late, they just get a late pass."

Evelyn: “You think? If you’re late and I just taught $6x=36$ and you missed it, then you need to know how to solve that equation to get a job, you won’t. It’s the same effect...”

Evelyn: “What does probation mean?”

Student: “Probation for a certain time.”

Evelyn: “Mmm...not.”

(There are hands up around the room)

Evelyn: “When you get a job, you got through orientation. Think of this as orientation. You listen to things happening in the job. The manager will call you in and you’ll be told you’re on 3 months probation. During that time you’ll be working with another person. If you’re working and things are not working out, you may go on probation again.”

Student: “What if you’re accused of harassment or whatever and they put you on probation?”

Evelyn: “That’s not probation, it’s suspension. It’s completely different.”

Student: “Do you get less money when you’re on probation?”

Evelyn: “No – you get the same amount. If you earn \$40000 they’ll pay you that.” [She shifts back to the next word on the vocabulary list].

(Observation, 12/2/98)

Another indicator of the ownership of the task came when Ms. Murray talked about students becoming responsible for their work. In one interview, Evelyn said that she planned to have her students write letters to banks inviting them to come speak to the class (Interview, 11/12/98). Then she mentioned that this would be “the kids’ request, not mine.” Evelyn obviously saw some value in letting the students own their work, however she had difficulty with letting go of her ownership over the class.

A final way in which she held control over the activities of the classroom was through over-structuring the students’ thinking. In several instances she asked for

their opinion then told them at least a portion of the answer. In one, she asked the students to write an answer to a question about what kinds of errors bank tellers could make if they did not concentrate. Before allowing the students to do this, she emphasized, “Listen to how you will write your answer. ‘Some errors I think tellers can make are...’ It’s not one – they can make lots of mistakes.” (Observation, 12/17/98). She continued by telling them to choose two of their errors and tell what effect those errors had on the bank. In another instance, she asked the students to answer the question, “Was there a conflict in the scenario? Is yes, describe the conflict.” When the students first began writing their answers to the question, Ms. Murray told them, “These should basically be your thoughts. Don’t ask your neighbor” (Observation, 11/12/98). However, when she began to see students using the easy approach of writing, “No.” as their answer, Ms. Murray suddenly changed the assignment announcing, I’m going to give you just a hint for the question... There was a conflict, so no the answer is yes. Write the conflict. We all know there was a conflict. Some people just put ‘no’ because it is easier. Lazy!” (Observation, 11/12/98)

This interaction was important enough that I followed up with Ms. Murray about it our interview session. I asked, “ Do you think that any of them actually think

that there was no conflict? I mean do you think some of them struggled with identifying conflict?” Ms. Murray replied:

Some of them did struggle because some of them put ‘Yes’ and they did try to reflect back on what happened last week. Some of them were really going at it – were really understanding. They really remember. Some of them had difficulties remembering exactly what happened last week. The people who put “no” they knew that there was a conflict, but they were too lazy to write. (Interview, 11/12/98)

Evelyn seemed to believe that the students were basically lazy if they wrote “no,” yet she never questioned any students or pushed for further thinking from them.

Interestingly, during the next meeting I had with her, I specifically asked Ms. Murray about the roles a teacher should take in the classroom and she indicated that, in addition to ensuring the smooth operation of the class and being able to answer questions, a teacher’s job was,

...Maybe walking over and listening to their conversation. Or actually listening to the questions they are asking so you can know that they really understand the topic or they are asking for more information so that they can understand it better. Maybe what they are writing, after you have read it, you can tell that they are understanding. And, maybe in the game part, the way kids ask the questions in the game – you know, who knows what and who doesn’t. And maybe you will be able to take it from there. (Interview, 12/2/98)

She emphasized that in order to make sure students understand, you read their writing (Interview, 12/2/98). Yet, when faced with a situation to understand thinking through the students’ writing, she took charge and made them write the *right* answer.

Teacher Disposition with Students

In general, sometimes Ms. Murray tended to be quite harsh with her students.

One of my outside observers commented on this (Kirkley debriefing, 11/12/98) while another described Ms. Murray as being “authoritative” (Yoshida observation, 12/17/98). Using either description, it was clear that she was not promoting an environment in which students could take charge of their learning and feel free to experiment in order to build understanding. For example, one day as Ms. Murray circled around the room, as was her fashion, she announced to one team, “I want to tell you since I went around to every station ... You did not check the money. Go back and check the money.” The students in the group started to rearrange the money on their screen. The conversation continued:

Evelyn: “Maybe you should point on the side until – let him take his time.” (She talked to the pen and paper person who has started to write numbers before the money has been organized)

Evelyn: “Take the 100’s and put them here.” There is a tiny pause as the mouse student starts moving money. “You cannot tell how many are there. That’s part of your problem. You have to leave a little space... You have to put your 20’s together. The money is not stacked properly – that could be part of the reason it was not correct.” [Short pause as they move the 20’s] “How many is that? Shouldn’t somebody be writing that?”

Evelyn: [talking to the paper and pen student]: “Tyler, wait until he gives you the information.” [There is a pause as the mouse student continues to rearrange money] “Then you count the 10’s – 5’s I mean. That’s not what you had a while ago. You said the amount

matched the deposit slip. Count your coins now – I would start with quarters.” [They turn and tell paper and pen student what numbers to write]

Evelyn: “Count the next set...3 fives. Now you add that up.”

Student (to his teammate): “Let me tally. Let me tally.”

Evelyn: “The race is not for the swift.”

Student: “What?”

Evelyn: “The race is not for the swift. Stop rushing and take your time.”
(Observation, 11/12/98)

As shown in this interaction, Evelyn was authoritative and a little intimidating.

During the whole scenario, she loomed over the team and at one point actually took the mouse out of their hands and moved money around (Kirkley Observation, 11/12/98).

Learning

Interestingly, when I asked Ms. Murray to specifically focus on learning, she named a number of activities that might be viewed as inconsistent with the teacher-owned, teacher-led process that she had outlined. For example, she asserted that students learn from talking, writing, and asking questions. Further they learn from playing games (presumably drills, given that Ms. Murray enjoys engaging in these kinds of games with her students). In her description, Ms. Murray described an active-learning environment in which students were engaged and learning from each other (Interview, 12/2/98). It represented a vision of learning that indicates a belief

that students can learn from and teach one-another. However, Ms. Murray remained tightly tied a teacher-centered stance when she considered certain aspects of learning. For examples she said that students, “learn by their mistakes – by making a mistake and possibly, after they realize a mistake is made they can sit down and try to correct it on their own or ask for help to correct the mistake they have made” (Interview, 12/2/98). Here she implied that the students needed a teacher to tell them how to fix their errors.

Overall, as a teacher, Ms. Murray was an interesting case of contradictions. She seemed to want to move toward learner-centeredness, as indicated through her description of how students learn. However, she was also tightly tied to the notion of the teacher holding the answers and controlling all that occurred in the classroom.

Reflection

Throughout my work with Evelyn, reflection remained the primary building block of the change framework. While the proximal goals, enactment, and resources provided something to reflect on, it seemed that the reflection itself was where the change was occurring.

In my work with Ms. Murray, reflection was important because of its effects Ms. Murray’s actions, as well as on my understanding and the evolution of the

professional development framework. First, reflection allowed me to understand how she was thinking and what her goals were for the students. Next, reflection allowed Ms. Murray to consider her beliefs and actions in a different way. This allowed her to work through places where her beliefs were inconsistent with each other or where they were inconsistent with her actions. Finally, Evelyn's reflection was important to the professional development framework because it highlighted the difference between *doing* and "understanding." Evelyn originally focused more on *doing* things than developing "understanding." For instance, her class was centered on the memorization of facts and focused on right answers. Through reflective examination of her beliefs and goals, however, she began to shift to an emphasis on understanding – on that seems necessary in order to develop the kind of learning environment this research aimed to produce. Recognizing and working with this dichotomy of *doing* versus *understanding* was important because it highlighted some key aspects of professional development and classroom approaches. In fact, the story of Evelyn's use of reflection became a story of evolution from a focus on doing to a focus on understanding.

Evelyn's Reflection in Phase 1

The primary goal of the professional development activity in Phase 1 was to promote reflection and come to understand each teacher. To this end, while I did not specifically tell Evelyn that the interviews were promoting reflection, each interview included questions that specifically promoted reflection and, as time went on, there were more questions that focused on deeper reflection. Throughout this phase, the reflection in the interviews maintained a question and answer character rather than developing into a true discussion. It is quite likely that this alone had a strong effect on the depth of the reflective activities.

Generally, in the early interviews, Evelyn's answers to my questions were straightforward, and lacking depth. Granted, many of the questions I asked in the early interviews required only fact-based answers, however, as the number of reflective questions grew, Evelyn continued answering in less depth than a reflective practitioner might. For instance, in our first interview, she described some professional development activities she had participated in saying that:

They were basically like math problems – algebra problems where you used algebra tiles to come up with answers. Basically, we did higher order thinking problems using algebra tiles or using the overhead. There were a lot of logic problems. I think it was basically based on the new [NCTM] standards that we are now working with. It was like a mathematics seminar. Most of it really dealt with the new

curriculum that's coming out with the new standards, so that's what we really concentrated on. (Interview, 10/29/98)

This interaction did not indicate that Evelyn had made any connection between the learning goals of the new standards and the activities they were taking part in.

Through answers of this type, it seemed that Evelyn was simply taking the training at face value and not looking for deeper meaning. She was operating at a *doing* level in which the mathematics workshop was simply a time to work math problems.

Even in our discussion of her classroom activities, the orientation toward *doing* prevailed. For example, once she asked the students to complete a short activity at the beginning of class that required them to answer two questions: "Was there a conflict in the scenario? If your answer is yes, describe the conflict." and "Explain how dealing with a friend in business is different" (Observation, 11/12/98)

In response to this activity, I asked Evelyn what she was hoping to see come from this reflective activity². She replied:

I am wanting to see whether the students actually remembered what happened last week and see what decisions they made based on what they remember. Also, to see, as I pointed out – in walking around [I noticed that] some people said that, 'No. nothing happened.' They know very well that something went wrong. We had this whole discussion based on the choice or the decision they made, but because they did

² This was Evelyn's description of the activity. She labeled the handout with the questions on it "Reflection 1."

not want to write, they decide, “No” and leave it there because if they answer “yes” then they have to explain. So, this taught me that I will rephrase my questions in the future so they will not give me that blank, “No.” (Interview, 11/12/98)

This example further demonstrated Evelyn’s own conception of reflection as a tool for *doing* level activity. While she could have chosen questions or set goals to further student understanding of the issues surrounding the decisions or to help the students develop metacognitively, she instead focused on testing student recall of facts from the previous scenario. Interestingly, however, Evelyn showed some signs of critical reflection on her teaching in her answer as well. By stating that she saw an improvement and planned to use it, Ms. Murray demonstrated that she was becoming more aware of her own work.

