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ABSTRACT

The study described in this paper explored collaboration between elementary regular and special educators who were motivated by a schoolwide commitment to serve children with learning difficulties in the mainstream. All teachers at one school were invited to join in a collaborative problem solving format to handle student reading difficulties in which regular and special educators collaborated in analyzing each child's reading program. The process addressed patterns of reading performance, priorities, potential interventions, intervention selection, and timeliness. Over 6 months, data were collected from four sources: audiotaped collaborative problem solving meetings; taped semi-structured interviews with subjects; classroom observations; and records of students' reading graphs, documented teacher discussions, and intervention plans. Data were analyzed and four assertions developed: (1) teachers who promote academic improvement for all children are most likely to collaborate; (2) collaboration is likely to be ongoing and valued when regular educators take responsibility for the intervention; (3) teachers who can define the learning problem will attempt to solve the problem; and (4) collaboration is likely to continue when it helps maintain balance between needs of individuals and the whole class. Transcripts of collaborative meetings between regular and special education teachers, along with discussion and analysis, comprise most of the paper. (Contains 21 references.) (SM)

Collaboration among General and Special Educators: The Influence Teachers Exert on the Process

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Introduction

The Second Annual Holmes Group Meeting in Washington, D.C.(1988) expressed a commitment toward a unified system that accepts responsibility for the education of all students (Sapon-Shevin, 1990). This trend away from fragmented, categorical pullout programs entails shared responsibility among general, remedial and special education teachers for instructing and monitoring the progress of children with learning difficulties. Collaboration among general and specialist teachers could yield better analyses of problems, more and better solutions, and multiple perspectives from different areas of expertise. Researchers have studied collaboration by designing and describing the implementation of various collaboration models (Chalfont, Pysh & Moultrie, 1979; Jenkins, Peterson & Schrag, 1988), testing the efficacy of models on student outcomes (Fuchs, Fuchs, Bahr & Fernstrom, 1988; Pugach & Johnson, 1990; Wesson, 1990), and suggesting contexts which facilitate collaboration (Huberman, 1988; Little, 1982). However, even in schools with effective problem solving procedures and a culture that encourages collegiality, the degree of reliance upon collaboration differs from one pair of teachers to the next. This study explored collaboration through the experiences and beliefs of regular and special education teachers participating in collaborative problem solving.

The Collaborative Ethic

Phillips and McCullough (1990) point out that "despite . . . the current rhetoric regarding the importance of shared responsibility, the collaborative ethic remains inoperative in most school settings." (p.291) They define the central tenets of the collaborative ethic (citing the work of Curtis and Meyers, 1988; Idol, 1988; and Zins, 1988) as follows: (1) Joint responsibility for problems; (2) Joint accountability and recognition for problem resolution; (3) Belief that pooling talents and resources is mutually advantageous; (4) Belief that teacher or student problem resolution merits expenditure of time, energy and resources; (5) Belief that correlates of collaboration are important and desirable. (p.295) Responsibility and accountability for the education of specific children is central to any discussion of collaboration. Where pullout instruction assumes the regular classroom experience is insufficient for children with disabilities, mainstreaming assumes that regular classroom instruction is valuable, as the specialist's role shifts toward instructional facilitation--making the regular classroom instruction accessible to a wider range of students. Collaboration which improves the educational experience for children with disabilities may depend upon the teachers' view of their own roles, not just in collaborative problem solving, but ultimately in the school outcomes for the children in their care.

Research on the process factors of collaboration, such as specific formats, scheduling, training, and feedback (Chalfont, Pysh & Moultrie, 1979; Fuchs, Fuchs, Bahr & Mirkin, 1988; Pugach & Johnson, 1990; Wesson, 1990; Zins, 1988) rarely addresses teachers' beliefs about their roles in the learning outcomes for children. Research on the context factors of collaboration, Little's (1982) "prevailing patterns of approved and disapproved interactions" (p. 329) describes patterns--encompassing school structure, administrative support, behavioral norms, and time constraints--that affect teachers' attempts to collaborate because they form the larger context in which collaboration occurs (Huberman, 1988). A context which encourages collaboration, however, still does not insure an operative collaborative ethic.

Motivation to Collaborate

Little (1990) suggests that teachers are motivated to collaborate when teaching becomes easier or more effective because of collaboration. "To the extent that teachers find themselves truly dependent on one another to manage the tasks and reap the rewards of teaching, joint participation will be worth the investment of time and other resources." (p. 523) The rewards of teaching may be measured in improvement in the quality of solutions to educational problems, or in the range of teaching skills, methods, or materials. The rewards, however, may need to be balanced against the cost of collaboration, such as loss of privacy, planning time, or autonomy in the classroom. It is also possible that when collaborative efforts center around children with disabilities, the rewards may be more difficult to identify or assess.

The teachers in this research were motivated to collaborate by a schoolwide commitment to serve children with learning handicaps in the mainstream program, providing a potentially strong

source of influence on each others' educational practices. We attempted to control the context (by inviting all of the teachers within a single elementary school to participate), the process (by introducing one problem solving format for all the collaborative pairs), and the subject matter content (reading) to study the influence that teachers exert on collaboration.

Method

The setting

The collaborative problem solving meetings were nested within the broader context of an elementary school which is currently attempting to institute several recommendations from the Holmes Agenda by adopting an integrated service model to reduce pullout of children who previously received outside-of-class service in reading. The specialists (a special education teacher and a remediation teacher) and their assistants worked primarily in classrooms with individual children and small groups, but neither the regular classroom teacher nor the specialist necessarily viewed the overall picture of the child's daily reading activities and performance. Cooperative learning was adopted school wide to assist with integration and reduce tracking (by eliminating instruction in high, medium, low reading groups). The transition from pullout service to in-class service was abrupt and recent. For the six participating teachers in this research, the intellectual, social and emotional demands of teaching were changing.

