

Research, Consultation, & Teaching Program Training Module No. 5



Project OUTREACH: Consulting With Teachers on Use of Student Performance Data

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Chapter One:

Introduction to Project OUTREACH

There is no exact blueprint for successful professional development activities. Efforts to train teachers in the use of effective practices are varied and depend largely on the make-up of the local context (McLaughlin, 1990). Professional development activities may consist of workshops to increase teachers' theoretical knowledge in an area, courses designed to certify teachers in a new field related to education, or in-service training on specific educational interventions. The professional development activities described in this module were designed to improve teachers' and educational assistants' (EAs) use of a particular educational intervention. Specifically, we relied on a model of consultation consisting of in-service training and on-site visits that focused on the use of student performance data to improve participants' instructional and assessment practices.

We had one primary goal for this project: We wanted participants to increase their familiarity and use of student performance data in order to make well-informed instructional decisions related to student learning. Our goal was simple in theory, but complicated in practice because teachers were so busy with their existing instructional and assessment programs. Our experiences had shown us that true professional development requires a firm commitment to change as well as a need for constant support and encouragement.

Early in the project it was evident that our consultant team held a common set of assumptions about teaching. These assumptions acknowledged the magnitude of the teaching task, and credited teachers and EAs for their commitment to student learning. As the project unfolded, these assumptions helped us maintain a positive outlook on the project's activities even

when teacher and student change seemed slow. Two of these assumptions are briefly outlined in the following paragraphs.

Teachers want to use research-based practices to improve student learning. Unfortunately, dissemination and use of research-based information is often hindered. Some variables that impede use of educational research are (a) slow communication between teachers and research professionals, (b) teachers' perceived lack of time for implementation, (c) limited support or indirect support from partners outside of the school, and (d) brief professional development activities with little, if any, follow-up. Early on in this project, we consultants agreed that the aforementioned variables often limit teachers use of research-based practices. For the project to be successful, and our relationships with teachers to remain positive, it was important for us to assume that teachers' want to apply research-based practices.

A second assumption is that teachers are committed to their profession but at times are overwhelmed by the enormity of the task. School days are full of teaching and learning, evenings are spent correcting papers, writing lesson plans, or calling parents. All too often weekends are spent at school organizing the classroom, or attending field trips with groups of students. We realized that to be efficient and effective, professional development activities needed to occur at school sites and be designed in a way that would help teachers reach their professional goals. Because we all had taught (at some level) before, we knew that typical, "shot in the arm" professional development activities were not effective. Most professional development activities occur in isolation, with nobody there to help teachers implement what was learned or hold them accountable to follow through with projected activities. In the end, the research-based program or intervention learned during a professional development in-service is often not implemented, or

is implemented with weak fidelity, because of the lack of follow-up and sustained support for teachers.

Our challenge in this project was how to provide teachers with the research-based information they wanted, while ensuring that they had the time, energy and support to use this information to increase student learning. We asked ourselves, “How can we share research-based practices with teachers in a way that ensures ownership, competency, and long-term implementation?” We knew that the answer was in how we chose to allocate our resources. We developed a plan of operation that took into account the needs of teachers, the influence of local context, and the need for our sustained involvement. We invested large degrees of time and money in order to train and support teachers, administrators and educational assistants at numerous schools, who were responsible for teaching a group of students with varied educational needs. Through our research and teaching experiences we knew that the project would be most effective if we focused on teaching a specific set of skills to teachers. These skills needed to be mastered in order for teachers to retain their knowledge over time and apply their new skills in a variety of contexts – even after our involvement had ended. We chose to train teachers in the use of Curriculum-Based Measurement (Deno, 1985) to document the progress of their students in the subject area of reading.

In the next few chapters, we describe our work with teachers on Project OUTREACH in hopes that others will increase their knowledge about variables that improve professional development, including the use of consultants to work with teachers in mutual partnerships to improve teaching and learning. We also share what teachers learned from the project, including what worked for them and what didn’t work, and how they plan to expand their new knowledge and skills in the years to come.

Chapter Two:

Research on Professional Development Activities

Successful professional development activities intended to produce changes in teacher behavior often incorporate these variables: (a) consideration of local context (McLaughlin, 1990), (b) teacher ownership in the educational intervention to be implemented (Richardson, 1994), and (c) systematic training and sustained support (Huberman, 1990).

Variables Contributing to Successful Professional Development Activities

Local context. Local context can include style and skills of educational leaders, quality of resources, and amount of money available to support professional development activities. More often than not, the interaction of these variables dictates the success of any educational intervention. Noell and Witt (1999) state, “When resources are abundant and accountability for intervention is high, modest consultation procedures may lead to intervention implementation [but] ...When resources are scarce and intervention is devalued by the school building’s/district’s leadership, even the most powerful consultation procedures may be futile” (p. 33).

In the late 1970s the federal government funded the RAND study with the goal of exploring the impact of federally funded professional development activities on changes in educational practices. The study’s initial findings stressed the importance of local context in educational change and more than twenty years later, a lead researcher in the project reports the continued importance of local context, stating that, “Policy cannot mandate what matters. What matters most to policy outcomes are local capacity and will. The local expertise, organizational routines, and resources available to support planned-change efforts generate fundamental

differences in the ability of practitioners to plan, execute, or sustain an innovative effort” (McLaughlin, 1990, pp. 12 & 13).

Teacher Ownership. Although adequate resources and strong leadership are important variables, teacher ownership of the educational intervention is critical. Abbott, Walton, Tapia, and Greenwood (1999) argue that if researchers (or consultants) do not gain buy-in at the grass-roots level from teachers expected to implement the intervention, results will be weak. These researchers attempted to implement a school-wide educational intervention in three elementary schools. Two of the schools actively participated, but teachers in the third school did not. In the end, even with full support of the building principal, the researchers were forced to drop the school from their project. These findings are echoed by other researchers, who state, “...the essence of sustainability [of an educational intervention] is that there must be high levels of satisfaction for the person who implements the practice” (Vaughn, Klinger, & Hughes, 2000, p. 168). Obviously, educational interventions are not taken at face value, but instead are “filtered through teachers’ belief systems” (Englert & Tarrant, 1995, p. 328).

Systematic and Sustained Involvement. Finally, to be effective, professional development activities need to consist of systematic and sustained involvement of outside consultants or researchers (Hodges, 1996). Research has shown that adoption of an educational intervention does not ensure implementation and implementation does not ensure sustainability (McLaughlin, 1990). Sustained change in teaching practices is a very slow process (Fullan & Stiegelbauer, 1991). A teacher/researcher who was highly involved in a professional development project unrelated to ours stated, “I expected to see changes in teacher behavior right away, but I learned from this experience that change is a very slow process. At one point in the first year, I felt it was my fault that teachers weren’t changing fast enough, and there were times that I felt like giving

up” (Peterson, 1995, p. 366). Not only is educational change slow, the process of change is also very irregular and is characterized by peaks and valleys (Gersten, Morvant, & Brengelman, 1995; McLaughlin, 1990). Sustained involvement by outside consultants affords teachers and trainers time to work through the peaks and valleys, as well as opportunities for continued dialogue in order to create the best fit with local context.

Models of Professional Development

In light of previously conducted research, models of professional development have been designed that take into account the importance of local context, teacher ownership, and sustained implementation efforts. Three successful models of professional development are the Juniper Gardens Children’s Project (JGCP; Abbott, Walton, Tapia, & Greenwood, 1999), a model of collaborative research (Englert & Tarrant, 1995), and coaching (Showers, 1987). All of these models have used direct and indirect data to evaluate the success of their professional development activities. Critical components of the models as related to important professional development activities are described in the following section.

Models stress important variables. Although different in their actual implementation, the JGCP, collaborative research, and coaching models share a set of similarities. One important similarity is that each model stresses the importance of local context by conducting professional development activities at actual school sites, taking into account local resources and routines while valuing the input of local expertise. For example, in the JGCP model, professional development of teachers occurred at local school sites, where teachers and researchers planned, implemented, and maintained interventions. Team meetings took place in classrooms during planning time or immediately after school and consisted of a blend of training and collaborative problem solving related to actual implementation in the classroom. These meetings were noted as

one of the characteristics contributing to the model's success (Abbott, Walton, Tapia, & Greenwood, 1999).

A second similarity inherent in the three models is the importance of teacher ownership and direct involvement in the project. Teacher ownership is strengthened and consultation activities are more successful when teachers are provided with opportunities to discuss implementation of new strategies as well as their underlying concepts (Gersten & Brengelman, 1996). Conceptual understanding is an important variable in successful models of professional development, and teachers need more than cursory training sessions focused only on procedural elements of implementation (Showers, Joyce, & Bennett, 1987). Instead, a combination of conceptual and procedural elements is needed and this combination has been demonstrated to triple the effects of professional development training activities (Showers, Joyce, & Bennett). Furthermore, dialogue between teachers and consultants has been demonstrated to increase levels of teacher ownership (Abbott, Walton, Tapia, & Greenwood, 1999).

In the collaborative research model, training sessions consisted of conceptual as well as procedural information and included a range of teachers representing a diversity of philosophies, ideas, and experiences that enriched the learning of all participating teachers (Englert & Tarrant, 1995). Furthermore, teachers and researchers were regarded as equals and collaborated to develop and implement educational interventions (Englert & Tarrant, 1995). Researchers stated that, "Teachers were given leadership in their choices about curriculum development, so that the power over the topics and change agenda might be shaped by the teachers' concerns, interests, and questions" (p. 327).

A third component in each of these models is the existence of a systematic approach to professional development, extended over a long period of time. For example, Showers (1987)

described the coaching model as a blend of intensive training followed by on-site visits characterized by problem solving and feedback related to implementation of newly acquired interventions. In this model, teachers were supported as they moved through progressively harder stages of implementation, culminating in their ability to analyze various contexts and apply appropriate educational interventions. Finally, sustained involvement is an invaluable component of the coaching model in its emphasis on initial training of new skills followed by intensive, on-site assistance (Showers, 1987).

Related Research

Many researchers have reported similar findings to those discussed above. Their research findings, listed below, further support the importance of local context, teacher ownership, and sustained involvement.

Local Context

Consultants need to have an awareness of issues related to local contexts, including local resources and leadership variables (Vaughn, Klinger, & Hughes, 2000).