Even at the end of this phase, Evelyn’s emphasis on *doing* prevailed. While she was moving toward deeper thinking throughout this phase of our work together, Ms. Murray did not move away from the focus on *doing* that she started with. For instance, when I asked her to talk about what students were learning or any other *understanding* level questions, she tended to either answer the question differently from how it was asked, or with a very superficial answer. In one such case, when I asked how she might improve on a lesson, she was able to provide a fairly detailed, reflective answer,

What I thought about this morning, after thinking of some of the things that have happened to me – I'm doing the activity and then I see a problem arise then I think 'maybe you could have used an overhead' – so that really came to mind, to use an overhead, which I'm going to jot down so I won't forget again.' (We both chuckle as she jots this down.) 'I'm going to use an overhead with the plastic film to model it first and have them follow what I am doing. So, it will be like a modeling situation. Either that or, I will work with the students themselves and see if there is someone in the group who knows what to do and maybe at every table I'll put someone who will be able to work with the students. (Interview, 12/17/98)

This showed that she was being reflective on her actions and using her reflections to improve on the lesson she presented. In that same interview, however, when I asked her about any confusion her students might be encountering, a reflective question that requires her to explore her beliefs about the students' thinking, she replied:

I basically don't think that anything difficult has related. The only problem I still have with them is their writing ability, their writing skills. That still needs to be worked in a lot. I intend to work with their English teacher to see how we can do something to enhance that so they can do that better. Some of the students, I find, still cannot speak clearly and they really cannot explain [themselves] exactly – they know what they want to say, but they are unable to explain it very well, so these are some of the things we basically have to work on. I think if they continue, talking with one another or keep speaking out in class in the little activities like this, it will give them the confidence they need to be able to talk. (Interview, 12/17/98)

She took the question and shifted it back to a *doing* level question. She skimmed over the development of “understanding,” saying that she felt they understood, and returned to focus on the more concrete *doing* tasks that were easier to work with and easier to diagnose.

Doing in the Classroom. It is important to note at this point that the emphasis on *doing* rather than developing *understanding* that had prevailed in our interviews was also the primary mode of operation and expectation in the classroom. For instance, in multiple observations, evidence indicated that Evelyn determined whether or not the students had “learned” based on whether they knew answers to certain closed-ended, fact-based questions. For example, in one debriefing with the students, Evelyn began by saying, “I would like to talk about what happened in the scenario this morning....” Then, she spent the rest of the class period discussing details from the scenario:

Evelyn: “What was the name of the person in the scenario?”

Student: “Rodriguez”

Evelyn: “Did she have a first name?”

Student: “Rose”

Evelyn: “Rose?”

Student: “Rosa”

Evelyn: “There was an ATM card. What was it?”

Student: “Chelsea”

Evelyn: “Chelsea? Yes, the name of the card was Chelsea ATM something. ATM what?”

Student: [answers with a satisfactory answer – they move on to the next question]

Evelyn: “What about the signature card?”

Student: “It had her signature”

Evelyn: “MAC”

Evelyn: “And something else?”

Evelyn: “What else?”

Student: [no one says a word]

Evelyn: “NYCE. On most bank cards now, you see NYCE. What happened in the scenario?”

Student: “It was a stolen check.”

Evelyn: “It was a stolen check? Does everybody agree?” The students nod. Evelyn turns back to the student who said that it was stolen and asks,] “Why do you think it was stolen?”

Student: “Her name wasn’t on it”

Evelyn: “Did you discuss in your group that it was stolen?”

Student: [inaudible]

Evelyn: “So what did you choose?”

Student: “D”

Evelyn: “What happened?”

Student: “She had her ATM and check and she had an account”

Evelyn: “You told me it was stolen.”

The bell rings and class ends. (Observation, 12/2/98)

In this discussion, as with other discussions during this phase, there was no emphasis on developing any understanding about how banks work. Further, the only ties to real life she promoted through this line of questions was the memorization of inconsequential tidbits of information rather than transferable concepts. For instance, she focused on what symbols were on the bank card rather than what those symbols might mean.

Another way in which she promoted *doing* was through avoiding dealing with problem solving. Ms. Murray, never specifically introduced problem solving or suggested that they were, in fact, supposed to be developing problem-solving skills. In fact, throughout this phase, her only support of problem solving was in the form of clues she offered for how to do the scenarios. These clues, however, were usually quite directive and focused at an experience level rather than at a conceptual level. For instance, on the day the class was introduced to *The Chelsea Bank*, Evelyn instructed them to “think of the manual as a training school” (Observation 11/5/98) after explaining to the students that when she first started working in a bank she had to attend training school. She followed that information with, “Be observant” (Observation, 11/5/98). These two ideas, following the manual and being observant, form the foundation of Evelyn’s problem-solving strategy during this phase of the research. By the third week of working on the computers, she offered, “Read everything carefully...you know what to do. On the next scenario you *must* look at the manual and do everything systematically” (Observation, 11/12/98)

Throughout this phase, that was as detailed as she got with the entire class on supporting problem solving. When she worked with individual teams, Ms. Murray focused on the specific task at hand. In the typical exchange, she took on a directive tone – providing students with the “right way” to do things rather than providing an

outline or strategy that the students could learn to apply not only to *Chelsea* but elsewhere in their lives as well. For instance, the following series of interactions occurred back-to-back on 12/2/98:

Evelyn moved to team 14:

Evelyn: "What's happening in the scenario?"

Student: "She"

Evelyn (interrupting student): "Who is 'she'?"

Student: [no response]

Evelyn: "Okay, so let's return. Go back."

Evelyn moved to #15

Evelyn asked, "What's going on in the scenario?"

Student: "Some of the checks are not signed."

Evelyn: "So it was not endorsed – the word is endorsed. Did you look at the manual?"

Student: [inaudible]

Evelyn: "Go to your manual and see what it says. Then start turning over those checks."

She moved to Computer 17 and asked, "What's going on in the scenario?"

Student: [inaudible]

Evelyn: "When you went to report you chose something, and then it says 'Next' – here is 'Next Screen.'"

She was talking about the mechanics of getting from making the decision to the consequences screen. She got them to consequences by clicking on the proper buttons for them, then she read what it said and exclaimed, "Ha ha. You're going to get fired. Why? Because you are rushing."

Ms. Murray moved to the group on computer 19.

Evelyn: "Let's talk about the situation. What's going on here?"

Student: "She had 4 checks. We cannot cash the check with the signature?"

Evelyn: Why?

Student: [inaudible]

Evelyn: "So, can you ask her, as a teller, to sign the check?"

Student: "Yes."

Evelyn: "Then what happens?"

Student: "We check the check signature card."

Evelyn: "I don't think that's the problem. There's another problem with the account."

She moved on to the team on computer 10 and asked them what was happening in the scenario. Another team broke in and asked what to do when they finish. She told them to go sit down and write about what went well and what did not go well in the scenario. Evelyn turned back to team 10 and asked them about the check. She asked, "Can you cash it?"

They answered that they could. Evelyn asked, "If you want to cash a check from Citibank and that's not your bank, can you cash it?"

The student answers, "No."

She moved to the team on computer 7 and asked the team what they were doing. They answered that a woman did something. As with the earlier team, she cut them off and asked who the lady is. They did not know. She sent them back to find out.

She looked over Computer 5 team's shoulders' and read their consequences. She told them, "It's very good to read the other consequences." (Observation, 12/2/98)

As shown in this series of interactions, Evelyn's concern was how much attention students were paying to what they read, not the quality of their thinking. When the students did answer a question "correctly," Evelyn moved on to the next team rather than probing more deeply with the current team.

Further, in promoting a *doing* atmosphere, Ms. Murray focused heavily on the outcomes of the student work – offering praise for correct answers, not for good thinking (e.g., Observation, 11/5/98). It would be unfair to Ms. Murray not to mention that others shared this belief about success. In fact, on the first day the class used the simulations, Mr. Gabel, who was in the room because there were guests from Classroom, Inc., exclaimed, “YES!” when he saw a team get a right answer (Observation, 11/5/98). While the emphasis on promoting correct answers was understandable, it overlooked the value of developing pride in successful thinking. Further, there was never any indication that the thinking process was more important than the answer that the students chose. It was this kind of rich approach that was missing from Evelyn’s classroom.

Impediments to Reflection in Phase 1

During the first phase of my work with Evelyn, it became apparent that she preferred not to critically evaluate her own performance in regards to implementation of the simulations. When faced with questions that specifically asked her to examine her own teaching, Evelyn tended to shift the focus away from herself. For example, when I asked her what she would most like to improve about her teaching one day, Ms. Murray replied,

What I would really like is some computers that work so every time I go in there I don't have to be adjusting and changing and going through this. You know what I would like is a room with the computers where these kids go in and do what they have to do and no one else is going in and messing it up and every morning before you come I have to go to every computer and make sure everything is on. This morning when I went in, there were five computers that were knocked out again. And, it's very, very frustrating because here it is. I am teaching a first and second period. I have to kind of leave them [to go] back and forth – running back and forth to make sure everything is on so that by the time you get here, the kids won't be idling. (Interview, 11/12/98)

The variables from the outside environment, in this case the failure of the technology, allowed her to focus away from herself in evaluating the day's work.

However, when asked about a topic that did not require her to evaluate her own performance, Ms. Murray answered thoughtfully and deeply.

Chandra: “Do you notice when you're preparing to teach the math class and your *Chelsea* class, do you notice any differences in the way you prepare to teach *Chelsea* versus the way you prepare to teach math?”

Evelyn: “Yes. The difference basically is that math is very structured and one thing builds on the next. So, if I start working with angles and the next thing I'm going to do is triangles because they are angles and they have to really connect together. However, working with *Chelsea*, it's different scenes at different times and different things that they are doing in the bank. First of all, it requires a lot of preparation for the kids – for it to be interesting and for the kids to understand what is going on in there. And, it really takes an extra step after the fact where you have to ask questions. You do the same thing in mathematics also, but everything is there for you in mathematics – the homework assignments, you know where to

choose it from. Whereas, in Chelsea, I have to really sit down and look at the lesson and decide on the level of the students I am teaching to create certain questions that would be interesting and that will hold their interest. So, it's really a different situation" (Interview, 12/2/98)

Ending Phase 1

Phase 1 ended with me asking Ms. Murray to do a written reflection about how she felt about the things we had been doing. In her reflection, she once again emphasized the notion of *doing* saying that to enhance my work with her, I could "make suggestions about other things in the scenarios possible to expand or enhance the lesson." (Written Reflection, 12/17/98). This pointed at her desire to be handed answers rather than confront problems and work through them on her own. However, she also commented that all the reflecting she had been doing was helping her, "to think of the next step" and said that, "I have learned to become more a facilitator than ever before, maybe because I feel as though I am being watched. I also feel that this is positive and helping me to let go even more." (Written Reflection, 12/17/98). This indicated that there was perhaps a significant amount of change in Evelyn's beliefs about teaching as well as a raised awareness on her part of what was going on in the classroom.

Reflection in Phase 2

Overall in this phase, I saw considerable inconsistency in Ms. Murray's reflection. At times, I felt that we were making tremendous progress while at others we seemed to be starting over again. For instance, when reflecting on the proximal goals she had implemented in her class one day, Evelyn explored whether or not students understood what "goals" really were (Interview, 1/7/99). In this reflection she moved beyond a *doing* level reflection to tackle student understanding. In the very next question, however, she hypothesized that a problem the students were likely to have in developing reading and writing skills was that they "don't really like research. And...they really don't like to summarize. They like to plagiarize – take everything that they see and write it." (Interview, 1/7/99). While this was insightful about how students complete assignments and insightful about Ms. Murray's perceptions of the students' work, the judgement did not seem to really explore the issues involved with the learning and was not focused on understanding the issues that students dealt with.

Perhaps the most surprising and revealing aspect of our reflection during this phase was what it told me about Evelyn's thinking. For instance, in one discussion, Evelyn described how she would improve the day if she were to do it over again. She offered that she would have the students do more work up front – perhaps using

leading questions to help the students prepare more thoroughly for the scenario (Interview, 1/21/99). Together with an earlier interview where she suggested that she may have been able to limit student confusion on an assignment by filling out a similar worksheet on an overhead projector (Interview, 12/17/98), this opinion showed that Evelyn was still committed to a directive approach to teaching.