The process of collaboration

Haight (1984) recommended that attention be given to the development of organizational structures (processes) that facilitate collegial deliberations regarding the needs of students. Because reading was the primary area for school reform in the year of this research, we developed a collaboration process (loosely based on Pugach & Johnson, 1990) for a child's regular classroom teacher and a specialist (special or remedial education teacher) to analyze the child's current reading program together. Specifically, the questions and steps addressed patterns of reading performance, priorities, potential interventions, selection of an intervention, and timelines for implementation, evaluation and follow up. Initially, we trained the two specialists (taking turns in the role of regular or specialist teacher) to collaboratively solve hypothetical educational problems. We incorporated their suggestions into the process used for this research. Next, the entire school staff reviewed and revised the process during a regularly scheduled faculty meeting. We reviewed the process again with each pair of collaborators prior to their first problem solving meeting.

Participants.

Two teachers in this school have traditionally worked with students who struggle with reading acquisition: the special education teacher and the remedial teacher. Although selection of children for the two programs differs (the special education teacher has only taught students who have documented learning handicaps and an IEP; the remedial teacher has worked with students who score in the bottom three stanines on standardized reading tests), the teaching strategies and techniques are similar. Because the children in both pull-out programs have been recently reintegrated for reading instruction, both teachers participated in this study.

From the ten general classroom teachers (all women) who participated in collaborative problem solving, we selected four teachers for more intense study. The selection was not random, rather, two were chosen from those paired with the special educator, and two with the remedial teacher. The general educators represented a range of grade levels (second through sixth), teaching experience (eight to twenty years), and longevity of collaboration (two through sixth months). Other criteria for selection included a teacher's willingness to be observed, interviewed, and tape recorded (Our request to tape record eliminated two potential participants.).

Data sources

Four sources of data were collected over the six months of this investigation: audiotaped collaborative problem solving meetings among general and specialist teachers, taped semi-structured interviews with teachers who took part in these meetings, classroom observations, and records which included children's reading graphs, documented teacher discussions, and plans for intervention on behalf of specific children. Each of these sources is described below.

Collaborative Problem Solving Meetings

Initially, we used a prompt--Curriculum Based Measurement (Deno, 1985)--to stimulate the occurrence of problem solving meetings. Twice each week, the lowest readers from each classroom sat at a computer and worked on a reading Maze task for two and one-half minutes (Fuchs, Fuchs & Maxwell, 1988). Their accuracy was recorded and graphed, and compared to optimal rates of progress (viewed on the graph as an aim line). Researchers alerted both teachers when a child's CBM graph indicated a slower than anticipated rate of reading gain, the teachers scheduled a meeting, and informed us of the date and time. A series of collaboration meetings among pairs of regular/specialist teachers occurred between January and June (averaging one per month), and most of the meetings were tape recorded and transcribed.[1] All meetings scheduled during February were observed by university personnel, who did not participate in the meetings, but answered questions about the process and the research. After the first month, some teacher pairs scheduled meetings without the prompting of the CBM graphs. These meetings usually occurred at the request of the regular classroom teachers.

Teacher Interviews

Solutions to the educational problems posed by children who read below the level of their peers may depend upon the structure of the regular classroom and of the school, particularly regarding what is possible, plausible or acceptable as an intervention strategy. Whether certain interventions are reasonable may depend on teacher's experiences using, hearing or reading about similar interventions, the availability of resources (such as adult or peer help, time or materials), teachers' attitudes toward the child with the reading difficulty and the teachers' understanding of what the reading problem entails. The interviews were intended to probe each teacher's perceptions of her own teaching role, the role of the other teacher in the pair, the children being assisted, and the kinds of strategies and accommodations currently in place for hard-to-teach children. We wanted to know how beneficial teachers thought this kind of collaboration was and how much faith they had in the derived interventions. Although we structured interview questions to elicit views, the last question was open-ended to allow teachers to raise issues otherwise overlooked.

Classroom Observations

We observed four to ten hours of reading instruction in each classroom, recording information about classroom organization, teaching activities, attention to children identified as low readers (by the regular teacher or specialists), and accommodations for particular children. These observations helped to test the match between the intervention as designed in the problem solving meeting and the intervention as it occurred in actual practice.

Records

All of the CBM graphs of student performance from January through May and protocols from meetings and follow-up discussions about the interventions proposed and implemented were collected, examined, and collated with transcribed meetings and classroom observations.

Our analyses suggested that teacher beliefs about malleability of the learning of children with disabilities and the roles each teacher assumed in their education figured prominently in the kind of collaboration which occurred. Following are descriptions of the collaboration among four of the teacher pairs.[2]

Four cases of Teacher Collaboration

Ms Tower (intermediate classroom teacher) and Ms James (special education)

Ms Tower, with eight years of teaching experience, is new to this school. She relied on the other intermediate teachers for help getting started in the reading curriculum in September, but established her own routines for monitoring the progress of her students, including regular fluency timings with all students and small alterations in routines for children who fail assignments. During her first collaborative problem solving meeting with Ms James, the special educator, she approaches the current problem with Luke, a student with a reading disability, head on.