Effective projects are characterized by adaptation rather than uniform implementation, and local factors dominate project outcomes (McLaughlin, 1990).

“Local variability is the rule; uniformity is the exception” (McLaughlin, 1990, p. 13).

Teacher Ownership

Teachers need opportunities to integrate what they know with new information (Malouf & Schiller, 1995), including time to share with each other.

Teachers judge an intervention to be successful if they can put their personal signature on it (Cuban, 1996).

Consultants need to consider teachers’ attitudes and beliefs (Malouf & Schiller, 1995).

Systematic and Sustained Involvement

Sustained involvement is necessary because attitudinal shifts in teaching philosophies may follow behavioral shifts in teaching practices (Gersten, Carnine, Zoref, & Cronin, 1986; McLaughlin, 1990), and it takes time for positive outcomes to become obvious.

Systematic support is most effective when it interweaves practical and theoretical principles (Bos, 1995), or procedural and conceptual knowledge (Showers, Joyce, & Bennett, 1987).

Development of a common language (Bos, 1995) is essential to a teacher-consultant partnership.

Successful professional development activities result in the enhancement of teachers' content and pedagogical knowledge (Swafford, Jones, Thornton, Stump, & Miller, 1999).

Research-based interventions ensure changes in practice that are directly linked to changes in student performance (Abbott, Walton, Tapia, and Greenwood, 1999).

Our Model of Consultation

Project OUTREACH consisted of professional development activities based on the research-based components previously discussed. Our model of consultation integrated elements of in-service training, on-site visits, and collaborative problem solving across a range of public school personnel and university consultants. During the first year of the project, we attempted to share information and skills related to a research-based educational intervention while engaging teachers, administrators, and educational assistants in dialogue and activities tailored to their local educational contexts. We trained participants on the use of Curriculum-Based Measurement (CBM), an educational intervention designed to improve student performance through use of ongoing data collection (Deno, 1985). In the following section we highlight the similarities between variables associated with successful implementation of CBM and those variables associated with effective professional development activities.

Variables Affecting Implementation of Curriculum-Based Measurement

One educational intervention with proven effectiveness but limited implementation is Curriculum-Based Measurement (Deno, 1985). Over the past two decades research has supported the use of CBM in various educational contexts across many academic skills (Shinn, 1999). Unfortunately, like many research-based practices, actual implementation of CBM is limited, and fidelity of implementation is sometimes weak (Tindal, Fuchs, Christenson, Mirkin, & Deno, 1981). According to Carnine (1997), educational interventions are used more frequently if they are reasonable to implement. The three variables highlighted earlier in the chapter positively influence implementation of Curriculum-Based Measurement procedures; they include: (a) local context, or more specifically, time to implement intervention, (b) teacher ownership as well as acceptance of the intervention, and (c) systematic and sustained technical support.

Local context. Teachers' perceived, as well as actual, amount of time to implement an instructional intervention is a powerful variable associated with local context. The importance of time in the implementation of any educational intervention is highlighted by Vaughn, Klinger, and Hughes who define time as the "pervasive predator for teachers" (2000, p. 168). In response to the importance of teachers' time, Curriculum-Based Measurement was designed to be efficient (Deno, 1985), demanding relatively little time for administration and scoring of students' responses. When using CBM in reading, teachers listen to students read a passage aloud for one minute, compute total words read correctly and total errors, and record this data on a computer spreadsheet or a piece of graph paper. The entire process takes approximately 3 minutes. However, inadequate time to employ CBM has been often reported by teachers. For example, in a study of 136 teachers, 70 reported not using direct and frequent measurement in their

classrooms (Wesson, King, & Deno, 1984). Out of these 70 teachers, 46% listed time as the factor that most often inhibited their use of CBM. In a related study, Wesson, Fuchs, Tindal, Mirkin, and Deno (1986) reported that teachers did not “adhere to a daily measurement schedule because it was too time consuming” (p. 167), while teachers who perceived themselves as having more planning time implemented CBM to a greater degree (Allinder, 1996).

Some research findings refute the belief that time is the most important variable in implementing a change in educational practices. For example, Whinnery, Fuchs, and Fuchs, (1991), found that perceived effectiveness of a strategy rather than time or problem severity was the critical factor in teachers’ willingness to implement it. Furthermore, in a study conducted by Yell, Deno, and Marston (1992), time was noted as *only one of three* critical barriers to full implementation of CBM. The other two barriers were uncertainty about the validity of CBM, and difficulty accepting change.

Teacher ownership and acceptance of intervention. Changes associated with the implementation of CBM procedures mirror other educational changes; they are very slow and require “...both behavioral and conceptual change on the part of teachers, and both new learning and ‘letting go’” (Gersten & Brengelman, 1996, p. 68). Teachers learning how to implement Curriculum-Based Measurement techniques learn new procedures as well as new concepts, and successful implementation of CBM often requires that teachers change their instructional practices as well as the way they think about their instruction (Allinder, 1996).

Teacher attitude has also been reported as a variable that affects teacher implementation of CBM (Allinder & Oats, 1997). Teacher acceptance, or ownership, of the intervention and its outcomes will result in greater use, positively affecting its impact on student performance (Witt

& Elliott, 1985). It follows that teachers who experience a greater degree of participatory decision-making in their schools also implement CBM with greater fidelity (Allinder, 1996).

Allinder and Oats (1997) explored the effects of treatment acceptability on teachers' use of CBM and found that teachers with a more positive attitude toward CBM implemented the procedures with greater fidelity. They examined teachers' feelings after they had used CBM in their classrooms. They found that teachers who believed CBM to be highly acceptable implemented at least some components with greater fidelity than teachers who did not find CBM procedures acceptable. In particular, there were significant differences between high and low acceptance groups on two variables: (1) rate of completion of CBM probes, and (2) development of ambitious goals for students. Results also revealed that students in classrooms of teachers with high CBM acceptance had greater learning slopes than did students of teachers with low CBM acceptance. These findings suggest that the degree to which teachers find CBM acceptable will affect how they implement the procedures, and in turn affect students' academic progress. These results in turn may motivate other, less enthused, teachers to implement the intervention because, as previously discussed, sometimes the ability of the intervention to result in improved student outcomes is a stronger predictor of actual implementation than are teacher attitudes toward the intervention (Gersten, Carnine, Zoref, & Cronin, 1986).

Systematic and sustained technical support. As described earlier, systematic and sustained involvement is necessary for the success of any professional development activity. Research on CBM supports this finding. Research on the implementation of CBM illustrates the importance of adequate training and support. Results of a survey analyzing the responses of 191 elementary special education teachers, showed that only 45% of respondents used CBM in the classroom (Swain & Allinder, 1997). Even when teachers do implement CBM, fidelity of

implementation has been found to be weak. For example, when teachers were *directed* to measure students every day, many teachers assessed students much less frequently (Tindal, Fuchs, Christenson, Mirkin, & Deno, 1981).

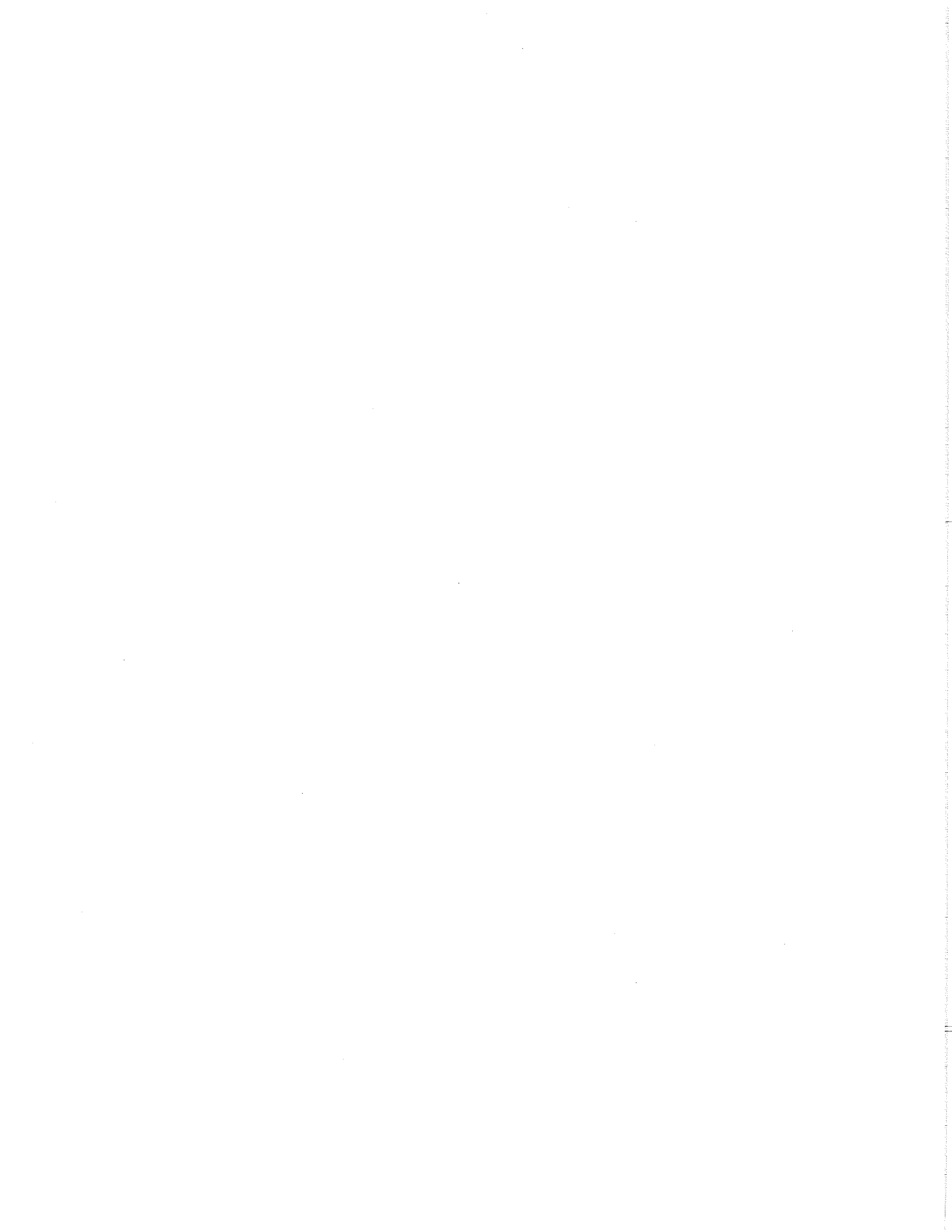
After years of research in the field of Curriculum-Based Measurement, Lynn Fuchs and her colleagues note that it may be necessary to share specific recommendations with teachers on how to use data collected with CBM in order to help them improve their instructional planning (Fuchs, Fuchs, Hamlett, Phillips, & Bentz, 1994). They state that, “. . . across studies, types of teachers, and CBM decision-making strategies, an enduring finding appears to be that teachers require advice about how to incorporate ongoing assessment information into their instructional plans. As school districts consider implementing CBM and other ongoing assessment methodologies, it seems necessary to consider strategies for providing this type of advice and support” (Fuchs, Fuchs, Hamlett, Phillips, & Bentz, 1994, p. 535). In a related vein, Allinder (1995) makes three recommendations related to the technical support needed by teachers who are attempting to implement CBM. First, teachers need regular and structured feedback regarding their use of CBM. Feedback needs to address accuracy and degree to which teachers implement CBM. Second, cohorts of teachers should meet regularly to discuss CBM issues, allowing teachers to learn through other teachers’ successes and difficulties with CBM. Finally, verbal persuasion should be provided to teachers assuring them that they can implement CBM procedures. Persuasion should incorporate clear explanations regarding the theoretical rationale and practical applications of CBM.