Another comment indicated that she was still dedicated to the notion that right answers were indicators of good work and understanding:

I think what went most well was I knew the scenario was a hard scenario. I had difficulties with other classes before. And, what went really well is – I have 10 groups in there and 8 groups were able to get the answer and usually, no group gets the answer... But, I was really happy today that eight groups were able to pick “C” – only two did not. (Interview, 1/7/99)

Without the reflective component of our work, I would not have had any way to learn about Evelyn’s beliefs.

Finally, Ms. Murray through reflection, I was also able to gain valuable insight about Ms. Murray’s thoughts on problem solving. Even in this second phase of our work, she was still not focused on promoting problem solving. However, through reflection, one outside observer (Duffy) and I were able to raise her awareness of problems solving. We asked her about strategies the students might be formulating. She answered,

I think some of them have. I have about three groups [who] really have their own strategies. You find that they usually finish first and it's not because they are not going through everything. It is because they know something – some strategy – where we know what negotiable is, we already know certain things about the checks, let's just go directly to their – to where we can search and see does the person have enough money and all this – instead of going through the whole manual to figure it. Let's go see if this person has enough money because in walking over – one of the kids said, 'he does not have enough money in his account.' So, we can't cash the check. So, they knew immediately - I'm not even going to look up to see if it's negotiable or not – there's just not enough money anyway. So that was like one of the strategies I noticed today. (Interview, 1/21/99)

Through this kind of question, we were not only able to see how Ms. Murray was thinking about problem solving, but also emphasize to her that problem solving strategies might be important. As with her other reflection at this point, Ms. Murray kept this discussion at a procedural level.

Throughout this phase of our work, I continued to ask probing questions that were designed to promote more careful consideration of the issues. For instance, on January 21, when I asked her how she supported collaboration, Evelyn responded that she did it through, “walking around and asking questions – asking them where they were and what's happening in that particular scenario... If they weren't able to answer the questions, instead of giving them the answer, I just had them go back and look in their manual...” (Interview, 1/21/99). Because this was a fairly vague answer

that did not clearly convey to me how she felt she was promoting collaboration, I asked another question, “What kinds of questions did you ask?” (Interview, 1/21/99). By doing this, I was able to support Evelyn in thinking a little more deeply about her actions and I was able to develop a deeper understanding about how Ms. Murray felt she was supporting collaboration. Further, these deeper questions allowed me to move into the next phase of support that I offered for Evelyn – providing her with my opinions of things that had gone well in her classroom that day.

Using Reflection in the Classroom

In her classroom, Ms. Murray continued to emphasize *doing* even through the reflective assignments she made. In this phase, she had the students engage in some reflection. In the best instance, Ms. Murray asked the students:

1. When you have a job, why is it important to do the best you can at all times
2. Whether it’s in school or on a job, what are some reasons people don’t do their best work all the time? (Observation, 1/21/99)

During the discussion of these questions, Evelyn solidified the tie to the real world by offering stories about her own experiences in business. She added comments such as, “As I mentioned before, I was a manager – I fired a few people. It was hard.” (Observation, 1/21/99). Similarly, at the end of the same session, Ms. Murray led a debriefing session for the students. She again provided them with questions as a

basis for thinking, however, this time she allowed the conversation to stray a little further from the questions. They talk about appropriate ways to reward employees when they have done a good job as well as how firing people costs the company more money in the long run than keeping them in most cases (Observation, 1/21/99). These kinds of discussions are helping students start to understand what the workplace is like while they are still in school.

In our interview following that session, Ms. Murray explained that these questions asked the students to recall interviews they had to do with their parents earlier in using the simulation and, for some, a chance to recall a fieldtrip experience from using *Chelsea* in sixth grade. According to Evelyn's description of the goals for this activity, *doing* was still the primary emphasis:

My goal was to see how they were thinking and listening to their parents or what has been happening and some other things that I have discussed with them. I wanted to see if they could have recalled some of the things that the supervisor really needs to do when things are happening. (Interview, 1/21/99)

While it was good that Evelyn was using reflection in the classroom, it was still being used as a recall tool to promote students' memories.

Reflection in Phase 3

Phase 3 was marked by an overall improvement in the depth of Evelyn's reflections. Further, it was the phase in which I was the most proactive in my support of Ms. Murray as she began to more closely examine her teaching. For example, when I asked Ms. Murray to talk about how she was supporting collaboration while the students worked, her answer did not match the question. She instead replied,

Well, what did I do today? Well, walking around and working with the kids, looking at what they were doing, asking them questions, looking at some of the words that they weren't spelling correctly and telling them this is what was wrong and stuff like that. I think doing that, walking around – basically – and helping them out was very good. (Interview, 2/4/99)

To me this was missing several of the better things she did during the class period. Therefore, I added to her list highlighting the thing I thought were effective in promoting collaboration (Interview, 2/4/99). For instance, one approach I pointed out was her new approach to helping teams get seated in a way that promoted collaboration. During the scenarios, she typically had a lot of trouble with the students not sitting around the computer in a way that allowed all the members of a team to see the screen and participate. Therefore, on 2/4/99, Evelyn introduced their seating arrangement as sitting in a triangle. This worked very well as “triangle” was

something the students were familiar with and could figure out for themselves. Based on the success of this simple fix, I mentioned:

Chandra: “I think your insistence on them sitting in clusters was really good.”

Evelyn: “Yeah, the triangle shape. It’s strange that – sometimes you talk to people and then you come in and you say wait a minute. I was speaking to my daughter last night and she was writing a poem and she made it a poem to be in the shape of a triangle and that kind of – this morning, I was saying wait a minute. Maybe if I put them in a triangle – and I think it really worked better because so that they can see better than if they are like all over like that.” Interview, 2/4/99)

She had found an effective, yet simple, fix to an ongoing problem with student collaboration.

Later in the same interview, I asked her about how she supported problem solving. Her answer was, in many ways, more appropriate to supporting collaboration than supporting problem solving. So, I suggested that her answer was a great example of something that supports collaboration. My goal was to help her see things from a different perspective.

Chandra: “What did you do to promote problem solving?”

Evelyn: “Well, asking questions was basically one of them. Basically asking questions – for problem solving. I think that’s mostly what I did. Asking them to talk to each other more – that they can’t solve the problem with just one person saying this is this one. And, no one deciding ‘let’s go back’ – that was one other way I did that – that you have to sit there and communicate with each other to solve the problems.”

Chandra: “Which also promotes collaboration. I also think the objective for the day really promotes problem solving. Because you’re paying

attention to information – then you’re going to be doing a better job of problem solving.”

Evelyn: “Right.” (Interview, 2/4/99)

While these interventions were relatively small, I attempted to use them to help Evelyn consider things from new perspectives. It is undeniable, however, that these interactions also provided Evelyn with insight into my goals and thinking, thus allowing her to potentially provide me with answers I wanted to hear.

As with earlier reflection sessions, Ms. Murray was also able to provide some very nice reflection for certain questions. For instance, when I asked her about monitoring for understanding, she mentioned that she uses questioning to help understand what the students are thinking. But, when I asked about problem solving, her answer was also that she asks questions. To make her answers more clear, I had her explain what kinds of questions promoted problem solving versus promoted monitoring for understanding. Her reply was:

To solve problems, it’s basically like a “why” question, whereas the other situation, to just get information, is like ‘what are you going to do?’ Like a ‘What?’ and a ‘Why?’ Two different questions. ‘Why are you doing this?’ and ‘Where are you going to go at this point in time to do such and such?’ I think they are two different. Basically in the problem solving, I ask a lot of why questions – ‘why are you doing this?’ and stuff like that. And, ‘where are you going to go now to get this information to solve the problem?’ That’s one of the things I did with the problem solving area. (Interview, 2/25/99)

As demonstrated, Ms. Murray did see the differences in the two kinds of questions.

Change Through Reflection

Perhaps the most interesting thing about the reflection in Phase 3 was how it showed where Ms. Murray was in her thinking and highlighted her struggle not to go back to where she had been. For instance, she seemed very proud when I asked what she felt best about in her use of the simulation so far this year. She announced:

What I feel best about is that I have become an excellent facilitator. It's not me telling them what to do. I'll just walk around and ask questions, note some things that I'm finding to be not quite right, and not tell them it's wrong, but ask them questions – to lead them up to get the right answers.

(Interview, 2/25/99)

This answer showed that she not only felt like she had adopted a new approach to teaching, which she intended to keep using (Interview, 2/25/99), but also that she was proud of her work toward becoming less controlling and more learner-centered.

However, when I asked her how she would improve or change things in her class, she continued thinking in a more directive and controlling way. For instance on 2/25/99 I asked her about how she would improve about her teaching with the simulation. She replied:

Maybe “improve” is – oh. What it could possibly be. Maybe some more training in some areas where I basically know the whole scenario. It's so hard to use the word “improve” when I have done it so many times. But, maybe some more directed questions. Maybe I can develop different type questioning based on what is in the scenario. I basically like kids acting

out and stuff like that. So, maybe I can work some more on that because I have never allowed them to act out the customer service representative part, so maybe I could work on that and maybe create something so that the kids can work out – work that out. Maybe I need to improve more on writing different areas and skits so that the kids can really work on that area. But, on the scenario itself, I basically know the whole scenario I've done it so many times – maybe writing some more what they need to do and maybe to work with them even more closely. If I had the time – but I don't have the time – to work with them as much as I would like to be able to see that the final product of their skit really come the way I want it to come out. So, maybe something like that. (Interview, 2/25/99)

This answer represented a breakthrough in that Ms. Murray was willing to think about improving her own performance, something she had not done previously.

However, the improvements she suggested were very teacher-oriented and directive.

This was especially evident in her desire to use more directive questions for the scenarios. Her teacher-centeredness was also evident when she said that working with the students in the skit would help it “really come out the way I want.” Of course, this might also have been her way of saying that she wanted to work with the students to meet her expectations for them, which would be a more learner-centered approach.

Related to this was the sudden emergence of interest in promoting student interests and learning as they worked through projects. Ms. Murray solidified this interest by talking about working with the students in the process of learning rather

than waiting for students to make mistakes and punishing them for those mistakes (e.g., Observation, 2/4/99). Further, she was making efforts to tie the debriefing discussion more tightly to students thinking and then pushing them forward in response to reading the outside resources. She began actively promoting moving the students toward their goals (Observation, 2/4/99). Finally, it seemed that Ms. Murray was making efforts to be more facilitative in her discussions with students as a way to support them in the process of learning rather than assessing what they have learned. In one example, she talked to a team about how to improve their decision making-process:

Evelyn: “Before you made the decision did you go to the manual?”

Students: “Yes”

Student (indicating herself and another student): “We said C. He said B.”

Evelyn: “What do you think you could have done?”

Student: “Could we have gone back to the manual?”

[The student seems sincere in asking this question]

Evelyn: “Yes. You could have.”

Evelyn elaborated – mentioning once again that they were looking for details. She said, “With 3 of you, if someone disagrees, you need to go back and see what everything said.” (Observation, 2/4/99)

While she did not talk to them until they had completed their decision, the conversation was very forward looking. She did not offer them feedback or tell them that they had done poorly, instead she provided the team support to move forward in their cooperative learning skills. By using this approach, she not only learned about the students’ thinking, but also promoted the students’ reflection.

Finally, this phase saw the reemergence of student reflections at the end of each scenario. In the first phase of my work with her, Ms. Murray had consistently included a reflective activity at the end of each scenario. These varied from asking students to write about the choice they made to evaluating their teammates. However, during the second phase, these activities had disappeared from the normal routine of working on *Chelsea*. With an apparent increase in Ms. Murray's interest in supporting problem solving and critical thinking³, the reflective activity returned to the standard *Chelsea* format. By asking the students to do these simple reflections – such as writing what went well and what did not go well in their work that day (Observation, 2/25/99), Ms. Murray provided the students with an opportunity to think about their own performance and ways it could have been improved.