> Luke reads 119 words per minute and self-corrects most of his own errors. I think he sounds fluent, but his comprehension isn't good. . .Here's his test scores from second quarter [she spreads his score sheets across the top of a large table where she sits with Ms James]. . .I am

probably more lenient with him when I grade. . .In a small group, Luke gets them laughing. . .He gets the others off task. . . Maybe he'd do better with just one partner. (T/A1)

She offers this suggestion tentatively because the adopted school-wide model for reading is cooperative learning , and she is uncertain how flexible the structure can be. The two teachers discuss how a pairing could be accomplished without disrupting the classroom structure of groups of four, and agree it is worth a try. Ms James writes on the intervention record: "Select a partner so that Luke has no fun." She glances at Ms Tower and grins. "All right?" (T/A2)[3]

The scripted list of questions lay before them on the table, but their meetings are not bound by the script. They take turns writing notes, and their comments range beyond descriptions of the child's behavior to their feelings and worries about his learning, their comments sometimes humorous, sometimes introspective. At a later meeting they discuss Mark, a child whose behavior affects reading.

Ms Tower: At school, I'm frustrated about [his lack of attention and unfinished work].
Ms James: Don't feel guilty--
Ms Tower: . . . Doesn't it seem crazy? Getting him to do anything--Most ideas just don't seem appropriate--
Ms James: Maybe you and I could come up with something. Like building a cave-
Ms Tower: (laughs) Yeah! How about a novel he could get into?
Ms James: An event he likes?
Ms Tower: With him, once in a while, he gets an assignment he thinks is neat. That's the only thing that seems to change his performance. I think you had something there when you mentioned The Cay- . . .
Ms James: He was as fluent as I've heard him read ever. There was like this magical moment, and I don't know what happened--
Ms Tower: I guess that's-- [long pause, both reflecting] Well, he did really get into James and the Giant Peach. If we could just get him into reading. . .
Ms James: It seems to me we should keep him in the cooperative learning framework first, then, if that doesn't work, then we can go beyond.
Ms Tower: I wonder. I asked him who he wanted to work with, and he said Nick. He was sweet with Nick, but then the novelty wore off. After a while, it seems too much to ask of a partner to work with him. That's how I feel.
Ms James: Problem is-
Ms Tower: (pause) Maybe I'm less motivated. What about working in the group? Is is good for him like to put him in groups? J just rolls his eyes, and I can't blame J because he's a nice kid, but Mark will kind of poke at him, just to get him riled. J's kind of just this gentle giant, so J rolls his eyes. Mark's not an easy person to have in a group, and so the kids are good sports about it, but it's kind of hard.
Ms James: You know, like I guess neither of us are satisfied with the quality. I mean, it's either back to the group or be alone, and we know he has the ability to learn. The only thing that really comes to mind is start out to really modify his lessons.
Ms Tower: Uh-hmmm.
Ms James: Really modify them. I guess, maybe, back up a few steps and make him write complete sentences. . .Take the time to do it right. . . He may not even know what it's like to do it right any more. (T/A2-11)

They agree that the special educator will work with Mark for the last fifteen minutes of the reading period while other children write about their reading.[4]

As the meeting finishes, Ms Tower remarks, "Well, it's interesting. We talk about it and begin to find little things, little slots." (T/A2-8) In an interview later, she said about collaboration, "I think it's good to just reflect with another teacher, you know, it's something you don't do, and you think that you're thinking about the kids, and you think you're planning, but you're so busy that to just kind of sit there and say, yeah, I noticed this, and why don't you try this instead-- So that's been good." (IT7) Ms James commented similarly, "We come up with ideas, we play around with the pros and cons of each idea. . .it's definitely a joint decision." (IA4)

These teachers displayed respect for each other and interdependence in the education of these two youngsters.

Ms Tower: I (pause) couldn't do it, without you, here, for half an hour every day.
Ms James: We'll put that down for my job security.
(they laugh)
Ms James: No, I mean, I look at- (pause) I just stand amazed when I look at you. You guys have some tough kids, and-
Ms Tower: Yeah.
Ms James: And I pop in for half an hour here, or a half hour there.
Ms Tower: Well, no, that's kind of my break, really, though. Because that's kind of how I survive. I don't really deal then with monitoring him. It's really good. Helps. Yeah. And you've been really good because if he's in a bad mood, it's like a new face, and you can come and help him. And you never lose your temper with him.
(Ms James laughs)
Ms Tower: And I- (pause) -but you're really positive with him.

The issue of balance between whole class and individual needs weighs on Ms Tower. She treats children individually who do not work well in a large group, but her respect for the children in her class also limits some of her choices. She worries about overusing strong peers, and also about the trap of needier children's overreliance upon adults for completing assignments.

Ms Bowie (intermediate classroom teacher) and Ms James

Ms Bowie is a respected school leader who helped to institute and train teachers in cooperative learning for reading. She meets with Ms James after school at the back table in her room, where clay masks (an art project built around the current reading selection) are drying. Ms James shows Ms Bowie the CBM graph, which indicates that Moe, their current concern, is progressing slower than they might hope. Ms Bowie is surprised that the specialist expects Moe to improve at the same rate as an average sixth grader ("Even though we're considering him special ed?" B/A1) Moe's teacher succinctly describes what Moe can and cannot do in the classroom, shares test scores and written work, and emphasizes his verbal ability, which she believes pulls him through on much of the class work.