One teacher, Candyce Ihnot, who used CBM over many years emphasized the importance of the support and guidance she was given during the early phases of CBM implementation (Hasbrouck, Woldbeck, Ihnot, & Parker, 1999). She largely attributed her

acceptance of the utility of CBM to this technical support. She also noted the importance of time for teachers to share their experiences with each other, providing opportunities to hear success stories as well as ideas about how to make CBM work better in their classrooms.

Conclusion

The three variables previously discussed as essential for good professional development activities also are necessary for the positive implementation of CBM. These variables are awareness of the local context (especially the importance of teachers' time), teacher attitudes toward, or ownership of, the intervention, and the need for systematic and sustained support from external consultants. In the next chapter, we more thoroughly describe our consultation efforts in Project OUTREACH. In our project, we stressed the importance of consistent and 'correct' implementation of an educational intervention, while maintaining respect for the critical role local context plays on intervention outcomes.



Chapter Three: Research into Practice - Project OUTREACH

Our goal in consultation was to serve as a link between research and practice by training teachers to replicate a proven model of Curriculum-Based Measurement. As previously discussed, CBM is an effective and efficient tool for collecting student performance data on a frequent basis in order to analyze the effects of instruction and instructional interventions. In this era of educational accountability, it is imperative that teachers know when an instructional program is effective, and how to use this knowledge to improve student performance.

Several research studies have addressed the combined effects of CBM and consultation. Fuchs, Fuchs, Hamlett, and Stecker conducted a study (1991) in which thirty-three teachers were randomly assigned to three treatment groups: (a) CBM, (b) CBM plus consultation, and (c) no treatment. After 20 weeks, student achievement data were aggregated and analyzed. Results indicated that teachers in the CBM groups appeared to revise students' instructional programs more frequently than did teachers in the no treatment group. Teachers in the CBM plus consultation group affected the most student achievement. These results extended earlier research on teacher planning conducted by Putnam (1987) who suggested that the nature and quality of instructional revisions may be enhanced by a combination of systematic ongoing assessment and consultation.

In Project OUTREACH we employed a behaviorally-based model of consultation consisting of formal training sessions and 1:1 consultation meetings. Participants in Project OUTREACH attended three workshops throughout the school year and learned to use CBM. At the first workshop, teachers and educational assistants (EAs) were introduced to CBM, and

learned how to format materials, collect data, and graph results (see Appendix A). At the second workshop, teachers and EAs presented their graphs to the large group and learned to use graphed results to make data-based instructional decisions (see Appendix B). At the final workshop teachers and EAs shared their graphs with the large group and were presented with new information on error analysis (see Appendix C). Between workshops, consultants met monthly with participants in their classrooms to support instructional efforts. While the content of consultation meetings was individualized to each teacher's needs, the procedures were systematic and premised on seven fundamental attributes associated with applied behavior analysis (Baer, Wolf, & Risley, 1968, in Sugai & Tindal, 1993) as described below:

1. Procedures were applied and focused on socially important and relevant problems.
2. Approach relied on observable behavior.
3. Evaluation procedures were used to determine effectiveness of intervention.
4. Approach was technological, emphasizing clear and detailed descriptions of interventions and teaching procedures.
5. Approach was conceptually systematic and procedures were used that originated in learning theory.
6. Procedures were investigated for their success in producing useful change in behavior.
7. Generalizability of procedures was important, emphasizing use of skills across contexts.

In the applied behavior analysis model, success is based on observable improvement in both the teacher's instruction and the student's performance levels (Heron & Harris, 1982).

Similarly, our consultation services were provided with the expectation that changes would be apparent in both teacher and student behavior.

Implementation Procedures During One School Year

Generally, behaviorally-based consultation approaches include five steps: (a) request for assistance, (b) data collection, (c) problem analysis, (d) intervention, and (e) evaluation and follow-up. In Project OUTREACH, we used these five steps to guide our interactions with teachers; however, we also allowed ourselves the freedom to step outside of the theoretical model if it didn't align with practical issues. In the following sections we describe our model of consultation.

Request for assistance. To ensure that those who were interested in CBM training knew of its availability, consultants distributed written information to school administrators in four school districts. Information included a brief description of the project's purpose, as well as time commitments and perceived benefits of participating (Appendix D). In traditional consultation models, the teacher contacts the consultant with a specific need for consultation services. In contrast, we contacted superintendents and principals, who recommended teachers participate in the project. In order to replicate the model in different school districts and to ensure administrative support, principals were asked to recommend teachers who they felt would become proficient with Curriculum-Based Measurement, and in turn, share their training with peers. A disadvantage was that some teachers were not as interested in the consultation services provided as were other teachers. It is possible that if these teachers had specifically requested consultation services for problems they had identified with their students, they may have had more ownership in the consultation services, and implemented more of the educational interventions discussed.

We also established two selection criteria for students: consistent attendance and difficulties with reading. We found this caveat to have advantages and disadvantages. The advantage was that the students selected by the teachers were a more homogenous group; all had reading problems. This way, as consultants, we pooled our resources to develop materials, brainstorm interventions, provide in-service training, and problem solve issues related to reading assessment, instruction, and interventions. The disadvantage was that two teachers were more interested in collecting writing data than they were in collecting reading data, and our project was not designed to accommodate their interests.

In one unique situation, ownership in project outcomes was strengthened when a first-year principal participated in the consultation, along with a teacher and an educational assistant. The principal attended all trainings, helped collect student data and participated in monthly consultation meetings. The somewhat unique composition of this team resulted in communication and collaboration about teaching that transcended stereotypical roles associated with school staff positions. Everyone won. The teacher and educational assistant were happy to have another adult helping with the project, the principal learned more about Curriculum-Based Measurement, and students made good reading gains as well as developed relationships with a new principal.

Data collection. Four consultants provided services to 15 teachers and 5 educational assistants during the first year of the project. Early in the school year, all participants attended a training to establish procedures for data collection. Procedures were shared on how to collect reading data and graph it. To follow up, consultants met with teachers and educational assistants and reviewed graphed data. The graphed data was used to (a) identify students who were in need of instructional interventions, (b) monitor student progress, and (c) assess the impact of various

interventions. Student graphs were also used to monitor teachers' skills in collecting and graphing data. Teachers and consultants worked together for several months on the process of collecting, graphing, and understanding the meaning of data.

The process of graphing data required the resources of personnel (teacher or educational assistant), time, and materials (reading passages, graph paper). Having limited resources can be a barrier to consultation (Reppucci & Saunders, 1974). This, in fact, was the case for one teacher in particular. She reported that she did not have the time or personnel to monitor the reading progress of her students on a weekly basis. Educational assistants at the school had other obligations and were not available for assistance in this task. Meanwhile, students in the teacher certification program at the participating university were in need of authentic classroom experiences, especially in the areas of progress monitoring, summative assessment, and instructional interventions. A consultant used this combination of circumstances to engage in creative problem solving. A preservice teacher from the university was paired with the classroom teacher. She helped the classroom teacher by performing the following activities: a) timing four students each week, b) maintaining graphs, c) meeting with classroom teacher to discuss problems/issues, and d) sharing graphs with the teacher. In addition, the preservice teacher provided supplemental reading instruction to the small group of selected students as part of the established instructional intervention. The classroom teacher taught whole-group reading lessons, attended our in-service trainings, and met monthly with her consultant. She did not administer oral reading timings nor did she graph student data.

The model described above had advantages and disadvantages. The clear advantage was that the classroom teacher's time was protected, while she was still able to participate in the project. One disadvantage to this model was discovered at the end of the school year. Because

the classroom teacher was not actively involved with graphing students' data, she realized that she did not rely on graphs to monitor students' progress as often as other participating teachers. At times, monthly consultation visits were the only times the classroom teacher analyzed student graphs for progress toward their goals. At the end of the school year, the classroom teacher concluded that in the future, she would work with the selected students. If a preservice teacher were to work in her room, the preservice teacher could assist with other classroom tasks while the classroom teacher assessed and graphed the progress of the selected students.

Problem analysis. At the second in-service training, which took place at a local educational conference, consultants provided instruction on how to analyze data patterns in order to make decisions about instruction (see Appendix B). Participants at this training session were also given an opportunity to discuss and analyze their collected data. While some teachers seemed apprehensive about sharing their graphs with their peers, by the end of the conference session, they reported feeling validated in their attempt to use CBM, motivated to try new things, and proud of their accomplishments. This experience seemed to strengthen teacher ownership in the project.

In the months that followed, consultants continued on-site visits and provided individualized suggestions, feedback, and encouragement, but played a lesser role in diagnosing problems and prescribing interventions. This approach is consistent with Caplan's model of consultation, whereby the expertise of the consultant is transferred to the consultee in order to address current problems, while increasing the consultee's effectiveness in solving similar problems in the future (Mendoza, 1993).