Through these efforts, it seemed that Ms. Murray was finally shifting more toward supporting an *understanding* classroom. Her efforts required much higher level thinking on her students' parts than her earlier approaches. Further, she was slowly shifting her conceptions of what it meant to be a teacher – moving from reactive to proactive as a way to support students in developing their thinking.

³ During this final phase, Ms. Murray began using more extension activities such as role playing various scenarios. She also started requiring the students to generate their own questions (Observation, 2/4/99). She explained that students who were thinking at a higher level were more

However, she still had not totally shifted away from the *doing* mentality exhibited earlier. She was still quite focused on right answers and working through things the “right” way.

Ending the Work

As at the end of Phase 1, at the end of Phase 3 I asked Evelyn to reflect on my role and the impact I had on her teaching. She responded saying,

I think you have played a real great role in working with me to help me to be able to extend myself in other areas and to even work on questioning techniques even with the people who I am mentoring....It made me look at myself, you know, if you were not here, I would have done Chelsea Bank, but not the way I did it. I would have done it and maybe go around and help around, but it made me put myself aside more as a facilitator to look in and see what they are doing and I did a lot of that because I basically think that that may be some of the things that you were looking for. So, it allowed me to know that, okay you don't have to be telling the kids what to do all the time, you can sit back, you can look on and see what they are doing, and walk around. So, that really gave me that incentive to do things like that. (Interview, 2/25/99)

This answer indicated that my work with Ms. Murray had not only moved her to a point where she was more comfortable examining her own teaching style, but also

inclined to do these kinds of activities and she felt she needed to pull the *Chelsea* class in that way as well (Interview, 2/4/99).

moved her toward becoming a facilitator. She seemed quite pleased and proud of her progress during my time at Thacker.

Proximal Goals

Proximal goals, as a device to influence teaching, became a major component of my work with each of the teachers. While it was my work with Therese that influenced the approach to proximal goals that I adopted, my work with Evelyn helped evolve my understanding of how to introduce proximal goals and helped me to understand how they needed to fit into Evelyn's thinking in order to become an enduring part of this professional development effort.

Introduction of the Goals

I introduced proximal goals to Evelyn on December 17, 1998 – marking the end of Phase 1 of our work together. While the implementation of this step had been problematic, the timing was based on my observation that she was asking some good questions while her students were working on the computers and starting to let the students work more on their own (Journal, 12/3/98). Further, I had developed a method of introduction that treated Evelyn as a professional developer rather than as a learner. This approach involved me describing the strategy at a theoretical level, with examples, and allowing her apply it to her situation (Interview, 12/17/98).

In my initial thinking of how to introduce proximal goals to the teachers, I was focused on using the proximal goals as stepping stones to improve teaching. These would have been focused on each teacher's movement toward becoming a facilitator. However, through my Phase 1 work, I realized that this would not be appropriate. After all, Evelyn felt that she was already a good teacher and was not generally able to identify ways in which her teaching could be improved. Further, I questioned what right I had to try to promote alterations in a teaching approach that had been recognized as being effective – after all, Ms. Murray was voted teacher of the year for the district (Observation, 11/5/98). Also, I recognized that the desire to develop learner-centered classrooms was my goal, not Evelyn's. Ms. Murray had only alluded to becoming more learner-centered in vague ways in our interviews throughout Phase 1. Working through these issues as well as Therese's issues, led me to a new approach to proximal goals that focused on the students' performance. Rather than using the goals as stepping stones for the teacher, they became a support structure for helping the students reach new goals.

Once I recognized the shift in focus for the proximal goals, I continued to struggle with how to introduce proximal goals to Evelyn. Being the professional development person for her school, Ms. Murray was used to taking ideas and using them in her own way, therefore, my reasoning was that a hand-holding approach

would be likely to fail (Journal, 12/8/98). I did want to try a cooperative approach though, and offered it to her. I suggested that we could work together to develop some goals for her students (Interview, 12/17/98). In preparation for this cooperative approach, I had completed a list of potential goals related to one of her areas of interest, developing good team skills (Journal, 12/8/98). This was a skill area that had come up more than once in our discussions and was something that she tried to promote in her class. Further it was one of the few areas that came up in our work that clearly seemed appropriate to using proximal goals in the way proposed here – to look at what the students needed to improve and how the teacher could support it.

In hindsight, the introduction to the proximal goals fit very well with Evelyn's personality. She listened attentively, but did not want to work cooperatively on developing the goals (Interview, 12/17/98). This was not surprising considering that she was not used to working with other people on her own classroom plans – she was accustomed to being the “expert” not the “learner.” However, she did appear interested in learning about them and in trying to think about them for herself – in fact, she took notes for future reference as we talked (Interview, 12/17/98). The introduction began:

Chandra: “...the thing I want to talk to you about is called proximal goals. Have you heard of proximal goals?”

Evelyn: “What do you mean by proximal?”

Chandra: “What it is, is everybody has big goals in life and what proximal goals are, are the little subgoals in between to help – sort of like stepping stones to get you there so that you aren’t just forever going after this nebulous goal that you won’t even know when you get there. So, you’ve got these small concrete steps to take. For instance, handing kids, you know those self-work math books. There was a study done with proximal goals where they gave one group of kids one of those self-study books and said finish it. They gave another group of kids the book and said do 10 pages a day, and they gave another group of kids the books and some other stuff and said do whatever. And, the kids who they said do 10 pages a day got through the book and they retained more because they had that goal everyday – that little bit done. Rather than, ‘you’ve got five weeks to finish the book.’ And, so the proximal goals are like the little steps that you take. So, I have Ms. Collins working on this too. Think of maybe the big goals you have for your students right now. Maybe you want reading more carefully, for instance. Then, you think of ‘what are some stepping stones we can have them doing to get them used to reading carefully?’”

Evelyn: “Okay”

Chandra: “Then you just – you don’t try to do them all at once, of course, because you want the students to get used to it, then you reflect on how it’s going and you alter what you are doing accordingly. And the same things work for your own performance. You can look at yourself and say, ‘What would I like to be doing better?’ And then, you slowly change – for instance, maybe you want to be promoting more reflection – so you say, what can I do to promote more reflection? I could ask every team one question after the scenario is over? That’s a goal where ‘becoming more reflective’ is a hard goal. Does that make sense? So, we can work on them together, or if you wanted to think about that.”

Evelyn: “Let me think about them – okay. Okay. I’ll think about them and then when you come back we can talk about them.”

Chandra: “Okay. What I’ve noticed in talking to you and Ms. Collins and other people is a lot of things we do in life tend to use this approach

and we just don't think about it, so it's just a matter of making something you're doing more apparent and saying 'oh this works – so let's try doing it more.'”

Evelyn: “Right. Okay. I'm going to work on that and see. Okay.” (Interview, 12/17/98)

I chose to use both outside examples and those relevant to her own classroom based on what I had already learned from working with the teachers. By doing this, I hoped Evelyn would see a rather abstract concept in more concrete ways. Further, I suggested that reflection was a valuable tool in implementing these goals and emphasized that these were little steps to be done one at a time. With that, Ms. Murray formulated her own ideas for proximal goals.

First Use of Proximal Goals

After the Christmas break, Ms. Murray returned to her classroom ready to use proximal goals. She chose to focus on “...the writing process. So that [the students] will be able to write and read and understand and to be able to take notes. The goal is basically taking notes effectively and writing.” (Interview, 1/7/99). She mentioned that she had chosen this goal because it fit with the new math standards (Interview, 1/7/99). Through her focus on the goal of writing, Ms. Murray seemed to change her teaching style to one that involved more teacher interaction as the students worked.

Ms. Murray began the class on 1/7/99 by announcing that “we are going to try something a little different today...[we are going to] focus on reading ability and

writing for understanding.” After several minutes she restated the goals for the day saying, “Today’s theme is “reading, writing, and understanding.” (Observation, 1/7/99). This provided the beginning of a very different kind of class from any I had seen Ms. Murray teach previously. She continued in her introduction introducing their assignment of writing their own questions – warning that she does not want “elementary” questions (Observation, 1/7/99). In our interview, Evelyn said that she announced the goals this way because, “sometimes I like to tell them what it is because with that class or with some other classes, if you really don’t tell them what their goal is, they just tend not to try to do their best.” She is also quick to point out that although she announced the goal, some students still did not do what was expected (Interview, 1/7/99).

As the students began working on the computers, Ms. Murray shifted to a teaching style that involved more questions and more interactions with her students than I had seen her use before. She tended to use questioning in two ways: probing – using questions to understand or push student thinking, and directing – focusing on closed-ended questions with perceived ‘right’ answers or procedures that the students should follow. In her first implementation of the proximal goals, and in fact in the following observation as well, I saw an alarming trend. Ms. Murray would begin by asking an introductory question such as, “What’s going on here?” If the

students did not provide her with enough information, Ms. Murray would begin using closed-ended questions to direct the students to where they needed to go. If they provided her with adequate, correct information, she moved on to the next team. For instance, on 1/7/99, she participated in sixteen interactions in 15 minutes 29 seconds – all of them show this trend. A sample from those interactions demonstrates the trends:

Ms. Murray moved down the line of computers – stopping and watching over shoulders and interacting with certain teams. When she gets halfway down the row of computers by the windows, she tells the team at that computer, “Stop! How did you determine that he’s forged James Bradley’s signature?”

Student: “Because we checked the manual and it said that it has to have the person who’s giving you the check’s signature on it. It had Mr. Bradley’s signature on it. His name is John Beadle.”

Evelyn: “John what?”

Student: “Beadle”

Evelyn: “Very good.”

Evelyn moved to the next team. She asked them, “Okay, which account are you working on?”

Student: “Mickey’s”

Evelyn: “Who?”

Student: “Mickey Mike.”

The students in the group told Evelyn about what they were doing. She told them that she can’t hear and to let the person at the computer talk.

Student: “He wanted to deposit \$970. And we checked the amount to see if it’s right on that tally – on the paper.”

Evelyn: “He wants to deposit?”

Student: “Yeah.”

Evelyn: “Do you have to check – okay, so you checked your deposit slip – okay? And what else are you checking for?”

Student: "To see if what we're doing is right."

Evelyn: "Okay."

She walked down the row and looks over the shoulders of the next group. Then the next. There she stopped and asked,

Evelyn: "Which scenario this is?"

Student: "Mickey Mike."

Student: "Yeah – Mickey Mike."

Evelyn: "So, what's going on in this scenario?"

Student: "He wants to deposit \$970. And we're checking the right amount to make sure he gave us."

Evelyn: "So, you're checking the deposit slip."

Student: "Yeah. And we're tallying it up."

Evelyn: "Okay."

Ms. Murray walked away, while one of the students was still explaining what they were doing.

Ms. Murray moved to the next group and watched them for a moment, then asked, "Who is doing the writing in this group?" One member raised her hand.

Evelyn: "Okay. Which scenario are you on?"

Student: "Um" [pause – perhaps a second long]

Evelyn: "Here we go. You're supposed to be reading. Writing. Right? You don't know the scenario and shouldn't that be the first thing you have on your paper?" [there is a very short pause, then Evelyn looks at the screen] "Who is she?"

Evelyn: "I'm going to ask you first. If you're going to sit down and create questions or you're going to write on something, you need to know what you are writing about. The person's name who you are talking to. Okay? What's happening in this account – with Ms. Rodriguez? What's going on with her?"