Ms Bowie: . . .I mean, today he was talking, and so verbal, so good at that. But he does have- - Something is really wrong--
Ms James: Okay. Do you think he's decoding the words?
Mrs. B: You see, I don't know. I have to admit, that decoding to me, by the time they get to sixth grade, I don't spend a lot of time on it. I need to, but I don't really do it because we're kind of moving on the the next something. . . .when I come to the sixth grade, I don't have the skills to do that, personally, I mean I've never really done that. When they get to sixth grade, up until this year, or a couple of years ago, they were taken out of my hands anyway, so I didn't have to do it. Some other room, and somebody else had to do that. " (B/A3)

Ms Bowie shares information and answers questions, and has made one classroom adjustment for Moe[5] , but she waits for the specialist to assume problem solving responsibility. After a pause, the specialist suggests pulling Moe out of the classroom for decoding instruction in an alternative reading program, and the teacher encourages the pullout. She attributes Moe's academic improvement to work he does with the specialist outside the classroom.

When he first came in, I didn't really think there was much hope. Lots of things, like- he would have some letters that were in the word, but not anywhere near the right order, just turned around. So, I don't know, the spelling [conducted by the specialist] seems to be helping him, and he does a lot of writing now (B/A7)

Mrs. Bowie clearly cares about Moe: how he behaves, how he completes assignments, how he feels about himself. She has worked to improve his classroom behavior and participation ("He came in with a chip on his shoulder, but he's totally changed it." B/A4), yet does not express a similar confidence to affect his academic behavior.

When you get to the [intermediate grades], they've had a lot of interventions. And some-- there just isn't any more. I don't know. I would hate to say that, because I don't know what the next intervention is for the [nonreaders] of the world. I don't know what it is. We've tried them all, maybe. I mean encouraging, his determination-- He may have reached his level. . .They may not get any better. Can't solve that one, can we?" (IB5)

At the time this problem solving meeting occurred, Moe was pulled out of class one period daily for spelling instruction. The additional pullout for decoding instruction was not arranged. In the spring, most class activities became group projects where Moe's verbal ability may have buoyed his contributions; perhaps his decoding disability was less intrusive.

Ms Tower and Ms Bowie both maintain overall high levels of class participation, lesson momentum, clear instructions, challenging assignments, and a sense of class cohesion, yet regarding children with learning handicaps, the degree of instructional responsibility assumed by the classroom teachers differed dramatically, even though the same specialist collaborated with these two teachers. Ms Tower and Ms James, who each expressed faith in the ability of the collaboration to positively affect learning outcomes for their shared children, continued collaborative problem solving and planning through the end of the school year, however, no further collaborative meetings were conducted between Ms Bowie and Ms James in the last three months of the year.

Ms Lion (primary classroom teacher) and Ms. Apple (remedial teacher)

During the first problem solving meeting, the primary and remedial teacher examine the CBM reading chart and discuss the disparity between Rod's current performance and his reading goal. Ms Apple, the remedial teacher, asks most of the questions (she holds the script, takes notes on teacher's comments, and more rarely, on her own observations); Ms Lion provides information about Rod's class work and behavior, pinpoints particularly difficult tasks, and the conditions that seem to improve his performance. She has already implemented several modifications for Rod: a teaching assistant reads the stories to him before he reads aloud and monitors the first few minutes of his written work; Ms Lion sends blank tape home for Rod to record his oral reading. But she is dissatisfied, particularly with his acquisition of new vocabulary.

I noticed that every time he missed the same words, third time he finally got it, so it seems like he needs a lot of exposure to-- His fluency improves, but not his corrections. (D/N4)

Ms Lion selects the area for an intervention ("It seems like he just-- the new vocabulary, the moment we get the list, he learns some, but when we get to the book, he doesn't recall it" (D/N5)), but they work out the actual intervention together.

Ms Lion: Well, I was thinking, in the tutoring, I don't know how this would work, but if maybe the vocabulary words were introduced in sentences, do you think that would make a difference?

Ms Apple: You mentioned that-- that would be modifying lessons: let's think: Present vocab words in sentences. Ok. . . Is there someone who could help you with that?

Ms Lion: [pause] My moms I just like to keep just to help with reading. And Mrs. B, she's already pretty overloaded. . .

Ms Apple: When you present the words, you probably do present them in a sentence--

Ms Lion: I know something that might help-- You know how we copy the story for them? Maybe to go through and highlight the vocabulary sentences and put them in the peer tutoring folder. And when he does the words, I could just highlight the words in sentences in the story, and the tutor would just go through and read the sentences that have the highlighted words, instead of the list. And he'd still be using the list in the room, but maybe it would give him a little more understanding.

Ms Apple: That sounds like a good idea.

Ms Lion: Think we could try that?

Ms Apple: Yeah! So what you'll do is just highlight the copied story, highlighting vocab words in context. (D/N8)

They also agree on a second intervention suggested by the remedial teacher-- five minutes of extra oral reading to a peer just before school starts in the morning. They try out their plan for

three weeks, then meet to reevaluate Rod's progress. Reading aloud with a peer has been inconsistent, but Ms Lion wants to keep trying to implement it more regularly. The highlighting of vocabulary is occurring as planned ("I feel like that has made a little bit of fluency, in that he's picking up phrases, rather than just the words." (D/N2-1)), but due to end-of-year scheduling changes, peer tutoring will soon be ending. They disuss how they might continue the intervention, speaking in excited tones and filling in each others thoughts:

Ms Lion: Although, it seems like Monday and Tuesday, he just really struggles with the story, then by Wednesday and Thursday he's really sounding pretty good, and a little bit more fluent with it.
Ms Apple: Uh-huh.
Ms Lion: But, you know, he's already worked on it, one week before, so this is like the second-
Ms Apple: Time.
Ms Lion: Wind. So, I don't know if we--- Maybe it isn't helping, but maybe--I don't know if-
Ms Apple: Well-
Ms Lion: Do you think it's something we should-
Ms Apple: I think we-- You know, it's worth doing this if we see more fluency.
Ms Lion: I guess we just have one more week, though, anyway-
Ms Apple: -of tutoring, right, so we can only do that one more week.
Ms Lion: I really have about three or four that are really going to need-
Ms Apple: After peer tutoring?
Ms Lion: After tutoring's over. . .But then, I'd really like to keep in place-- I think, since we just have the one more week of using words in context, I think I've seen some plusses because of the that. . .
Ms Apple: So, what can we do, then, after we get this one week of peer tutoring down and we can't do this . . . intervention any longer? You're wondering if, perhaps, we can have someone--
Ms Lion: I really think we need to have him . . . do some work on the new words.
Ms Apple: Work with an adult?
Ms Lion: Mm-hmmm.
Ms Apple: . . . Kind of like in the tutoring situation?
Ms Lion: Right. (D/N2-3)

Two weeks later, when they meet again, the revised intervention is still in place and going well[6]. In an interview, Ms Lion commented that, for her, collaboration was necessary to keep ideas and possibilities open:

"I think (pause) I would maybe give up [without collaboration]. Have the tendency to maybe just not have the motivation to even try to brainstorm it to get a picture of what was even possible. So often it's somebody else that comes and assists you with that . . . I think it just makes you feel like you have more resources (pause) and more comfort (pause), that you're on the right track."(ID6)

While she thinks teaching struggling readers is harder than teaching average learners, the support of the specialist in class makes it possible to achieve positive learning outcomes, including accountability for the children learning words, reading aloud and completing assignments, as well as increased independence and self-reliance.

The remedial teacher, Ms Apple, appreciated the shared goals that arose from collaborative problem solving.

In the past, each teacher had their own goal, and I wasn't always sure what that was. And I think with a common goal, it's a lot easier to read what the teachers need and what the kids need. I feel that problem solving is truly problem solving because we both know what we want in the end. . . We're in cahoots together. [laughter]" IN 2)

Where in previous years she would have pulled children out of the classroom for reading instruction, assuming personal responsibility for the child's reading progress, she now leaves ultimate responsibility for intervention with the regular classroom teacher.

Most of the time, I go by their observations, because they're with the student more often than I am, and I trust they know the child better than I do. So if they say that this child is having difficulty in a certain area, I go with that, because I've worked with these teachers long enough to go with that and trust that judgment. . . So I think it's pretty much directed by the classroom teacher, and yet all the teachers I work with are very open if I make a suggestion, and say this is something that I think maybe I need to work on." (IN 3)

She would like to extend collaborative problem solving into collaborative teaching "I do wish that sometimes they would see-- and I think it will happen-- the possibilities of more team teaching, where it's more collaborative in that respect. Maybe I could do a lesson, and they wouldn't feel they need to take all the responsibility." (IN 5) She liked the formality of the script: "I think that's really important so you know that that whole process is important, and it counts for something. Too often we let it slide by and we don't have a reason for doing it-- I mean, we do have reasons, but we don't make it happen. So it does force us into that kind of a stance. Doing something regularly makes it happen." (IN7)

Ms Elfin (intermediate classroom teacher) and Ms Apple

Ms Elfin considers diagnosis of reading problems to be one of her strengths. A former remedial teacher, Ms Elfin is teaching fourth grade for the first time. Ms Apple asks Ms Elfin the scripted questions about facets of Sam's reading problem. The questions and answers are sparsely worded as they assimilate the information each brings to a better understanding of how Sam's typical day progresses. Ms Apple asks about his decoding and sight words, and Ms Elfin replies, "He's able to use them, but, have we talked about fluency yet? Are we getting there, or can we now?" (S/N2)

Ms Apple answers, "We're on "student scores on the last four word meaning tests," and does not deviate from the scripted questions to suit the classroom teacher's interest. Ms Elfin bides her time until they reach the point where the script poses the critical questions. When the specialist asks about silent reading, Ms Elfin's voice raises in pitch and intensity, "That's right where we're at! That's where our big problem is--"(S/N2).

Reading practice at home is part of the regularly assigned homework, but Sam has not been following through, due, she thinks, to his difficulty with sustained reading and choosing books that are too difficult. Both teachers agree that he needs more practice opportunities in and out of class. Ms Elfin commented, "If I have a few seconds in here, he's the first one I go to" (S/N2), but she worries about balancing her time. She knows what is needed, but the demands of whole class teaching interfere with providing what she feels is the right assistance.

(Ms Elfin) I guess I need some help somewhere along the way, where he's held accountable for reading, cause I don't check every day. . .to see if they're doing it. Sometimes it just slips through. . .But if there were some way while you're in here, if you could check to see if he's doing that--

Ms Apple agrees to help with daily homework checking and twice weekly reading in the back of the classroom[7] and Ms Elfin agrees to help Sam select a book at an appropriate level. As the meeting closes, Ms Elfin says, "I really think this will help. Sam's going to benefit." (S/N5) Later, she commented:

"I, you know, I think Ms Apple and I came up with some excellent things that I wouldn't have taken the time to sit down, for one thing, and work out, if we hadn't been sitting down doing it. So-- I feel real positive about that. . .It took time, but I didn't think it was a waste of time at all. It was something that I felt comfortable with because it's something that I knew needed to happen anyhow, and then I had somebody nail me down to "this is the time we're going to do it, and I'm going to help you," and you know. So I felt it was a real plus." (IB5)

Ms Elfin and Ms Apple did not appear to acknowledge their similar diagnostic, prescriptive framework, which might have shortcut unnecessary script-bound dialogue.