Interventions. By this point in Project OUTREACH (late winter), teachers and educational assistants were proficient in data collection and analysis. The content of consultation

meetings thus shifted from how to graph data to how to use the data to improve instruction. At this point in the project, consultants began discussing trends in data with teachers, and as a team, brainstorming recommendations for specific instructional interventions when students' were not meeting their targets. Teachers were responsible for choosing (or designing), implementing, and interpreting the effectiveness of specific interventions. Consultants provided information to teachers on research-based interventions that matched observed data patterns, and teachers provided information to consultants on the practicality of implementing interventions in their classrooms. The nature of the relationship moved from consultative to collaborative and the focus of the meetings moved from teacher needs to student needs.

Selecting appropriate interventions involved both the consultant and the teacher. The consultant's role in the process was to inform the teacher of research-based interventions, but the teacher ultimately selected interventions that matched each student's needs and were feasible to implement. Consultants observed several interesting scenarios develop as teachers implemented interventions with their students. For example, in one case, a teacher was concerned with a student's obvious lack of progress. Hypothesizing that the student's slow reading rate might be due to a visual problem, the teacher decided to increase the font size of the reading passages the student was expected to read. The student's performance did not significantly improve as was apparent in the graphed data. The teacher concluded that increased font was not effective for this particular child. During a consultation meeting, the teacher realized that her "experiment" with larger font was an example of data-based decision making as she used data to intervene as well as to evaluate the effect of the intervention. Obviously, she discontinued use of the larger font and used her energy to brainstorm other, possibly more effective, instructional interventions.

Evaluation and follow-up. The final step in a behaviorally-based consultation model is evaluation and follow-up. In Project OUTREACH, two evaluative measures were used to index the effectiveness of our consultation procedures. First, student graphs were a direct indication of student and teacher successes. Second, end-of-the-year evaluations completed by participants provided indirect data related to the perceived quality of consultation services.

Reading rate targets were set for 69 students. Of these students, 44 met their reading fluency goals (64 %) as reported by teachers during the final consultation visit (see Appendix E). A success rate of 64% was not as high as we had anticipated, but it demonstrated a fair amount of growth, especially when considering the low reading skills of participating students. Importantly, those students not meeting their goals still made moderate to strong gains in reading rate. Graphed data was also used to evaluate skills acquired by teachers and whether application of these skills affected student performance. The primary focus was on determining whether teachers intervened when student progress waned and whether or not the interventions' teachers employed resulted in increased oral reading rates.

We found that a large majority of teachers intervened when student performance dropped as illustrated by the graphs included in Appendix F. In this case, when student performance dipped, the teacher employed a "second reading" intervention resulting in an overall positive trend for all three students. Although some teachers were more successful at choosing effective interventions than were other teachers, most student graphs showed increases in oral reading rates under the intervention conditions as compared to the "baseline" conditions.

Our third set of evaluation data was collected during the final in-service training of the year. Sixteen participants completed a set of questions using a Likert Scale (5 point rating scale) and a set of open-ended questions to evaluate consultation services as well as their experiences in

the project (See Appendix G). Teachers responded most favorably to questions about their satisfaction with consultation services (mean = 4.6), and least favorably, although still positive, to questions related to material preparation and use (mean = 4.1). Teachers were also satisfied with formal training sessions (mean = 4.3). Overall, participants seemed pleased with the project outcomes. In fact, 15 of 17 teachers indicated their interest in participating in the project for an additional year. In Chapter Four we share some specific comments made by teachers.

Consultation Efforts as a Cycle

The steps described above provide a general outline of our consultation activities. But, looking more closely at our model we realized that each consultation meeting was part of a four component cycle of scheduling, pre-planning, meeting, and following-up. We detail each component in this cycle in the following four sections.

Scheduling monthly visits. A calendar of events was distributed among teachers and administrators at the beginning of the school year so everyone was aware of the schedule (see Appendix H). At each consultation meeting, a meeting date for the following month was confirmed. Also, prior to each visit, consultants sent meeting reminders and agendas to schools. As a result of these steps, very few meetings needed to be rescheduled.

Several of the sites for this consultation project were not local. In fact, three schools were located 60 miles from the participating university. While it seems an obvious disadvantage to travel so far for consultation visits, the travel time turned into an advantage. Two consultants worked at these distant sites and they scheduled the majority of their consultation visits on the same day. Then, they used the drive to problem-solve issues they had with their teaching teams and brainstorm ideas for future visits. Traveling together provided uninterrupted time for the consultants to collaborate and share ideas and was seen as an advantage to the model.

Teachers at individual school sites accommodated consultants' time by remaining flexible in scheduling visits. For example, in school districts with multiple participants, consultants tried to meet with more than one team during each visit. Multiple team meetings were accomplished by scheduling meetings before and after school hours, as well as during lunch breaks or preparation periods. Financial compensation was provided to participants when they were asked to meet outside of contracted hours. At times, consultation teams were quite creative in scheduling meetings. For example, sometimes teachers needed to visit the university, so consultants met with teachers on campus, or at a nearby coffee shop.

Pre-planning. One strength of our model was the opportunity for consultants to meet monthly as a group. At these meetings, key issues related to the project were discussed as well as the problem-solving of issues related to individual school sites. Importantly, we came to a consensus as to what our "next-step" would be since it was the first year of the project. Each consultant provided the project with unique knowledge, skills, and experiences that were drawn upon in order to generate instructional interventions and help solve problems. Meetings were also the time for sharing success stories and supporting each other in our efforts.

Consultants also engaged in pre-planning by sending agendas to teachers and EAs in advance of meeting dates. Agendas included items that teachers' requested in previous consultation visits, as well as new information that consultants planned to share. Time to review student graphs was a part of every agenda. Teachers were asked to add items to the agenda and to request materials of the consultant. The primary advantage of distributing agendas in advance was that consultants and teachers were better prepared for the meetings and were prompted to stay on task.

One of our goals as consultants was to provide teachers with appropriate materials to

measure students' reading progress. This is another capacity where preservice teachers, who needed to work in classrooms as part of their certification obligation, were very helpful. In addition to teaching and collecting data in the classroom, preservice teachers assisted in developing materials for classroom teachers. Participants found this arrangement advantageous because they had easy access to necessary materials. Preservice teachers also benefited from this partnership as they were able to create sets of materials for themselves.

Meeting. Each meeting focused on the needs of individual teams; however at 3 different times during the year, consultants developed supplementary materials to be shared with all participants (Appendix I). Materials were developed in response to participants' requests for information or in response to specific needs identified by consultants.

Consultation meetings centered on the agenda and students' reading progress as detailed in their graphs. At most meetings, student graphs were reviewed, progress discussed, and if necessary interventions designed. Oftentimes the graphs served as a springboard to larger issues related to reading curriculum and instruction. Examples related topics included benefits of ability grouping for reading instruction, research-based reading curricula, reading comprehension strategies, and use of technology for instruction as well as record keeping. These discussions provided the needed context for the seemingly narrow focus on graphing students' oral reading rates.

We only had one hour to meet with teachers; therefore, it was important that our discussions remained focused on reading instruction and assessment. Understandably, at times participants tended to drift off-topic. As consultants, we attempted to maintain the delicate balance between being personable and being professional. Building and maintaining rapport is an important first-year goal in any project, but with a limited amount of time for discussions, we

wanted to make efficient use of everyone's time. Oftentimes, consultants discussed the "art" of keeping meetings focused during our group pre-planning sessions.

Following-up. After each meeting, summary notes were typed and copies were emailed to teachers and consultants. Summary notes revisited the topics discussed that day, outlined the tasks each person was to accomplish before the next meeting, and stated the next meeting date and time. Although all of the consultants completed summary notes, some were not completed in time to share with teachers and educational assistants. Discussions during our pre-planning meetings stressed the usefulness of these notes, and consultants that didn't share notes with project participants tended to experience more communication problems.

Summary

In Project OUTREACH, we used a behaviorally based model of consultation to frame our activities. Researchers have stressed the importance of local context, teacher ownership, and sustained involvement in successful professional development activities, and we know that instructional and assessment strategies learned in isolation will more likely be implemented when follow-up support is provided. We used this knowledge to organize our consultation efforts. It is important to note that our training and consultation efforts were premised on research but we often engaged in creative problem solving to make the research-to-practice connection.

Chapter Four:

Teachers' Voices

In this chapter we share teachers' descriptions of the project, including how they used their new knowledge and skills to improve student learning.

In the first section, a principal describes her involvement in the project, and how her instructional team coordinated their efforts to improve student performance. The second section is a compilation of written comments made by teachers on end-of-the year evaluations.

Section One: One Team's Approach to Using CBM (By: Cindy Bartman and Vicki Rankin)

In September of 1999, consultants from the College of Education approached Susan Waddell, principal of Rhododendron Elementary School and me to be a part of a federally-sponsored grant to train teachers to implement a research-based model of assessment. I am the principal at Rhododendron Primary School with 325 students, Kindergarten through 2nd Grade. I invited members of my staff to join this collaborative effort with the University in an attempt to improve our instructional and assessment practices in reading. Our goal was to monitor student progress in reading, evaluate the effectiveness of instruction and if possible, predict students' performance on statewide, performance assessments.

Three staff members showed an interest in participating: Vicki, a 1st/2nd grade teacher, Julee, a Title I teacher, and Dee, an Educational Assistant. In October, consultants working on this grant, Project OUTREACH, invited us to a Project Overview and Materials Training. Prior to this meeting, we had no experience using Curriculum-Based Measurement (CBM) to monitor students' progress. At the October inservice, we were trained on how to implement CBM in the classroom. We were given a set of specific assessment tools and grade-level reading passages.

The training was informative, although a bit overwhelming. We still had many questions at its conclusion but were reassured that our questions would be answered as the project unfolded.

The OUTREACH team of consultants encouraged us to work in teams. As the principal, I decided to team with Vicki. Vicki and her multiage team of four other 1st/2nd grade teachers, skill- grouped students for one hour of reading instruction everyday. Vicki had 18 students with average reading skills. We decided that I would work in Vicki's reading classroom every other week, giving one-minute timings to all of the students in order to measure their oral reading fluency. Before our first week of timings, we met with our project consultant to establish each student's goal line. This was the rate of reading at which we wanted each student to reach by the end of April. Once goal lines were established, I timed the students and gave the data to Dee who created charts, graphing each student's progress. Dee then shared the graphs with Vicki, the teacher, who shared them with each student's homeroom teacher. Vicki also included the data on quarterly report cards that were sent home to parents.