Student: "She wants to cash a check for two thousand four hundred dollars."

Evelyn: "And what's happening? Are you going to cash this check or what?"

Student: "Yes"

Evelyn: "Why"

Student: "Because there is enough money – it's under two thousand five hundred."

Evelyn: "How do you know there is enough money?"

Student: "We went to the menu – [inaudible sentence beginning] and she has just enough."

Evelyn: "Okay – hold on just one second. Someone comes to the bank and they want to cash a check for \$2400. They gave you a check and the only thing you did was check the manual, right? To make sure that check can be cashed. Question. What if that person does not have \$2400 in the bank? Aren't you supposed to check somewhere else to find out if she has enough money to cash that check? Hello?"

Student: "Yes"

Evelyn: "So, we're going to go back to cash checking and see what are the rules for cash checking. Go to the manual. Go to Cash Checks. She needs a Chelsea credit card with signature, a passport with signature and photo, Right? These are some of the things that you need to start jotting down to create questions about this." (Video Observation, 1/7/99)

While many of the above interactions involved more memorization and fact-based learning, Ms. Murray also made some real breakthroughs in her use of probing questions. In one of the nicest examples of probing I saw in Evelyn's class, she used probing questions to understand how her students got to the "decision" screen so quickly.

Evelyn: "Okay, I have a couple of questions. What happened in this scenario?"

Student: "This guy"

Evelyn: "This guy." Excuse me, if I ask you a question – on the screen it did not say "this guy" I don't want to hear "this guy." That's why we'll be doing reading and writing. We have to be observant. No where on the screen does it say this guy. So, what did it say?"

Student: "John Beadle"

Evelyn: "Very Good. So what is happening in this scenario?"

Student: "He wanted to cash a check from James Bradley."
Evelyn: "And?"
Student: "He wanted to cash the check. For \$459.92."
Evelyn: "But, you got to the decision already. So, how did you get there? What happened?"
Student: "He just wanted to cash the check."
Evelyn: "Oh, so you want to cash a check, now you went straight to the decision? Do you know if you can cash the check?"
Student: "Yes because we checked the signature card."
Evelyn: "Oh, so something happened here, right? So, what did you do, how did you know its okay to check – to cash his check?"
Student: "We checked the signature card and went to the manual and it wasn't over the limit, it wasn't over like two thousand five hundred dollars. So we can cash it."
Evelyn: "Was that all you did? You went to the manual, you looked at the disposition for cashing the check, you found out it was under two thousand five hundred dollars, so you decided to cash the check. Is that all you need to do to cash a check? What are you supposed to do? What are you supposed to look at?"
Student: "ID"
Evelyn: "His ID. Did you look at the ID?"
Student: "No"
Evelyn: "Uh oh – you're fired. You have to look at the ID. What if it's not his ID? What if it's not his check? So you have to go back – okay – to your manual." (Observation, 1/7/99)

In the first portion of this interaction, Evelyn uses questions to get at how the students were thinking about the decision. It was an excellent strategy for understanding their thinking. However, once she starts to see how the students are thinking, she takes control of the process and asks them closed-ended questions.

Once the students were ready to type their report at the end of *The Chelsea Bank*⁴, Ms. Murray circled around promoting attention to the details of writing. While this fit her stated goals for the day very well, it also furthered the notion of the teacher as provider of information. She corrected spelling and grammar by specifically pointing to the problems and, in some cases, telling the students exactly what to do to fix those problems. For instance, in dealing with Team 1, Evelyn was unhappy with their answer and asked them listen to her read the question: “What effect does this decision on the bank?” Then she read their answer: “The bank could lose its money. You never know it could be *thief* money?” She continued saying, “A thief money – does that make sense? A thief money? What about ‘the money could have been stolen?’” (Observation, 1/7/99).

The implementation of proximal goals had the surprising outcome of raising the amount and level of questioning in this scenario. It seemed that this increase in questioning tied into Ms. Murray’s goal of developing understanding. It was certainly related to her conception that questions and understanding are important in learning. For example, in an earlier interview, Ms. Murray commented that in order

⁴ The program asks the students to define the problem, state what the affect of their decision is on the bank, themselves, and their customer, and to define the rule of good banking they have learned for the scenario.

to determine whether or not learning was happening in an ideal environment a facilitator needs to "...actually [listen] to the questions [the students] are asking so you can know that they really understand the topic or they are asking for more information so that they can understand it better. Maybe when they are writing, after you have read it, you can tell that they are understanding." (Interview, 12/2/98).

Further, implementing proximal goals seemed to enhance Ms. Murray's reflecting about her students. In our follow-up interview, she reflected on the day's progress saying,

Basically, I think one of the problems – it's not a confusion – is that [the students] are not used to anyone setting goals for them. And, my question is 'do they understand what a goal is or not?' I mean I have thrown "goals" around. 'This is your goal...' 'Your goal is that we have to do such and such by such and such time.' But, today since they were in like at a close proximity to really work on this particular goal, it seems as though they were unable, to do it. Or the fact that the type of goal they were trying to accomplish – like writing for understanding – it seems as though they aren't used to that so there is some difficulty there. (Interview, 1/7/99)

This comment indicated that Ms. Murray was reflecting back on the day's class at a greater depth than before. The proximal goals had influenced her teaching and her reflection for one day.

In this initial attempt at using proximal goals, Evelyn's goal-setting was a little rocky. After all, understanding, writing well, and taking notes are all

complicated activities that could have easily been broken into smaller component parts themselves. In an effort to support her in refining her goals, I tried to help Evelyn think about smaller goals. I asked her to consider the difficulties that the students might have in developing the skills of reading and writing. Then, I asked her to explore how the goals related to *The Chelsea Bank* work that her students were engaged in. When she explored the issue of developing the skills, Ms. Murray was able to identify that part of the students' problems probably came from them not reading and really comprehending. She then went a step further, suggesting that having the students summarize might help (Interview, 1/21/99).

Pitfalls of Early Proximal Goal Implementation

While the initial implementation of proximal goals had been very good, there were some problems appearing with their implementation as well. These problems were rooted in the particular approach Ms. Murray used in the classroom. For instance, Ms. Murray was, in a way, becoming the students' extrinsic motivator. She spent a lot of time and energy explaining to them that they needed to pay attention to what they read because of the test they would have. She provided them with stated goals and felt that was a motivating force to keep them on task (Interview, 1/7/99). She also thought a lot about how to get the students excited –

worrying that they were losing interest in *The Chelsea Bank* (Interview, 1/21/99).

While extrinsic motivation was certainly important and many of the things she was doing were working toward other goals, Ms. Murray's attempt at keeping excitement high was, in some ways, working against her. The students were likely becoming dependent on her as their motivation rather than taking charge of their own efforts (Bandura & Schunk, 1981).

By this point in our work, it also seemed that Ms. Murray had become a conscience for the students – doing their self-monitoring for them. For instance, it was not unusual to hear her tell the students, “The scenario today was complicated because you did not understand. You didn't read the manual and understand what the words meant” (Observation, 1/21/99). In another instance, she acts as their conscience by trying to make sure they do the work they need to do in order to develop understanding. She said, “They like to plagiarize – just take everything that they see and write it. And, for them to really have an understanding of how to read and comprehend, they have to be able to summarize whole statement so that they can really understand what is going on” (Interview, 1/7/99). While she has good points, she had not yet allowed the learners to own their own process, instead focusing on fixing their problems for them.

Finally, in implementing proximal goals, we ran into a major hurdle – the standardized test. In fact the emphasis of the reading comprehension and math tests was so strong that in my final interview with her, Evelyn specifically mentioned that one of the ways in which I had been a positive influence on her was, “in keeping me on my toes and in keeping the cooperative learning alive – other than that the type of teaching I have to do to get the kids ready for their exam in June, I would just forget about cooperative learning and just go straight for the books and the board and the chalk – which is not the thing that I like to do at all” (Interview, 2/25/99). From this it was apparent that the test really does impact everything in Ms. Murray’s classroom.

The test was intrusive in several ways. First, it tore Ms. Murray away from real goals. When students did not understand or seem motivated, she would tell them about the test. For instance, when students could not answer a question, she told them:

In the eighth grade. You have to take a test. When you get to ninth grade, you also have to take an English proficiency test and that test is not only what you learned today, it’s thing that you learned a long time ago. Like poetry that you learned a long time ago. Passages from something you learned a while ago. You have to be able to recall some of this information to be able to answer these questions. And this is not long ago. This is like a month or two months ago. Hence the reason why we have to do some note taking.
(Observation, 1/7/99)

On January 21, the students did not follow her instructions for an activity, so Evelyn announced, “You will have a listening skills test in June – today you did not show your ability.” (Observation, 1/21/98). Evelyn also told the students that the test was the reason they must write clearly, listen carefully, take notes, and other such activities (Observation, 1/6/99; Observation, 1/21/99). While the test had surfaced before Christmas, it really became the center of large portions of their activities starting in January. In becoming this focus, it took away from other potential goal-setting efforts in the class.

Perhaps it was because of the test that I was only able to see Evelyn really try proximal goals on January 7, 1999. While she liked them and found them helpful (Interview, 1/7/99), she chose not to focus on proximal goals again. The irony of this decision was that on January 7, Ms. Murray had clearly outlined what was expected of the students, providing a focus to the class that had previously been missing. On January 21, however, the outside observer noted that Ms. Murray came across as not being very goal-oriented and not clearly stating her goals for her students (Duffy Debriefing, 1/21/99). This did not mean that she was failing to use goals at all, rather she had goals in mind, but did not share them in any way with the class. In her interview she suggested that she had intended to have the students become more self-monitoring as well as raise their awareness about the workplace (Interview, 1/21/99).

Proximal Goals in the Collegial Group

Because I had not been totally satisfied with the implementation of proximal goals to this point and because I wanted to formalize the approach I had been building to through interviews with Evelyn and Therese, I decided to try out proximal goals in a group setting. To this end, I developed a set of questions to guide our discussion:

- What is your goal? Why?
 - What does it mean to achieve this goal?
 - What does it look like when it's happening?
 - What does meeting the goal involve?
- Why don't the students do it already?
 - Can't? Why?
 - Won't? Why?
- What kinds of things might help get the students to the goal?
 - Teacher does / Student does
 - What are some milestones in the process?
 - What would the steps or milestones look like?

With Evelyn, my concerns had been over the complexity of the goals she had set on 1/7/99. I wanted to find a way to help her focus on smaller and, perhaps, fewer goals.

Fortunately, through the natural evolution of the conversation, the three teachers present, Mr. Crane, Mr. Murray, and Ms. Collins, identified an area they were all struggling with in their classrooms – promoting reading for understanding (Collegial Group Meeting, 1/21/99). Once they had highlighted this goal, I took

control of the conversation and started working our way through the questions outlined above.

As we worked our way through the questions, the goal was refined as were the approaches the teachers suggested. They offered amazing insight into the problem and possible causes of the problem. For instance, they refined the goal to focus on taking notes to use later. They offered that, they believed, a major part of the problem was that the students were used to the vocabulary word model of learning. They get the words out of context. Then they have an assignment to look them up and write sentences with them. Then they get tested on spelling them. They are not used to getting a list of words or a list of questions and going into resources to search for answers. It's a patterned behavior that needs to be dealt with (Collegial Group Meeting, 1/21/99).

The most interesting question in this process proved to be “What kinds of things might help get students to the goal?” When we looked at what the teacher can do, Therese sounded shocked and said, “Besides providing questions?” Obviously, these questions provided a new way to look at problems. The teachers were able to leave the group meeting with a possible set of steps for improving their students’ reading – and the model they generated belonged to the three of them (Collegial Group Observation, 1/21/99; Journal, 1/21/99; E-mail, 1/21/99).