Analysis of Data

Working hypotheses

After our first reading through the transcripts, we developed a coding scheme based on identifying differences in classroom structure, management, and teaching experience, how and

how often meetings occurred, who participated in developing interventions, whether the planned intervention occurred, and teachers' degree of satisfaction with collaboration--any of which could affect the nature of collaboration. Transcripts were coded for these factors, however, we soon realized that our coding was too narrow, failing to capture the flavor of the interactions and teacher explanations and elaborations during later interviews. We added brief running commentary along the margins of transcripts and notes. We then looked for recurring ideas, and assembled themes which threaded (in positive or negative instances) through the body of transcripts. From these themes we developed four basic assertions which maintained integrity and withstood the search for disconfirming notions throughout our sources:

(1) Teachers who have academic improvement goals for all children, including whose with learning handicaps, will be more likely to collaborate with a specialist to help achieve those goals;

(2) Collaboration is likely to be ongoing and valued when regular teachers take responsibility for the intervention;

(3) Teachers who can define the learning problem the child is experiencing will attempt to solve the problem; and

(4) Collaboration is likely to continue when it assists in maintaining balance between the needs of individuals and the whole class.

Discussion

Smith and Shepherd (1988), in a cross-school analysis of teachers' beliefs about readiness and kindergarten retention, reported that "to a remarkable extent, beliefs were shared within a school." (p.324) In this school, however, beliefs among staff about teacher roles in the education of specific children, about the malleability of student learning, and the value of collaboration varied widely.

Both intermediate teachers were highly structured and organized in their presentation and classroom routines, managing the exemplary classrooms always on the itinerary for visitors to the school; both teachers were highly respected by their school staff, by university personnel who have been associated with this school over the past four years, and by two researchers who conducted observations in their classrooms during the year this data was collected. They teach the same grade level and collaborated with the same special education teacher, however, the nature of their collaboration differed.

Goals for children with learning difficulties

Typically, goals for children with handicaps reflect a range of expectations, e.g., decrease frustration with class work, increase interaction with peers, participate in class activities, attempt class assignments, increase academic skills, read from a grade level text. Ms Bowie expressed skepticism when the specialist expected Moe to increase his reading skill at the same rate as other learners his age. The outside-of-school problems Ms Bowie could not influence, such as illiterate and/or single parent families, poverty, medical concerns, or learning disabilities, seemed to overwhelm any inclination to intervene academically. She was pleased with the child's affective learning--improved study skills, attitude toward assignments and other students-- however, for reading she said,

> I just haven't figured out what they need, I guess. I don't have--I don't really have a lot of training in special ed. I've avoided that. I don't have a lot of techniques and things and special ed training. (IB5)

In her view, the special educator possessed a magic wand, earned through specific courses or experiences or knowledge unavailable to classroom teachers.

Ms Tower, on the other hand, said, "I might have [the hard to teach children] do what would be kind of a hassle to do with the whole class, like writing their words in shaving cream or something... I may teach them differently, I guess." (IT4)

The goals for the disabled child appeared to influence the type of interventions teachers considered, and the responsibility they assumed for intervention, which in turn probably influenced the usefulness of collaboration and the degree to which each teacher actively participated in collaboration. Ms Lion and Ms Elfin articulated academic goals ("Even my lowest readers will learn basic vocabulary and increase fluency at a steady rate" ID3; "I want to give them tools, with a

strategy for decoding, comprehending, getting finished" IS6). Both specialists stressed class participation as their first goal ("age-appropriate exposure to reading" IA3; "arrange anything I can to help them do better on class work" IN4), and specific reading goals second ("to shore up any special reading difficulties they may have" IA3). Perhaps a teacher's belief in her own effectiveness determines that teacher's goals for children, which in turn affects willingness to collaborate (e.g., If a teacher has never successfully changed the course of learning for a handicapped child, she may not believe academic goals are reasonable. If academic goals are unreasonable, then why try to change a child's achievement through collaborating with the special educator?) Among these teachers, the (self-perceived) ability to affect behavior sometimes differed for different behaviors, e.g., a teacher may work hard to increase a child's participation or decrease the level of frustration, but feel unable to affect the child's reading improvement. When teachers talked with confidence about affecting change in the child's reading performance, interventions occurred.

Taking responsibility for intervening

In several cases, interventions included specific components to be implemented by the regular and the specialist teachers ("I'll be responsible for modifying his assignment, and you'll take care of the daily checklist?" S/N11), in others the regular teacher took ultimate responsibility for the child's program, but delegated a small portion of the reading period to the specialist ("I see myself as their teacher, definitely, and I'll arrange whatever support they need. I don't see, like, they're special ed so Ms James can handle them." IT 9). Ms Bowie, however, felt uncomfortable with a mutual or leading role ("That's what specialists should do. It's their responsibility to teach the low kids." IB4) Taking responsibility does not imply that the regular teacher does it all. The interventions ranged from moving a child's workplace within the room, to marshalling the services of another person to monitor oral reading, to one-to-one decoding assistance. Rather, the classroom teacher ensured that something be done when a child seemed in danger of failing.

Teachers who actively implement an intervention may be more likely to evaluate the direct effect of the intervention, which (if positive) could stimulate further collaboration. Ms Bowie, who did not believe intervention was her responsibility, had no further collaborative meetings. Ms Tower, Ms Lion and Ms Elfin all worked on developing interventions that could be implemented by them in their own classrooms, and collaboration continued among these three teachers and their specialists. Although the specialist took charge of some interventions for Ms Tower and Ms Elfin, classroom accommodations were also made by both generalists.