Because there were 18 students in Vicki's class, we knew that we would need to utilize a team approach if we were to be successful in helping students. Julee chose to monitor the progress of fewer students, however, and she collected and charted her own data. Often times Julee met with our team and our project consultant to discuss students' progress and needed instructional interventions.

As we became more familiar with CBM, we realized we could make instructional decisions to improve student achievement. Because CBM is simple to use and provides frequent information about student performance, immediate decisions could be made about what to do with each student. We found that monitoring words read correctly in the reading curriculum was an efficient way to assess reading progress and to monitor and adjust what was taught in the

classroom. Our consultant met with our team seven times throughout the year. She encouraged our progress each visit and gave us specific help in understanding the data we were collecting. She trained us on how to create individual graphs of student progress, including how to plot expected performance. Every other week we met as a team to review each student's individual progress to determine if an intervention was needed. Vicki used the information to make decisions about individual students, but also taught specific reading strategies to the entire class to improve their reading comprehension and fluency.

We benefited in other ways because of our participation in Project OUTREACH. Our consultant was always available to assist in any way we needed her. In November, she helped us norm our school district, 2nd- 6th grade, on Oral Reading Fluency (ORF) measures. She trained our Educational Assistants in assessment procedures and monitored their accuracy. In the spring, we added DIBELS (Dynamic Indicators of Basic Early Literacy Skills) assessments created by Dr. Roland Good at the University of Oregon at Kindergarten and First Grade.

In February, an opportunity arose to apply for a federally funded reading grant through the state of Oregon focusing on grades K-3. Our collaboration with consultants from the OUTREACH Project gave us baseline data to include in our initial grant application. We asked for our consultant's help in reviewing the grant questions and we specifically included CBM. Our grant was written with oral reading fluency in mind, along with the DIBELS, early learning indicators for reading success. We were awarded a \$400,000.00 grant to improve reading instruction K-3 in the Siuslaw School District. We are excited to use this grant money to adopt a new reading curriculum that emphasizes the importance of collecting data on students' oral reading rate on a regular basis (every 8 weeks) and using this data as a baseline to inform instruction. Obviously, there were many positive outcomes related to our participation in the

OUTREACH Project, and our collaborative experiences were very beneficial to both students and staff of the Siuslaw School District.

Section Two: Participants Evaluate Their Own Learning

One of the major goals of the project was to encourage teachers and EAs to use data-based decision-making when designing instructional interventions and making educational decisions. We asked participants to briefly summarize the progress their students had made. To our satisfaction, many participants relied on data to report student progress:

For a little over five months we have been working with 15 2nd graders. They made an average increase of 25 words per minute within that time.

Of the 9 students in my classes participating in OUTREACH, all but one of them has made improvement since the beginning. The progress is varied; one student is only 3 words ahead of her initial median while another has improved by more than 20 words. The average gain is 10.1 words per minute.

Other participants referred to the use of objective measures, but did not provide exact data:

Both of the students that I worked with made progress in their CWPM. Their number of errors stayed about the same. I did an intervention with both students after spring vacation because they were consistently above their aim line and after consultation, I decided to raise their goals.

Most students have made steady progress toward goals. Students have enjoyed graphing and can evaluate their own progress. One student has not made progress in fluency. As the reading materials have gotten harder, her fluency has remained constant. This is a concern and I've made adjustments for her.

Some progress in fluency. Results seem limited; this seems in line with growth rates for secondary students. I believe that at-risk behaviors had an impact on performance and progress.

Relatively few people discussed student gains in subjective language:

The students feel more comfortable reading with someone- they actually look forward to it.

I feel that each of my students made gains this year. They were all motivated and excited to try to reach their goals.

We also asked teachers and assistants to briefly describe their experiences with Project OUTREACH. The following comments summarize the majority of teachers' and educational assistants' responses related to what worked well for them in their attempts to implement CBM in their classrooms:

What really worked was how focused we all were on reading progress. We met weekly to talk about groupings, curriculum and teaching strategies. The data truly drove instruction.

My experience was very positive. CBM was helpful to me in communicating with parents about student progress. It also helped me to make a decision about referring a student for further evaluation. Students enjoyed looking at their graphs. They were motivated to meet their goals!

The collection of weekly data really helped me be aware of any progress or needed review.

Students graphed their progress-this helped to motivate them. I was able to put my target kids into a separate reading group which enabled them to read aloud more frequently.

The graphs made it easy to keep track of progress and problems. Pep talks and rereads seemed to help. Intervening early worked the best with most children.

OUTREACH was a good opportunity to collaborate with the teacher on setting goals for our students and choosing curricula and adjusting instructional groups. Regular meetings with our consultant were helpful to keeping us on target.

We worked as a team- which helped especially with 15 students. The students seemed to enjoy the reading and watching their progress.

I found that reading fluency increased when we began to do more oral reading in class, even if the reader was a teacher. Students following along as I read a novel seemed to help their word recognition, and the students themselves read faster.

I enjoyed getting together with people from outside of our district – we have so little time to discuss ideas. There have been years when I really had no idea if my students made gains from the beginning of the year until the end. This year with norming data and bi-weekly graphs, I saw students' progress. I found it helpful to write notes about student behavior directly on the charts.

We asked teachers to share what didn't work very well when implementing CBM in their classrooms. The following comments represent all of the teacher concerns that were shared:

Students' moving in and out has been a problem, especially when they come in below the lowest group.

I am still challenged by the workability issues: (a) How to integrate this particular CBM approach in a regular Language Arts class, (b) Time management, (c) Not squeezing out, or limiting, state curriculum goals.

Initially, I struggled with a graph that would be easy for me to use. I'm still developing one that will allow for mid-year interventions that produce large swings in correct words read per minute.

We also asked teachers to describe the most important thing(s) that they had learned:

National and school norms from my district helped put each student's performance in perspective as it related to other students in the same grade. The data can be used to determine interventions and program changes.

It is getting me out of a particular comfort zone/approach. I have found it inspiring and now I need to further actualize.

Keeping a faster pace helps keep kids on track.

I learned that I needed to listen to each student read [not an assistant].

An intervention should happen each time student's reading rate falls below the goal line. Error analysis can help determine if there is a pattern to the errors. The intervention chart can be used to determine the appropriate interventions.

The graph should reflect absences and days when school was not in session. Rereads should be charted, maybe on a separate graph; one for cold readings, a second for the cold reading and the rereads.

Students who fail to show growth over a four to six week period should be referred to the Child Study Team for further evaluation.

I was reminded of the importance of keeping weekly progress data.

Finally, we asked teachers how they planned to incorporate what they had learned into their teaching in the future. Teachers had obviously thought a lot about how to better implement Curriculum-Based Measurement as is reflected in the following comments:

I will set my goals more realistically.

Students will have graphs that they complete. Data will be collected on a regular basis. Goal lines will be established for students. Data will be used at parent conferences and IEPs. Groupings will be flexible based on data.

I'll continue to keep some type of graphs related to student progress.

I think I will try and read with my lower students. We will have kids reread when they fall below their goals.

I have already decided to do more reading aloud to my students. This practice is encouraged in lower grade levels, but I know that it has worked for my high school group. I would like to learn more strategies for helping students with the words that they miss. I want to have a system to help the students recognize their errors and then learn the words.

I plan on using CBM measurement of oral reading fluency next year. I'd like to begin the first week class is in session. I'll use the results to monitor student progress, report to parents, and make decisions about instruction.

I will continue to do weekly data collection and adjust my instructional groups accordingly.

If I work as a Title I teacher, I'd like to norm in September, and chart interventions.

I'd like to do CBM in reading with my whole class (or at least the half below grade-level).

Next year, keeping charts of progress using curriculum-based measures will help when I am considering extended school year services.

We will keep scores on every student who enters the resource room both for report card writing and determining extended school year services.

Conclusion

In summary, four consultants worked with school personnel to implement CBM in the area of reading, develop and monitor interventions based on data, and discuss effective reading practices. Graphic displays of data provided information related to student learning, and interventions recorded on the graphs demonstrated increases in teacher knowledge. As consultants, we also gained valuable knowledge and skills during the length of this project. Most importantly, we learned the importance of providing sustained and systematic support to teachers as they implemented key concepts learned during inservice training. By frequently monitoring teacher behavior through the analysis of student graphs we were able to give participants direct feedback about their implementation of the instructional and assessment interventions learned during training sessions. Overall, the design of our consultation model proved to be an effective means for moving research based strategies into classroom-based practices. Project OUTREACH was successful in meeting its primary goal of training teachers and educational assistants to make instructional decisions based on an understanding of student performance data.

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Appendix A

Fall Workshop: Curriculum-Based Measurement in Reading

Project OUTREACH

Training in the Use of Curriculum-Based Measures to Monitor Student Progress

Agenda – Fall Workshop

- I. Introduction to Project OUTREACH
- II. Introduction of Participants
- II. CBM Fundamentals
 - A. General Overview
 - B. Using CBM in Reading
- IV. Small Groups
 - A. Meet Consultants
 - B. Questions and Answers
 - C. Arrange Times to Communicate
 - D. Set Meeting Dates
 - E. Professional Development Credits
- V. Oral Reading Fluency (ORF) demonstration and practice
 - A. Error Marking Practice
 - B. Error Marking Review
 - C. Student Copy of Passage
 - D. Teacher Copy of Passage
- VI. Graphing Students' Performance

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Curriculum-Based Measurement

Curriculum-Based Measurement (CBM) is a data-based approach to assessing student achievement. Data is used to make instructional decisions within both general and special education. While traditional norm-referenced tests are summative measures of a student's general achievement in comparison to the general population, Curriculum-Based Measures are simple procedures for frequent and repeated measurement of student performance over time. Student performance on each measure is compared to his or her previous performance. CBM's advantages over traditional tests include:

- Relevance to instruction by using the same or similar materials used in the classroom
- Focus on repeated measurement to monitor student progress (sensitivity to change in performance)
- Lack of ethnic bias
- Utility in charting (graphing) student progress over time
- Students' production of learned skills (actually reading) rather than selection of a correct choice in multiple-choice or true-false formats
- Feedback on the effectiveness of instructional interventions

CBM does not refer to a specific test but rather to a process of gathering information about student achievement. For example, in reading, brief passages from the student's reading text are selected. The student reads passages aloud for one minute, and the number of words read correctly is recorded. Because research shows this procedure to be highly related to general reading skills, monitoring words read correctly in the reading curriculum is an efficient way to assess reading progress.