In an effort to allow the teachers to retain as much control over this process as possible, I only asked the questions and wrote the answers on the board. When all three teachers were excited by a suggestion, I would point it out and let them choose whether or not to focus on it. Through this process, the teachers were able to generate a series of steps for building the comprehension skills they were seeking to develop.

After the success of this collegial group meeting, I prepared the questions in a handout format and provided each teacher with a copy of them (Appendix F). They were only slightly altered from the approach we had used in the group meeting.

Proximal Goals in Phase 3

Proximal goals in the third phase were a strange mixture. On the one hand, Ms. Murray reported that she did not have time to work on developing proximal goals because of changes in scheduling (Interview, 2/4/99). This disappointing statement indicated that Ms. Murray was viewing the goals as an add-on for her already hectic planning rather than a fundamental part of the way she thought about her class. However, in my observations, I found an ever-increasing emphasis on goals in Ms. Murray's approach to her students. First, she spent a lot more time emphasizing goals for her students. It was not uncommon for her to repeat what she

expected numerous times throughout the class periods. For instance, in one observation, she told the students to ‘read the details,’ then she read through questions with them to determine which were pertinent. Then she reminded the class, again, to read the details (Observation, 2/25/99). Similarly, on 2/4/99 class began with her writing on the board, “Objective: Identifying Details” (Observation, 2/4/99). She then told the class, “The objective today is to identify details – in the scenarios. There is always something going on and you need to formulate and understand what’s going on. I don’t want you rushing.” (Observation, 2/4/99). This simple instruction was certainly a kind of proximal goal. After all, it was an achievable goal and it built into other things that Ms. Murray had told the students they needed to do, such as writing well (Observation, 1/21/99).

She also did more to emphasize the goals that she had for the students in the way she structured their work. For instance, when the students were promoted to customer service representatives, Ms. Murray made the students stop and really read all the resources on their desk. In fact, she would not let them work the next problem until they had really examined their new office (Observation, 2/4/99). This structuring strongly emphasized the goal she had for them of paying more attention to details.

Finally, she became more goal-centered in our interviews as well. She was not only able to talk about what the students had done but the next logical step that they would be taking (Interview, 2/4/99). For instance, in one of our final interviews, I took Ms. Murray through the proximal goal development process again

Chandra: “What do you think you would like to see improved over what they did today?”

Evelyn: “What I would like to see improved basically is a way – after they left the scenario itself, for them to come back as a group on their own now and instead of me always having the questions to ask, they can now sit down in a group together and discuss and raise their hands and say, ‘Ms. Murray, I have a question about such and such.’ So, they are now asking the questions to get some assistance.”

Chandra: “So, the next step that you want them to go to would be developing their own questions?”

Evelyn: “Yes, developing their own questions, because I think that’s also important – to start developing their own questions...The kids I have now, it’s something you really have to pull out of them and you have to work with them. So, I would like to see that happen.

Chandra: “What skills do you think they need to develop to be able to do that? Or skills, I mean, it might be more than – or what’s going on? You said the kids at a higher level can do it – what’s going on?”

Evelyn: “I think some of the skills I think – being able to formulate their thoughts. Maybe choice of words. They don’t know where to use it, when to use it, how it fits into a question. Basically those are the only two skills I can come up with that they need and maybe they do not have. Because they speak all the time, but they have never had the questioning skill to ask questions on a topic. You know, they will ask question, ‘How do you do that?’ You know, very – ‘This is the way we do this.’ But to look at something and say let me look at this passage and pull a question out of it, they are not

used to doing that. So, I think that maybe looking at the scenario, they'll be able to focus some type of question and maybe the question will not be one of the better questions, but the more they do it, they'll get at that perfection where they can create questions to have people really thinking and focusing all that way." (Interview, 2/4/99)

While having students develop their own questions is a complex skill, it did naturally follow from "paying attention to details." Further, Ms. Murray was able to use reflection to identify some of the difficulties her students might have with this new goal. This interaction was strong evidence that, even though Evelyn felt she was not using proximal goals, she did adopt the notion of proximal goals and they had seemingly worked their way into her practice.

Outside Resources

The support materials outlined by the framework for professional development consisted of several resources compiled and put in a large binder to make materials immediately accessible to teachers. For ease of use, I included an indexing system in the binder and attempted to group the materials by topic: cooperative learning, learning, questioning, technology integration, building constructivist learning environments, etc. My original plan was to add resources to the binder regularly. To this end, I left blank spaces in the index to allow the binder

to grow. However, in reality I was only able to add a limited number of pieces – all dealing with cooperative learning – during the course of the study.

I gave Evelyn her copy of the notebook during Phase 1 (Interview, 11/12/98). It was greeted with a look that expressed, ‘Not another thing.’ (Interview, 11/12/98; Kirkley Debrief, 11/13/98). This was not surprising considering that Ms. Murray always felt like she was doing too much and considering that she generally did not do much professional reading (Interview, 10/29/98). She simply set the notebook aside.

In Phase 2, I specifically asked the teachers in the collegial group to read Chuska’s *Improving Classroom Questions* which was a book included in their notebook of materials (Collegial Group Meeting, 1/7/99). By the meeting on 1/21/99, only Therese had read the book. However, she was excited by it and discussed some of the suggestions the book made. Through her discussion, Ms. Murray and Mr. Crane started to become more interested in the book, as well. While they had not read the book, they did bring it with them, so they were able to look at the various kinds of questions as Therese pointed them out. This activity opened up a dialogue about problems the teachers were having in their own classrooms (Collegial Group Meeting, 1/21/99).

By the following group meeting, Ms. Murray had at least thoroughly examined the book and read certain parts. She commented that:

What I've really zeroed in on is the questioning because that was important to me since I have done a lot of questioning before I wanted to see what was different – what I have done in the past to what's in the book. Which I did get some information from there and as I said, also as a mentor I would like to use some of it to give it to the people who I'm mentoring. But, my real – my whole stress was on the questions. I really flipped through a lot to get to the questions because that was really my interest in the book. Not that I'm not going to read it, but at this point – my problem is that I viewed one of my intern's tape yesterday and I was really distressed – I must say – and all I was really going for in the book at this point was the questions. What can I do to help? And I saw some questions and I really underlined that I want to do. (Interview, 2/4/99)

She also emphasized that, to her, much of what was in the book was already familiar because she had been taught to teach using questions (Interview, 2/4/99).

While Ms. Murray may have known the questioning strategies and ideas before she read the book, the book's ideas impacted her behavior more than any other single intervention. The first class period after she had thoroughly examined the book, Ms. Murray was the least directive of all the days I observed. She still insisted on maintaining control over the students such as releasing them to their computers one group at a time, but allowed students to solve problems that she had previously not allowed students to figure out:

Evelyn watched group two as they struggled to count money – they were just grabbing and dragging. She glanced over at group three for a moment and talked to team three about an answer they have typed. She glanced over at group one. Then back to group two – who finally finds the tally sheet and is suddenly more organized in their counting (Observation, 2/4/99)

Further, Ms. Murray allowed herself to relax and have fun teaching. For instance, she stopped to talk to a member of one team and both she and the team member started to laugh about something going on (Observation, 2/4/99).

During this same class period, Ms. Murray overtly tied her change in teaching to the Chuska book by adopting an approach she had read in the book. Rather than telling the students what to do or questioning them during the scenarios, she wrote down questions to discuss at the end of the period. While this did not eliminate all interactions, it dramatically reduced the number of interactions she had with the students – especially the directive interactions that had plagued her earlier work. More importantly, this strategy tied the debriefing discussion more tightly to the work the students had done that day. Because of this, the debriefing was quite focused as were the few interactions Evelyn had with her students during the simulation (Observation, 2/4/99). For instance, in one of the few interactions during the scenario, Ms. Murray approached a team and asked,

Evelyn: “Before you made the decision did you go to the manual?”

Students: “Yes”

Student (indicating herself and another student): “We said C. He said B.”

Evelyn: “What do you think you could have done?”

Student: “Could we have gone back to the manual?”

[The student seemed sincere in asking this question]

Evelyn: “Yes. You could have.”

Evelyn elaborated – mentioning once again that they were looking for details.

She said, “With 3 of you, if someone disagrees, you need to go back and see what everything said.” (Observation, 2/4/99)

This was a far less directive interaction than I was used to seeing with Ms. Murray.

She focused on helping the team understand the value of looking at details while

supporting them in becoming better at cooperative problem solving. In this way, she

not only allowed students more ownership, but shifted their learning from being

doing based to being *understanding* based.

In the final debriefing for the day, Ms. Murray focused on what happened in the scenarios by asking the questions she had written down as she observed the class working. She also pushed the students to explain why they chose a particular answer.

Evelyn: “What happened when Mickey Mike was in the bank?”

[Several hands go up and there is no extra noise. She calls a student]

Tyler: “He was followed by a crowd of people. He gave us a bribe – money and a picture.”

Evelyn: “What happened in the whole scenario? What decision did you make and why?”

Tyler: “We decided not to rush – to slowly count. Then we checked accounts and we checked the money to see if it was correct.”

Evelyn: “What decision did you make?”

Tyler: “We pushed back the \$100 and the picture and told him we would try to go as fast as we could. He said he admired our work and we passed.”

Evelyn: “I noticed when people were working with Mickey Mike, there was money all over the screen. Earlier we had a scenario with money – what did we do?”

[She calls on a student]

Kani: “Put the 20’s with the 20’s and the 10’s with the 10’s.”

Evelyn: “We call that putting money in set denominations. That’s one of the ways to do it. Group 10 – you were not writing. Group 5 – you had money all over – how could you count? There was no tallying of the money.” (Observation, 2/4/99)

This represented a major step toward promoting critical thinking and developing understanding. She allowed the students to explain their thinking and, although she did it in a way that did not allow the students to correct their behavior, she provided a good strategy for future use in counting money. Of course, there was also still room for further evolution. For example, the few sentences revealed the old approach coming back. It was more punitive and oriented toward “doing.” While this allowed her to give her students feedback, it prevented learning through corrective action. Interestingly, in our interview after class, Ms. Murray indicated that she felt that telling the students to pay attention to details, the goal for the day, was responsible for the students’ increased interest in the discussion (Interview, 2/4/99). However, in evaluating the data, I found that this follow-up provided the students with the most opportunity to answer the questions based on things that came from the scenario and not some other experience unrelated to their work on the computers.

Finally, the Chuska book's adoption by Evelyn was particularly important because of the way it happened. While Ms. Murray claimed that she would have read the book on her own without Ms. Collins' positive comments (Interview, 2/25/99), the fact was that it was the strong endorsement by another teacher that really inspired her to read it. Further, she was so excited by the book, that she copied parts of it to share with the teachers who she was mentoring – thus continuing the cycle of perpetuation by word-of-mouth. This leaves a question about how to successfully include materials in professional development efforts.

Collegial Group

The collegial group played an important part in my professional development efforts at Thacker. By sitting through the meetings and discussing them with Ms. Murray and Ms. Collins, it became apparent to me that a group of this kind should frame any professional development efforts within a school. This was because it offered a “safe” place for the discussion of ideas and a built-in resource for finding answers. Further, it served to redefine the lines between various levels of teachers.

The collegial group created as part of my work at Thacker met five times during my work, beginning in mid-December and meeting approximately every other week until the end of February. In addition to Ms. Murray and Ms. Collins, the group

also included two sixth-grade teachers who were team-teaching *The Community Clinic*, a simulation was designed for science, health education, math, and English classes (Classroom, 1998).