Defining the learning problem

Teachers' understanding of children's learning difficulties varied dynamically (e.g., contrast two different teachers: Ms Tower: "When you give him a test where he has to answer questions, where you have to read a paragraph [silently] and circle the right-- He can't do it." (T/A2); Ms Bowie: "You know that there's a problem, but you're not sure what the solution is, *naturally*. I really couldn't tell you what Moe's problem is. I really couldn't tell you why he's at third grade level, whether it's his family or he's not capable, if he's got some learning disability. I really don't know." (IB6))

Ms Bowie believed the specialist should define the problem and a likely course for alleviating it. The regular teacher should not be expected to diagnose learning problems or suggest solutions; rather, her focus is teaching a core of curriculum to the group--to the average learner--and not to differentiate instruction for individuals.

Pinpointing the reading problem stimulated ideas for interventions that could ease the area of difficulty. When definitions were vague ("She just needs a lot of help" S/N5), the teachers had more difficulty designing interventions. Problem identification was always an early activity in any collaborative problem solving meeting, however, in collaborations that lasted beyond the initial few rounds of "trying out the process", clarification grew increasingly precise, often including the conditions which appeared to aggravate or alleviate specific behaviors.

Balance between the needs of individual children and the class as a whole

While specialists see their charges as individuals, regular class teachers must also consider the needs of the class as a whole: to keep all children productive, to maintain order and group

discipline, to share the time available for providing individual attention among many different children. The amount of contact a teacher will give to an individual child varies, and some teachers also have ways of extending individual attention, e.g., through adult or peer tutoring, or cooperative learning teams. Teachers who view whole-class needs as separate from, and far more important than, needs of individual children may be less interested in collaborating to develop interventions for individuals. Insistence that lower performing children belong and have a right to be in regular classrooms may provide the motivation for regular teachers to work with specialists to make that placement work, e.g. Ms Lion says regular class placement is good for both special students ("If he's working with a partner, then that's good for him. . . and I've found that there's where he does his best work") and for the regular students ("I think it's really neat that the kids within the room have the opportunity to help the [children with low reading skills], and I see them reaching out and just giving them the help they need."(ID2)).

Balancing educational resources--staff, volunteers, peers, materials and time--emerged as a central issue in designing interventions. Peers were often used to assist lower readers, and, perhaps naturally, several of the teachers were concerned with overusing this resource.

> I give lower readers more attention during reading than I give to others, but group dynamics are also important to me, so while I use higher kids as partners and resources, I don't want them stretched beyond what's comfortable and reasonable. (T/A10)

Some teachers made effective use of volunteers to stretch their resources ("He needs to be monitored, so I have my moms sit with him while he's writing, and a peer tutor or adult listen to his reading. I regularly schedule helpers when I plan reading for my low kids." ID3), while others within the same school believed such help was unavailable ("But this is not a school with parent support" IB4).

Teachers expressed concern about helping a child too much, especially the intermediate teachers who were responsible for assigning letter grades ("He knows the vocabulary on the test, but he wouldn't know it if we didn't talk about it" B/A 5; "I am lenient with him when I grade. His writing is difficult for him. Yeah, I'm probably more lenient when I grade him. So I don't know if this is really a good measure." T/A 1; "One thing I did last week that helped, is kind of giving him all these breaks, that I don't know if we're kind of spoiling him or not. . . Of course it helped, he got a second chance. He got a B on the last test doing that, but I wondered if we were sort of cheating, but I think it was good for him." T/A 6). They worried that the grading might appear preferential and unfair to other students who achieved their grades "legitimately."

Balancing time is an important issue to teachers ("If I have a few seconds in here, Sam's the first one I go to, and I do a lot of listening, one-on-one, but there's a lot of other kids in here too, and I can't give him nearly as much as he needs." IS12). Following is a portion of a transcribed problem solving meeting between Ms Elfin and Ms Apple:

> Ms Elfin: You know, there's certain things you just kind of end up letting go, just because you can't [follow] through with everything on him. You know, it's just you'd be going--
> Ms Apple: He takes a lot of your time.
> Ms Elfin: Yeah, well, then there's a lot of other kids in here too, that-- You kind of pick up things to really-- [pause]
> Ms Apple: Things that are most important.
> Ms Elfin: Yeah. (S/N2-11)

Teachers in all roles feel spread thin by inadequate resources. Class size and conflicting demands make it difficult to carry through with planned interventions. Nevertheless, some teachers achieved a balance among needs which allowed maintenance of group momentum while providing nearly continuous stimulation for even the lowest performing children. Perhaps teachers who see themselves as effectively managing a wide range of needs are more willing to engage in collaboration to further heighten the effectiveness of their balancing act.

Conclusion

Clearly, these teachers are individuals who come to collaboration with individual histories of teaching, training, working with a variety of children and adults, beliefs about the roles for staff

within schools and what kinds of assistance and improvement are reasonable for struggling readers.

We found the roles and beliefs of the specialists to be as diverse as those of the regular class teachers (given two specialists compared to four regular teachers), and while they certainly influenced the course of collaboration, they did not determine the course of collaboration. Ms James worked with the teachers who were most and least involved in collaboration for assisting low readers. She preferred an "unrestricted" format where "we come up with ideas, we play around with the pros and cons of each idea" (IA4), and then kept all of the options flexible and dependent upon how the child responded to the intervention.