There has been considerable research regarding the use of CBM procedures. Generally, researchers have found that CBM measures are:

- Reliable —yield consistent results
- Valid — differentiate students with disabilities from those needing remedial instruction from those who are progressing within the general education curriculum
- Provide information leading to improved instruction and improved educational programs

Creating and Administering Oral Reading Fluency Measures

Measuring a student's oral reading fluency is one strategy for collecting data using a production response that is brief (1 minute) and can be repeatedly administered. Oral reading fluency measures are based on a number of characteristics, they are:

- of short duration to facilitate frequent administration
- easy to score
- easy to produce in terms of time and expense
- sensitive to changes in students' achievement over time
- reliable and valid measures of student performance
- related to reading comprehension

Measures provide data that are useful across a range of educational decisions, including:

- screening and special education eligibility determination
- setting instructional goals and objectives
- placing students into instructional groups
- monitoring academic progress toward achievement of goals and objectives
- making necessary adjustments to, or changes in, instruction

Creating Measures

- Choose passages from either grade-level or instructional level curriculum, depending on your purpose.
- Passages should be approximately 100 words for grades 1-2
150-200 words for grades 3-5
200+ words for grades 6+
- Create an examiner's copy - numbers down right side of passage for easy scoring
- Create a student copy - passage only

Administering Measures

- Place unnumbered copy of the passage in front of the student
- Place numbered copy of the passage on a clipboard for your use. Shield it so student cannot see what you record.
- Place a stopwatch where it is easy for you to see but not distracting for student
- Say these specific directions to the student:

“When I say ‘begin,’ start reading aloud at the top of the page. Try to read each word. If you come to a word you don’t know, I’ll tell it to you. Be sure to do your best reading. Do you have any questions?”

- Say, “Start reading here.” (point to the first word of the story).
- Say “begin” and start your stopwatch when the student says the first word.
- Follow along on the examiner copy of the passage, marking the words that are read incorrectly. Use the markings for error types as best you can.
- If a student comes to the end of a passage before the time is up, point to the beginning of the passage and say to the student, “Start again.”
- At the end of one minute (60 seconds) say, “Stop” and place a bracket (]) after the last word read.

Scoring

- Count the total number of words read in 1 minute
- Subtract the number of errors (misidentification, omission, hesitation, word substitution, reversal)
- Number remaining is the Correct Words Per Minute (CWPM)

Graphing

- X Axis is the date when the probe was administered (time)
- Y Axis is the number of words read correct in one minute (CWPM)
- Record the number of Correct Words Per Minute
- Number of errors can be recorded as well

Error Marking Practice

trick thick	misidentification (students decodes word incorrectly). Slash word, and if possible, write word student said.
mom mother	word substitution (student uses word of similar meaning). Slash word, and write word substituted.

Little Martha never knew that she was almost given away when she was still a tiny puppy. She didn't know she was a runt, the smallest puppy in a litter of twelve puppies. And she didn't know that her mother was a prize hunting dog and that the people who owned her mother raised the best hunting dogs in North Carolina.

she had smiled	omission (student leaves out word). Circle word omitted
SC dog	self-correct (student says dot, then self-corrects and says dog). Write SC. Don't count as error.

Little Martha didn't understand that the owners kept only the best puppies from each litter. Those were the biggest, and the strongest. The rest were given away.

saw he said	reversal (student says "was" for "saw" or "said he" for "he said"). Mark loop around transposed part.
H left	hesitation (student doesn't decode word within 3 sec.) Slash word, tell student word, and mark H over the word.

Little Martha's first memories were ones of great happiness and terrible sadness. Her eyes were still closed when she was born and they remained closed for two weeks. During the time when her eyes were closed, Martha experienced great joy when she snuggled next to her warm mother. She also felt great despair because one of the large puppies in the litter would push her away, and Martha would lie there, shivering and cold.

had he ^ said	insertion (student adds word). Mark a caret and write in word added. Don't count as error.
very he was very	repetition (student repeats word or phrase more than once). Underline word or phrase repeated with wavy line. Don't count as error.

Martha would squeal little sounds of misery as she lay there, but her mother couldn't do much to help her. There were just too many puppies in the litter and the mother could not take care of all of them. So during her first days of life, Martha spent a lot of time aching from hunger and shivering from cold.

Error Marking Review

trick thick	misidentification (student decodes word incorrectly). Slash word, and if possible, write word student said.
mom mother	word substitution (student uses word of similar meaning). Slash word, and write word substituted.
she <u>had</u> smiled	omission (student leaves out word). Circle word omitted
SC dog	self-correct (student says dot, then self-corrects and says dog). Write SC. Don't count as error.
saw he said	reversal (student says "was" for "saw" or "said he" for "he said"). Mark loop around transposed part.
H left	hesitation (student doesn't decode word within 3 sec.) Slash word, tell student word, and mark H over the word.
had he ^ said	insertion (student adds word). Mark a caret and write in word added. Don't count as error.
very he was very	repetition (student repeats word or phrase more than once). Ignore. Underline word or phrase repeated with wavey line. Don't count as error.

Error Marking Practice

Little Martha never knew that she was almost given away	10
when she was still a tiny puppy. She didn't know she was a runt,	24
the smallest puppy in a litter of twelve puppies. And she didn't	36
know that her mother was a prize hunting dog and that the people	48
who owned her mother raised the best hunting dogs in North	59
Carolina. Little Martha didn't understand that the owners kept only	68
the best puppies from each litter. Those were the biggest, and	79
the strongest. The rest were given away.	88
Little Martha's first memories were ones of great happiness	97
and terrible sadness. Her eyes were still closed when she was	108
born and they remained closed for two weeks. During the time	119
when her eyes were closed, Martha experienced great joy when	129
she snuggled next to her warm mother. She also felt great	140
despair because one of the large puppies in the litter would push	152
her away, and Martha would lie there, shivering and cold.	162
Martha would squeal little sounds of misery as she lay there,	173
but her mother couldn't do much to help her. There were just too	186
many puppies in the litter and the mother could not take care of	199
all of them. So during her first days of life, Martha spent a lot of	214
time aching from hunger and shivering from cold.	222

- a) Time student reading orally for 1 minute.
b) Mark errors on teacher copy.
c) Place a bracket at the 1 minute point in passage.
Calculate # words read correctly in 1 minute:
e) Count total number of errors (all errors)

_____ cwpm d)
errors

Project OUTREACH

Training in the Use of Curriculum-Based Measures to Monitor Student Progress

Participant Information 1999/2000

Name: _____ School: _____

Position/Grade Level: _____ Principal: _____

Classroom Number: _____ Work Phone: _____

E-mail: _____

School Address: _____

Home Address: _____

Social Security Number: _____

Do you want professional development credit? _____ (yes or no)

Possible days/times for consultation meetings (approximately 45 minute periods):

Appendix B

Winter Workshop: Data-Based Decision Making

Project OUTREACH

Training in the Use of Curriculum-Based Measures to Monitor Student Progress

Agenda – Winter Workshop

- I. Teacher Presentations
- II. Data-Based Decision-Making
 - A. Sample graphs
- III. Instructional Interventions
- IV. Small Groups
 - A. Meet with consultants
 - B. Questions and answers

Using Oral Reading Fluency Data to Guide Instructional Interventions

Ann Finzel and Lindy Crawford

University of Oregon

Data-Based Decision Making

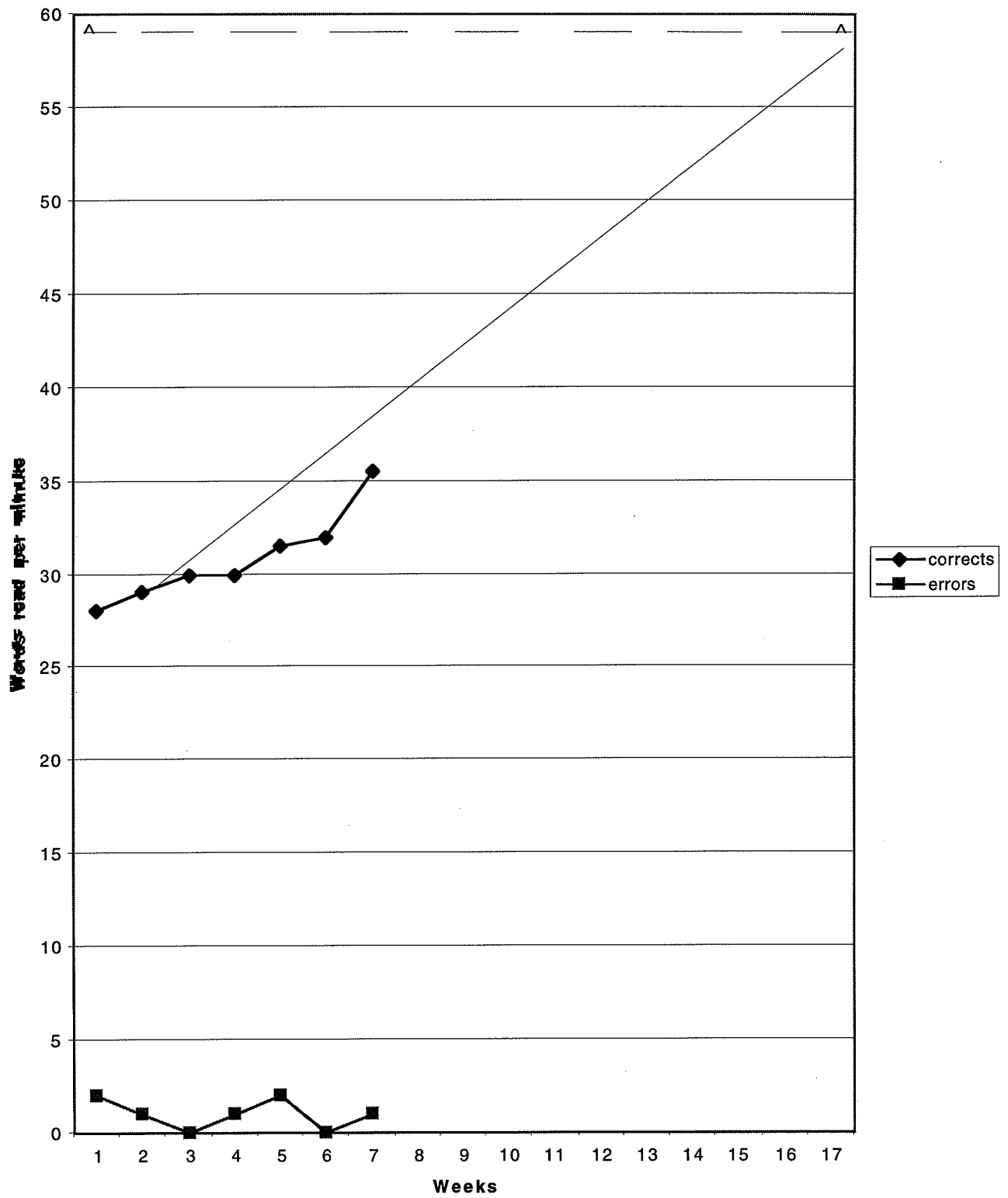
In order to monitor students' progress on academic skills, teachers often collect and chart data. For example, when monitoring students' reading rate, teachers may ask individual students to read aloud for one minute, while counting words read correctly and the number of errors made. These data are charted, and the resulting visual display is used to make instructional decisions.