The two sixth-grade teachers were both using the simulation for the first time. Because of this, they were excluded from the more extensive professional development work, however, they were able to round out our group for our peer meetings. Mr. Crane, the sixth-grade science teacher was a first-year teacher with a background in microbiology. Like many others in the school, he held an emergency license and was in the process of earning his teaching license. Mr. Deveneau was finishing his first year of teaching after being a teaching assistant for eight years. He was the math teacher for the sixth graders in the Institute.

Throughout our five meetings, I wrestled with a number of issues as I watched the teachers slowly start defining what this group would be. Scheduling and organization were ongoing issues throughout my work. In the first two months of my work at the school, I was unable to set a time for the meeting because two of the teachers taught elsewhere after school, some of the teachers had pre-existing meetings or activities scheduled during their lunch periods, and they frequently forgot that we had discussed scheduling a meeting time. Because of the difficulties, I turned to Ms. Murray for help. She felt that the proper course of action was to have

Mr. Gabel call the first meeting. Even though I did not want the group to be brought together through coercive measures, using Mr. Gabel's plan seemed like the most likely way to actually bring the group together. Once the group was started, however, the teachers generally had no problem meeting during lunch on Thursdays. This proved to be a valuable lesson for professional development, no matter how important the collegial group seemed to me, and became to the teachers, it had to be jumpstarted by an outside force. Until it was clearly designated as an important thing by a person who held power, the teachers saw the meeting as another one of the many things they were faced with trying to fit into their already hectic schedules. Even when it was clearly scheduled, the teachers often showed up ten minutes late because of other responsibilities they had to deal with during their lunches. In addition to the lateness, one of the teachers, Mr. Deveneau, missed two of the five meetings completely.

Once we began meeting, the group began to take ownership over the meetings and used them as an outlet for getting ideas, sharing frustrations, and learning about new things. To me, it also seemed like the meetings became an avenue for the teachers to deepen their respect for each other through less formal interactions and discussion of a variety of topics. For instance, when we first began the group meetings, Ms. Murray tended to take the role of the mentor or leader. She

often offered how she did things in her own class when another member of the group expressed frustration. Further, she often took charge of the conversation leading it in the direction she wanted it to go. For example, in our first meeting, Ms. Murray took ownership over the conversation as she discussed the aspects of *The Community Clinic* that she did not care for (Observation, 12/10/98). In the second meeting, Ms. Murray quickly took over as the mentor any time one of the other three teachers mentioned a problem they were having (Observation, 12/10/98; Observation, 1/7/99). However, through our meetings, she had begun to back off this position of professional developer and participated as a peer during most of the meeting time. The day we worked through the outline for creating proximal goals proved to be an important turning point for her in this way. For the first time, she was an equal member of a team struggling through a problem together rather than the experienced teacher with answers to everyone's problems (Observation, 1/21/99). By the last meeting, in fact, Evelyn became engaged in learning from Mr. Crane and Ms. Collins as they discussed teaching genetics (Observation, 2/26/99). At the very least, the collegial group acted as an avenue to allow the teachers to work together in a way that they typically would not have. Each teacher had the opportunity to teach in the meetings and each had the opportunity to learn – thus, it was a safe environment. Further, the variety of experiences brought to the group by the teachers and myself

created an environment in which “resources” were prevalent in the form of experience as well as documents. Finally, Evelyn seemed to really evolve into a role of peer rather than mentor through these experiences.

By the end of my work with her, Evelyn reported that she felt the collegial group should continue because;

We can all learn from each other – we can all share things in our classrooms, how things affect us or affect the students, and one question – what can we do to help ourselves or help our students? And, unless we give them this type of peer group talking, sometimes you know, a teacher has a problem, doesn’t know what to do, and if they are in the peer group you can say, ‘You know I’m having problems with such and such’ and what can we do. I think it’s great and I think it should continue. (Interview, 2/25/99)

She added, however, that she felt the group was particularly important for less-experienced teachers. She explained that often they needed help, but did not ask in a more formal setting. She also explained that she felt one of the major benefits of the collegial group was its ability to explore teaching methods outside of “chalk and talk.” (Interview, 2/25/99).

Evelyn’s Evolution

By the end of our time together, Evelyn had showed some change in her beliefs and actions about teaching and learning. As predicted at the outset of this research, much of the change was in “baby steps.” Most important in this evolution

were Evelyn's attempts to put the students in control of their own learning. Also important was Ms. Murray's shift in thinking about how her students were approaching problems.

Student Ownership

Starting with the second phase of this study, Ms. Murray began making efforts to allow her students to take more control of their own learning – suggesting a major shift in her thoughts about teaching. She released this control several ways. For instance, in a minor example of turning ownership over to the students, Evelyn told a student that it was his job to decide whether or not the check he was working with needed to have a signature on it (Observation, 1/7/99). In another instance, she used a real-world tie-in to help a group understand that they needed to take charge of their activities. When they asked her what to do because one member was absent, Ms. Murray explained:

Evelyn: “This is our business – it’s an extremely small business with only three people. The clerk calls in sick – who makes the decision about who does the job?”

Student: “Manager”

Evelyn: “The manager makes the decision. Why did you call me over?”
(Observation, 1/21/98)

Here, she has attempted to help the students understand why they should take ownership over solving these problems and she has walked them through solving it. In the beginning, Ms. Murray would have been more likely to tell them what to do.

By the third phase, Ms. Murray was taking larger steps toward turning control over to the learners. One day she asked two groups of students to act out skits they had been preparing as part of their work with *Chelsea*. In the second skit, the students acted out the Mickey Mike scenario. In the role play, a rich rock star came into the bank and offered the teller a tip to count the money quickly so that the star can leave before being recognized. Ms. Murray started the discussion of this role play by asking what happened and if anything went wrong. Several students raised their hands. Ms. Murray told the students that they needed to ask the performers some questions and turned the conversation over to them:

A student asked, “You didn’t count the money?”

The teller replied that he counted it fast, so another student asks, “Why did you count the money fast?”

Teller: “She gave me \$100 tip, so I counted it fast.”

The conversation progressed with the students asking the teller more and more questions. When asked another question, teller says he took the money because he wanted it. Ms. Murray asked the students if there are other questions. A student volunteers, “If you counted it fast, how do you know that the money is correct?”

Teller: “I didn’t. I just counted the money quick and took the hundred dollar bill.”

After another question, Evelyn said, “Let’s get some real questions here.

Something happened here today....Let’s get into this. Something

happened here today...I want it loud in here. I want a really good question.”

Student: “Are you afraid you’ll get caught and this will end your career?”

Teller: “No”

Then another student asked if the teller was afraid of being fined or arrested for taking the bribe. The teller says that he is not afraid. Then Ms. Murray chimed in asking, “What are the rules of good banking?”

The student responded that you don’t take bribes.

Evelyn asked the group to re-enact the scene to show what should have happened. “In this scene the teller took a bribe. Can a teller take a bribe from a customer?”

Students in unison: “No” (Observation, 2/25/99)

As with some of her earlier interactions, this was an uneven one. On the one hand, Ms. Murray was more successful than ever before at relinquishing control to her students. However, when she did add questions, they tended to be closed-ended questions with very definite “correct” answers (Yoshida Observation, 2/25/99).

By the end of our work together, Ms. Murray had not only attempted to turn some control of learning over to her students, but had also seemingly shifted her beliefs in that direction as well. In my final interview with her, Evelyn reported that when learning was occurring, the students should be talking to each other, working with each other, asking the teacher questions, and helping each other (Interview, 2/24/99). While this definition still required the teacher to have all the answers, it also acknowledged that students could learn from each other as well as on their own. This was a radical departure from our initial work.

Learning

In the area of evolving her understanding about the students and learning, Ms. Murray presented a new view of learning. She suggested that learning was a facilitated, ongoing process that depended on students understanding what was being asked of them (Interview, 2/24/99). While Ms. Murray had before attributed lack of student performance to laziness, she now speculated that students who were not doing their work were, perhaps, not understanding. She said that as a facilitator, she needed to move around the room and, when she saw a student who was not working, ask,

Why are you at this point when everyone else is at that point?
And you'll find that maybe although the child is hearing, the child is not really listening and has no clue what to do and you as facilitator, work and help out. (Interview, 2/24/99)

This shift seemed significant because it showed an evolution away from the *doing* mentality she started with and an evolution toward seeking to understand how the students were thinking. Further, it showed that Ms. Murray was beginning to acknowledge that elements other than behavior may impact student performance. At this point, Ms. Murray was no longer assuming problems or attributing them to laziness. Instead, she was in search of *understanding* – wanting to find out what the problem was for the student in order to facilitate his or her learning.

This shift was also echoed in her scores on the “Teacher Belief Survey” (McCombs & Whisler, 1997). This survey was filled out two times by Ms. Murray – once at the beginning of our study and once at the end. It focused specifically on teachers learner-centered and non-learner-centered beliefs about learning, teaching, and learners.

In Table 5.1, data is presented indicating how Ms. Murray scored initially and how she scored at the end of this study. Table 5.1 also presents information about how learner-centered and non-learner-centered teachers who used this battery scored. As shown in the table, Ms. Murray did move into the range of a learner-centered teacher in her non-learner-centered beliefs about learning. This means that she was beginning to move in a direction that viewed all students as capable of learning regardless of their external situations. However, she moved away from being learner-centered in her beliefs about teaching. This means that she felt it was her responsibility to make sure students succeeded in her classroom. Further, it indicated that she was still tied to a model of teaching in which the teacher is separated from the students – taking on an almost non-human persona. In short, this instrument indicated that Ms. Murray felt that she needed to take ownership over the learning environment in every way.

It should be noted however, that while the survey captured one view of her, a view of a teacher who was moving further away from a learner-centered teaching approach, my observations documented that Ms. Murray’s teaching was tending to move in a more learner-centered direction. She was allowing students more time to answer questions, she was focusing more on higher order thinking, and she seemed less domineering in her approach.

Table 5.1: Evelyn’s results on the Teacher Belief Survey

	Learner-Centered Beliefs about Learners, Learning and Teaching	Non-Learner-Centered Beliefs about Learners	Non-Learner-Centered Beliefs about Learning and Teaching
Learner-Centered Teacher	≥ 3.4 (S.D.=.4)	< 2.0 (S.D>>=.56)	< 2.0 (S.D.=.49)
Non-Learner-Centered Teacher	< 2.8	> 2.4	> 2.4
Evelyn - Initial	3.14	2.33	3.08
Evelyn – Final	3.14	1.78	3.17

Video Analysis

One other data source that examine Ms. Murray’s change over time was the data acquired from the video checklist. The data were collected on two separate days. The first day (1/7/99) was the day that Ms. Murray implemented proximal goals. The second day, 2/25/99, was my final day of working with Ms. Murray. The videos

were each analyzed by two researchers (Orrill and Kirkley) using a checklist that considered the kind of interactions the teacher was having with the students, the tone of the interaction, and whether or not critical thinking was being promoted. Only those interactions that were instructionally relevant were considered.

Table 5.3: Checklist analysis of teacher-student interactions in The Chelsea Bank

	1/7/99	2/25/99
Amount of time spent on scenario	26 minutes	47 minutes ⁵
# of relevant interactions	16	22
# relevant interactions that promoted critical thinking	10 (63%)	13 (59%)
# relevant interactions that promoted higher-order critical thinking	7 (44%)	8 (36%)

The videos showed that overall, there was little difference over the two-month span. Ms. Murray did tend to promote critical thinking slightly more the day she focused on proximal goals. That day of her 16 relevant interactions, 10 (63%) promoted critical thinking in any way and seven of the 16 (44%) promoted critical thinking at a higher level than simply monitoring for understanding (Table 5.3). This was compared to only 36% (8 of 22) promoting higher levels of critical thinking on

2/25/99. Overall, these data indicate that not much change occurred, but that proximal goals may have helped to keep Ms. Murray focused in her questioning.