Ms Apple used the script rigorously. She liked regularity, structure and consistency in her work relationships. About collaboration, she said:"I think it's a good idea to keep on some kind of a formal basis. . . I think that's really important so you know that that whole process is important, and it counts for something. It causes people to come together. . .So it does force us into that kind of stance. Doing something regularly makes it happen." (IN7)

Limitations to this study.

Two constraints to collaboration were generated by the process for collaboration in this research. The first constraint is the prompt for calling collaborative meetings, and the second is the problem-solving script.

CBM as a prompt for meetings.

The first collaborative meetings were scheduled in response to a prompt: the computer program which monitored the child's Maze performance alerted staff that a program change (intervention) was needed. Curriculum Based Measurement correlates highly with other commonly used classroom reading measures, such as the California Achievement Test and oral reading fluency (Fuchs, Fuchs & Maxwell, 1988). Nevertheless, when teachers are talking about the functioning of one individual child in the classroom, it is unlikely that any single measure will accurately reflect what both teachers know and expect. In three instances (the only instances among the set of meetings), teachers sat down together to work through the problem solving process, alerted by lack of progress over several weeks on the Maze task, only to discover that one of them did not believe the child's program needed alteration.

Among two teacher pairs (Ms Tower and Ms Elfin), collaboration to solve educational problems occurred when it was warranted by classroom performance or upcoming projects, in addition to meetings prompted by CBM. For the other pairs, however, meetings only occurred when prompted by CBM, and for these pairs, a mismatch between performance on the measure and in the classroom could undermine the integrity of the process.

Guidance from a script.

Zins (1988) suggested that implementors (e.g., teachers) be involved in format selection for collaboration processes. In our work, the format was presented to the specialists, altered with their feedback, and then presented by university personnel to faculty in a regularly-scheduled meeting. In practice, the meetings were voluntary, and passive resistance was supremely effective.

In a comparison of meetings with and without guidelines, Wesson (1991) found that teachers without scores or scripts to focus their collaboration often did not understand the purpose of the meetings, or know what to talk about. The problem solving script used here was meant to provide guidelines for topics and questions which could lead a pair of teachers to develop an intervention. In some cases, however, the script may have also inhibited teacher interaction by presenting more questions than necessary, or "birdwalking" around a problem they could have identified immediately. Overattendance to lists of questions may have interfered with careful listening, and dictated the control of the meetings by placing the person with the questions in charge of the flow of conversation.

Other teacher pairs deviated from the script considerably, taking turns with the notetaking and protocols, allowing the conversation to flow naturally (through substantial digressions) to an intervention. The teachers who allowed this meandering (e.g. Ms Tower and Ms James in this sample) ended up with longer meetings, but they also complained less about the time involved, and expressed satisfaction with collaboration more frequently. The teachers who felt less script-bound

are also the teachers who met outside of CBM-prompted meetings. Perhaps the meetings generated by children's difficulties within the context of the classroom, idiosyncratic to the moods and perceptions of the teacher pair, met personal or professional needs of teachers beyond the initial intent (to help the child) of the collaborative process.

This study was narrow in scope, involving a contrived context (the problem solving meeting) surrounding one facet of a child's education (reading). Nevertheless, it may be necessary to instigate collaboration among teachers to allow some of the major issues embedded within collaboration to be identified. Further studies could investigate more natural processes and other contexts for collaboration, and enlarge the subject matter field on which to collaborate to improve the educational experience of children with learning disabilities.

In his discussion of special education service reform, Gerber (1988) commented that, "it is one thing to legislate integration of disabled, minority, or even disabled minority, children into the mainstream; it is quite another to make their stay educationally worthwhile." (p.311). Despite the difficulty of establishing and maintaining collaborative relationships, collaboration among general and specialist teachers can increase the chances of successful integration of children with learning handicaps.

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[1] Six meetings were not recorded, due to tape recorder malfunction or teachers forgetting to tape. Records of these meetings consist of researcher's notes (for observed meetings) or teacher notes about the derived intervention.

[2] All teacher and student names are fictional. Labels in parentheses indicate sources for quotations, e.g., T/A3 is from page 3 of a transcribed meeting between Ms Tower and Ms James; IB6 is from page 6 of an interview with Ms Bowie. Ellipses indicate words or phrases omitted.

[3] From our classroom observations, the new intervention appears to be an improvement over Luke's work in a foursome. His partner, an enthusiastic, highly motivated girl who seems to genuinely like Luke, says, "Hey, look!. Only five questions today. Think we can do it, Luke? He nods, looking over the work. "Yeah!" he answers confidently.

[4] During our observation following this intervention, Mark read the questions first, then read the text aloud to Ms James until he found the answer. He told Ms James what he would write, wrote the answer, then read it aloud to proofread. Mark's group participation and assignment completion following this intervention were improved over our four previous observations.

[5] The accommodation in place for Moe was designed to help him fit into the overall classroom goal of completing partner reading within an allotted time limit. His partner read the first five pages aloud before the pair began taking turns, thus Moe had less opportunity to read during an activity which might have helped increase his decoding and fluency. Our observations of Moe indicated that he was aware of and included in the classroom culture. He clearly liked the class and attended and participated during the whole group presentation of the lesson.

[6] The same process they designed for peer tutoring--highlighting vocabulary words and rehearsing them in isolation and in context--was continued by Ms Apple in short individual tutoring sessions three days per week.

[7] One month later, the daily homework check was modified to twice weekly, on the same two days that the specialist listened to Sam read in class. Ms Apple cited lack of time as the reason for reducing the original intervention.