Unfortunately, after charting the data, many teachers do not use the information for guiding instruction, and often times, the process of monitoring students' progress begins and ends with charting students' reading rate. Yet, research has demonstrated the positive effects of making instructional decisions based on data.

The charts on the following pages illustrate three data patterns, as well as an interpretation of each pattern and a suggested intervention. In practice, interpretations and interventions will vary according to different tasks and student characteristics. On the last page of this section, we have provided teachers with a list of simple interventions for responding to particular data patterns. Obviously, this list is not comprehensive.

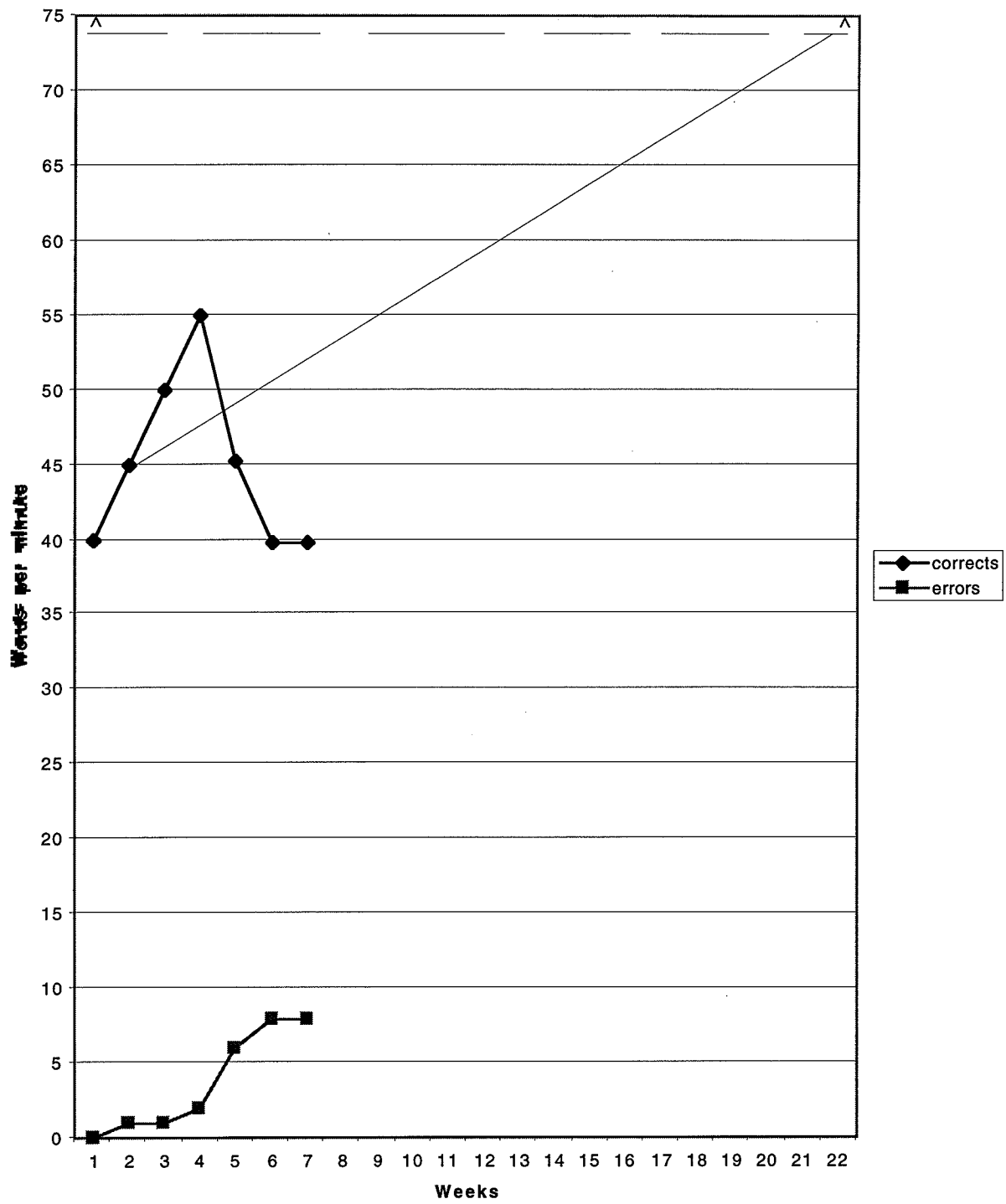
In conclusion, teachers need to do more than chart students' reading rate, they also need to analyze each student's visual display of data and use this analysis to guide their decision-making.

Oral Reading Fluency



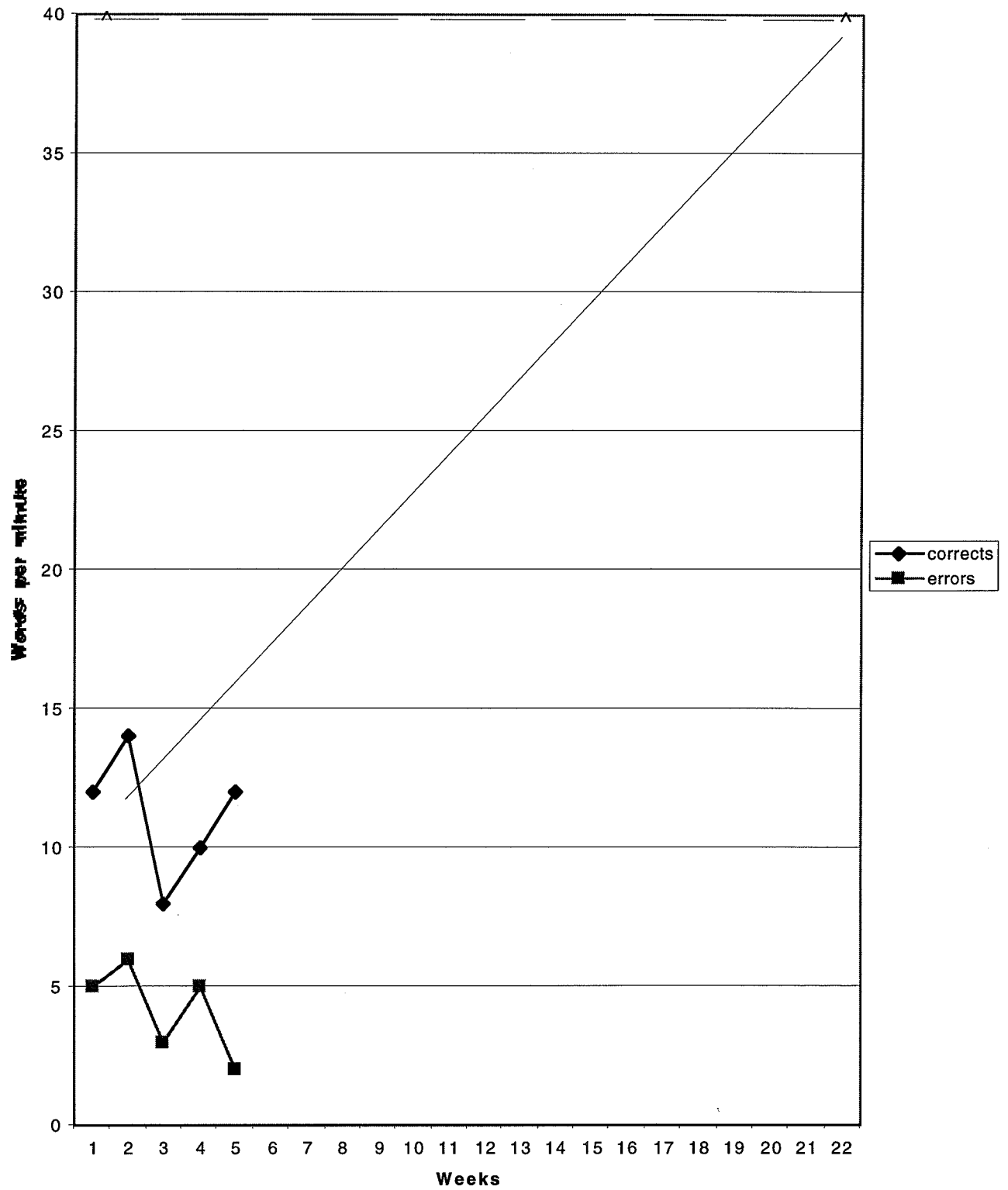
Data Interpretation: Fluency Problem

Oral Reading Fluency



Data Interpretation: Compliance Issue

Oral Reading Fluency



Data Interpretation: Acquisition Stage

Interventions Based on Specific Data Patterns

Acquisition Stage: associated with the introduction of novel material; low rate of correct responses (usually less than 20); high error rate (often above the rate of corrects); low accuracy (less than 80%)

Strategies To Facilitate Acquisition

Provide extensive explanation, modeling, demonstration, and guided practice.

Provide corrective feedback as a consequence for error responses.