On 1/7/99, Ms. Murray asked many questions about which account students were working on rather than how they were determining answers. For example, in the following example of a relevant interaction that promoted critical thinking, but not higher-order critical thinking, Evelyn approached a team and asked:

Evelyn: “Okay, which account are you working on?”

Student: “Mikey’s.”

Evelyn: “Who?”

Student: “Mikey Mike.”

The students in the group start talking to Evelyn, she tells them that she can’t hear them and to let the person at the computer talk.

Student: “He wanted to deposit \$970. And we checked the amount to see if it’s right on that tally – on the paper.”

Evelyn: “He wants to deposit?”

Student: “Yeah.”

Evelyn: “Do you have to check – okay, so you check your deposit slip – okay? And what else are you checking for?”

Student: “To see if what we’re doing is right.”

Evelyn: “Okay.” (Video observation, 1/7/99)

Clearly, in this example, Ms. Murray was not pushing student thinking. However, she did verify that the students were paying attention to what they were supposed to be doing and that they were using some sort of process. In this way, she was

⁵ On 2/25/99, Ms. Murray had the students work through two scenarios instead of one.

promoting some critical thinking, but not high-level activities such as reflection and metacognition or promoting inquiry.

When she did promote critical thinking, Evelyn pushed beyond simply reading the manual in the simulation. For example, in the following instance, she asks students to think about how they could cash a check. They had not been presented with a situation in the simulation in which they needed to ask a person to sign a check in front of them or in which they had to verify a form of identification.

Evelyn turned around and stood at the next group. She began by asking them what group they are in. Then follows with which account they are working on

Student: Jane Smiley

Evelyn: "What's happening?"

Student: "She brought checks to deposit."

Student: "All of them have signatures on them except this one."

Evelyn: "Uh huh. So what are you going to do with that one?"

Student: "We looked in the manual and the manual said to make sure that all of the signatures are correct and have the account number."

Evelyn: "So, since this check has no signature – and you have checked the front of the check – make sure the check, make sure it's going to her. Do you think you can give her that check and ask her to sign it in front of you?"

Student: "Yeah."

Evelyn: "Okay. If she signed that check in front of you, what do you need to verify the person?"

Student: "An ID card."

Evelyn: "An ID card. Is she depositing or is she cashing them?"

Student: "Depositing."

Evelyn: "Okay." (Video observation, 1/7/99)

As shown in the above example, even her in the interactions where Ms. Murray was promoting higher level critical thinking, the effort was still falling short of ideal.

However, she was asking the students to think beyond what the simulation had provided for them and asked them to project what their next move might be.

By the second video, Ms. Murray's promotion of higher-order critical thinking had improved in the instances she used it. For example, she asked questions about the pertinence of information (Video observation, 2/25/99). This level of information analysis had not been present in previous observations.

Conclusions

Overall, Evelyn seemed to change in both her practice and her beliefs during the four months I worked with her. As predicted at the outset, many of these changes were very small. Further, some changes were quite inconsistent. However, the ways Evelyn changed – and did not change – helped to inform my thinking about the professional development framework. Further, the changes that were made seemed to please Evelyn. This was important because her pride in her accomplishments could serve as a motivator for continuing with the change effort. In fact, she reported that she was not only proud of the fact that she had become more facilitative, but intended to continue using her new approaches (Interview, 2/25/99).

My work with Evelyn helped evolve the framework of professional development that was developed at the outset of this research. It informed each of the

five aspects (reflection, proximal goals, facilitation, collegial group, and resources) as well as offering insight about how professional development frameworks should be used. Further, working with Evelyn heightened my awareness of the role of observer effects – both from the research and as part of the professional development.

Special Consideration of Observer Effect in This Case

In this case study, there were observer effects unique to Evelyn’s reaction to my presence that factored into my thinking about professional development. In some cases, such as when she claimed that “being watched” was a positive influence in making change (Written Reflection, 12/17/98), the observer effects did not impact the findings. This was because the facilitator’s role involved this same watching aspect – therefore, the research itself was not causing different behavior than participating in this form of professional development would have caused her to behave.

However, other indicators suggested that she made certain efforts simply because she felt they were what I wanted. For example, in my final interview with Evelyn, she discussed her approach to *Chelsea* and my work with her saying:

It made me look at myself, you know, if you were not here, I would have done Chelsea Bank, but not the way I did it. I

would have done it and maybe go around and help around, but it made me put myself aside more as a facilitator to look in and see what they are doing and I did a lot of that because I basically think that that may be some of the things that you were looking for. So, it allowed me to know that, okay you don't have to be telling the kids what to do all the time, you can sit back, you can look on and see what they are doing, and walk around. So, that really gave me that incentive to do things like that. (Interview, 2/25/99)

This showed that she had altered her normal approach in an effort to be the kind of teacher she felt I wanted her to be. While this may be something that would have happened separate from the research, it indicates that the changes she made were likely not to last because she did not own them.

Further, she commented on both of the videotapes that she was being taped (Observation, 1/7/99; Observation, 2/25/99). This indicated that she was very aware of the presence of an outsider (the camera) and, likely, altered her behavior because of it.

In an effort to control for observer effects, I used a variety of strategies. These included focusing the reflection on her goals rather than my own, allowing Evelyn's development to move in a direction she designated, and not offering preplanned ideas and lessons as Evelyn had suggested in her written reflection. It is, of course, impossible to know how much this professional development effort was affected by these effects. However, this is an area worth further consideration.

Flexible, Individualized Approach

Through my work with Ms. Murray, I learned that my approach to professional development needed to be flexible to allow each teacher to feel comfortable moving forward. Just with the two teachers in this study, the implementation of the framework was vastly different. The primary implication of this on the framework was the retention of the one-on-one relationship between the teacher and professional developer for reflection and feedback.

Further, this need for flexibility reinforces the notion that teachers need individual development— a workshop approach would not have worked in this case. For instance, Evelyn needed to work on relinquishing control in her classroom in order to become more facilitative. She would not have been able to do this in a workshop. This was a change she could only make in her classroom, by herself.

Reflection

In my work with Evelyn, reflection played an integral part in helping her focus on what to change and in considering how things had changed. Reflection seemed, in Evelyn's case, to highlight dissonance between different sets of beliefs that she held. Further, it allowed her to work through these without any interference from me. As a tool in the professional development framework, reflection stood out as the foundation for other changes. It was the element that allowed the most learner-

control in that Evelyn could look at her work with a critical eye and determine which pieces she wanted to work with. It was also the tool that allowed me the most meaningful influence. I could ask questions about any topic and work with Ms. Murray to really examine her beliefs on that topic. If it had chosen to talk about facilitation, for example, instead of asking her to reflect on her facilitation, the outcome would have been entirely different. Further, the development of stronger reflective skills seemed to allow Evelyn to go deeper into her own approaches in order to improve.

Proximal Goals

With Ms. Murray, the proximal goals implementation and discussion provided valuable information for thinking about professional development. First, the experience showed that proximal goals needed to be introduced in an individualized way. I chose my approach for introducing proximal goals to Ms. Murray based on my understanding of her personality and her role within the school. Because she was the professional development person for the school, Ms. Murray was not accustomed passive learning. She was accustomed to looking at strategies, assessing their value, and trying out and disseminating those she felt were worthwhile (e.g., Interview, 2/4/99). Therefore, I presented the goals to her as a tool

of this kind. I attempted to allow her to customize her understanding of the goals and then reinforced her understanding through reflective questioning (e.g., Interview, 1/7/99). This approach was moderately successful, but seemed unsatisfactory overall because of the threat of misinterpretation or misuse – for example, using goals that were too complex or implementing too many at a time. Therefore, I followed up on my initial introduction with our work to develop a set of proximal goals in the collegial group. This follow-up seemed to help Evelyn, and the other teachers, think through the development of goals in a more structured and effective way. Therefore, it seemed that proximal goals should be introduced to individual teachers using the questions developed for the collegial group and followed-up on during collegial group meetings or reflective sessions.

Another area informed by my work with Ms. Murray related to proximal goals was the need to find a way to integrate them into the teacher's everyday approach. Because she always viewed them as an add-on that she did not have time for, Evelyn never fully realized that she had adopted them and, likely, did not use them as successfully as she might have otherwise

Resources

Another aspect of the framework that my work with Ms. Murray helped inform was the use of resources as support materials. Ms. Murray initially did not use the resource book much. In fact, she admitted that, when asked to read the Chuska (1995) book she had simply forgotten about it (Interview, 2/25/99). In fact, she said that it was hearing Ms. Collins talk about the book that sparked her interest and finally got her to read the book (Interview, 2/25/99). Once she read it, however, she found a lot of information that she was able to use with her interns (Interview, 2/4/99) and it had a positive effect on the way she approached her class (Observation, 2/4/99). So, the lesson for professional development that I found in all of this is that the resources can have a profound impact on teaching and conversation if they are used. Further, the potential for successful use of the resources is partially dependent on helping teachers see relevance in what they are reading. In this case, if Ms. Collins had not offered a positive opinion of the book, it is likely that Ms. Murray would not have read it. So, there must be something to promote at least one person reading the materials.

The final implication for the use of professional development resources I took away from this experience with Ms. Murray involved the need for a more structured way of using the resources. While she did read the book, she only looked through the

other materials I had provided (Interview, 2/4/99). I think part of this had to do with time limitations, however, I think part of it had to do with there being too much information being presented in a way that was hard to sort through. Perhaps the articles would be better received if they were provided a few at a time or on an as-needed basis, the resources would have a greater impact.

One-on-One Support

Another area of learning relative to my evolving understanding of professional development was the importance of interaction. My interactions with Evelyn had a positive effect on her beliefs and her teaching (Interview, 2/25/99). I was able, through asking questions and relating observations to her, to help her look at her own teaching from a new perspective. This kind of relationship was vital to this professional development effort. By promoting her examination of her own teaching, I allowed Evelyn to shape her development and change in ways that were comfortable for her. As noted above, there was certainly an effect on her efforts because she wanted my study to be successful, however, most of the changes she made were her own. Other than asking her to read the Chuska book and introducing proximal goals to her, I did not directly ask Ms. Murray to change any aspect of her teaching. Further, I never directly told her what kinds of change I hoped to see. Yet,

the changes she made were in line with what I was looking for in this research. I think a large part of this success hinged on the reflective questions – helping the teacher explore her own feelings and beliefs and finding ways to make her visions for learning a reality in her teaching environment. To this extent, I believe that the one-on-one relationship is a vital part of the change process. I also believe it is vital that the professional developer really understands each teacher and to that end, it would still be necessary for the professional developer to be involved in some one-on-one work.

Collegial Group

The collegial group offered another important arena for change. I slowly saw Ms. Murray move from being the “mentor” – a role she was familiar with and had already taken on with each of the other teachers individually, to being more of a participant. In our last collegial group meeting, it was fascinating to watch Mr. Crane and Ms. Murray suddenly switch roles (Collegial Group Observation, 2/25/99).

Before this meeting, Ms. Murray had commented that she would like to see the peer group continue not only because she felt the “younger” teachers needed to be mentored but also because, “we can all learn from each other” (Interview, 2/25/99).

This was a major shift from her initial interview where she said that she felt basically

alone in the building as far as support for teaching went (Interview, 10/29/98). While the peer group still did not offer her support for her math teaching, Ms. Murray seemed to be starting to develop a feeling that the less experienced teachers offered something worth considering.