Check fidelity of the program (e.g., attendance or instructional time).

Increase opportunities to respond.

Analyze make-up of student groups – size and scheduling.

Change verbal direction or signal.

Add verbal cues. Stress key words.

Add a permanent model.

Add position or color cues to instructional materials.

Slice back (as a last resort).

Fluency Problem: accuracy above 80-85%, but hasn't reached goal

Strategies To Build Fluency

Emphasize rate.

Provide directions for fluency before or during performance.

Add or change consequences to motivate fluent responses.

Provide variable consequences.

Change the reinforcement schedule. Increase ratio or interval of the schedule.

Implement a changing aim strategy, increasing the amount of behavior required daily.

Increase the number of response opportunities.

Increase practice/drill.

Compliance Issue: a sudden, downward slope of correct responses; fluctuating data points; no clear pattern

Motivational Strategies

Ask these questions: Is the skill level a correct one?

Are your criteria too high?

Are you moving on the **day** after criterion is met?

Is the student bored?

Is student in appropriate curriculum?

Is supplemental program necessary?

Change or add a motivating consequence for correct/fluent responses.

Change the reinforcement schedule.

Add or change consequences for incorrect responses.

Add a time limit for no response.

Move to a more difficult skill level. Avoid moving to an easier skill level.

Coaxing or prompting the response.

Appendix C

Spring Workshop: Error Analysis

Project OUTREACH

Training in the Use of Curriculum-Based Measures to Monitor Student Progress

Agenda – Spring Workshop

- 12:00-12:30: Lunch and Introductions
- 12:30-1:30: Teacher Presentations
- 1:30-2:15: Error Analysis
- 2:15-2:45: Discussion of First Year of Project
- a) Goal Setting
 - b) Data Collection
 - c) Uses for Data
 - d) Extending Knowledge into Next Year
- 2:45-3:00: Web-Based Resources and Break
- 3:00-3:45: Goals for Next Year
- a) Reading Comprehension Packet
 - measurement strategies
 - instructional strategies
 - b) Advanced Training
 - using technology
 - data-based decision making
 - measuring written language
 - developing classroom/school norms
 - c) Levels of Participation
- 3:45-4:00: Written Evaluation of Project

Oral Reading Fluency: Using Error Analysis to Improve Instruction

Error patterns are learned and often result from attempts to shortcut the decoding task or to avoid difficult material. Students may learn to avoid errors by simply omitting troublesome words or by substituting known words. These error patterns are actually poor decoding habits, which may be countered with direct teaching.

Students who demonstrate consistent error patterns are typically beyond initial decoding instruction. These students don't need to learn new decoding skills, but they do need to learn to recognize and change the error pattern (Howell & Nolet).

Procedure:

- Choose and photocopy the text to be used and have the student read aloud.
- Mark errors on your copy of the reading selection.
- Tally errors by category.
- Identify the categories in which most errors occur.
- Correct the pattern by providing direct instruction to decrease errors.
- List objectives, teach, and monitor changes in error pattern.

Error Types and Instructional Strategies

<div> <div>Errors →</div> <div>↓</div> <div>Instructional Strategies</div> </div>	misidentification	hesitation	omission-meaning loss	omission -no loss	word substitution	reversal-meaning loss	reversal-no loss	self-correct	insertion	repetition
Analysis & Synthesis	*	*	*							
Audio Recording	*	*	*	*	*	*	*		*	*
Chunking		*	*			*			*	*
Cloze	*	*	*			*				
Directed Reading	*	*	*			*				
Feedback	*	*	*	*	*	*	*	*	*	*
Highlight			*	*		*	*			
Modeling	*	*	*	*	*	*	*		*	*
Predict & Confirm	*	*	*			*				
Pronunciation Corrections	*	*	*			*				
Reinforcement	*	*	*			*				
Word Cards	*	*	*			*				

Instructional Strategies

- Analysis and Synthesis. Focus on specific letter-sound correspondence by providing immediate corrective feedback during oral reading. Follow-up with explicit skill instruction on indicated high frequency errors (Rubin, 1982). This method is most appropriate for beginning readers (primary grade levels and English language learners).
- Audio Recording. Make an audio recording of the student reading. Replay the tape and have the student listen for specific errors.
- Chunking. Place slashes between sentences and at breathing points to mark phrases. Demonstrate the process of grouping words into meaningful phrases and have students similarly mark passages. Ask the student to read marked passages silently and then orally, pausing or emphasizing according to markings (Choate, 1997).
- Cloze. For a reader who does not self-correct, try the instructional cloze technique. This encourages the student to think about what word would make sense in the sentence and in the context of the story (Walker, 1988). This method is most appropriate for students who are verbally fluent.
- Directed Reading. Prior to reading, present new vocabulary words. Ask students what these words mean and direct them to remember the words by their distinctive visual features. Also prior to reading, develop appropriate background knowledge so the students will understand the general setting of the story (Walker).
- Feedback. Provide feedback on the occurrence of the error pattern (Howell & Nolet).
- Highlight. Prior to reading, accentuate punctuation marks or words the student tends to omit (Howell & Nolet).
- Model Fluent Reading. Ask student to read along silently while you model fluent oral reading. As you read the passage again, have students read-along. Then, ask student to read the passage aloud (Choate).
- Predict & Confirm. Before oral reading, ask the student to predict what the story will be about. During oral reading, encourage the correction of errors that are not appropriate in context by asking the student, "Does that make sense?" (Weaver, 1980).
- Pronunciation Corrections. After oral reading is completed, go back and focus on the sentences in which the errors occurred and have the student reread them. If the student repeats the mistakes, have the student listen while you read, modeling the error. Ask what is wrong and how to correct it. Discuss the appearance, pronunciation, and meaning of the words (Choate).

- Reinforcement. Reinforce the student for decreasing the number of errors or increasing self-corrections (Howell & Nolet).
- Word Cards. Put words in short phrases on flashcards and drill (Howell & Nolet).






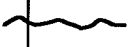
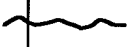
Choate, J. (1997). Successful Inclusive Teaching: Proven Ways to Detect and Correct Special Needs. Needham Heights, MA: Allyn & Bacon.

Howell, K. & Nolet, V. (2000). Curriculum-Based Evaluation: Teaching and Decision Making. Belmont, CA: Wadsworth

Rubin, D. (1982). Diagnosis and Correction in Reading Instruction. NY, NY: Holt, Rinehart and Winston.

Walker, B. (1988). Diagnostic Teaching of Reading: Techniques for Instruction and Assessment. Columbus, OH: Merrill.

Weaver, C. (1980). Psycholinguistic and Reading: From Process to Practice. Cambridge, MA. Winthrop Publishers.

misidentification 	hesitation H	omission 	substitution 	reversal 	self-correct SC 	insertion 	repetition 

Nature Spy	2
I like to go outside to look around and discover things. To	14
take a really closer look, even closer and closer.	23
My mother says I'm a curious kid. She calls me a nature spy.	36
Sometimes I look so closely, I can see the lines on a shiny	49
green leaf, or one small acorn on a branch, or seeds in a pod.	63
I notice the feathers on a bird, or the golden eye of a frog.	77
When you look closely, things look so different-like the bark	88
of a tree or an empty hornet's nest, the seeds of a sunflower, or even	102
a rock.	105
Sometimes there's a pattern, like ice on a frozen pond, or a	117
spider's web, or a butterfly's wing.	123
Everything has its own shape, color, and size. Look closely at	134
a turtle's shell, or a dog's fur, or even raspberries, or kernels of	147
corn.	148
No matter where you look, up, down or all around, there's	159
always something to see when you're a nature spy!	168

WEB RESOURCES on ASSESSMENT

http://

Organization	Address
UO: Behavioral Research and Teaching	brt.uoregon.edu
National Center on Educational Outcomes	www.coled.umn.edu/NCEO/overview/overview.html
Center for Research on Evaluation, Standards, and Student Testing	cresst96.cse.ucla.edu
Educational Resources Information Center	ericae.net/Eric
Northwest Regional Educational Laboratory	www.nwrel.org/eval/toolkit98
UO: School Psychology Department	Interact.uoregon.edu/dsecr/cbmweb/index.htm
UO: DIBELS assessments	idea.uoregon.edu/~dibels/

WEB RESOURCES on CURRICULUM AND INSTRUCTION

http://

Northwest Regional Educational Laboratory	www.nwrel.org/eval/writing/resources.html
Northwest Regional Educational Laboratory	www.nwrel.org/eval/reading/acrosshtml
Council for Exceptional Children +	www.ideapractices.org/law and regs.htm
National Center to Improve the Tools of Educators	idea.uoregon.edu/~ncite/
Teachers Network	teachers.net

Appendix D

Information Sheets for Administrators

Project OUTREACH - Superintendents

Training teachers and paraprofessionals in the use of curriculum-based measures to monitor student progress

The purpose of this federally-sponsored grant is to train teachers in the use of a research-based model of assessment capable of monitoring student progress, evaluating the effectiveness of instruction, and predicting students' performance on statewide, performance assessments.

Our intent is to provide teachers with enough training and support to successfully implement curriculum-based measurement (CBM) in their classrooms, as well as train other teachers in these techniques during year two of the study. We also realize the need for paraprofessionals, responsible for the delivery of instruction, to receive training. Therefore, the focus of our efforts will concentrate on teachers as well as paraprofessionals.

This is a three-year project, requiring each district to participate for at least two years. The training will involve an average of 3 teachers and 3 paraprofessionals for each school district. There are two primary benefits for school districts participating in this project: (a) information derived from the curriculum-based measures can be used to predict future performance on the Oregon Statewide Assessment, (b) trained teachers and paraprofessionals capable of training others within the district on the use of this measurement system.

Commitment:Two years

Participants: Elementary or Middle Schools

One or two teachers for each participating school

Paraprofessionals responsible for small group instruction

Activities: Two 1/2 day training sessions held at UO campus

One full day training session held at UO campus

Regular on-site consultation with teacher and paraprofessional

- Benefits:**
- Curriculum-based measures are predictive of performance on Oregon Statewide Assessment
 - IEPs aligned with state content standards
 - Ongoing site-based consultation
 - Packets of grade-level, subject specific assessment tools
 - Professional development: use of technology to monitor students' progress
 - Paraprofessional training
 - Development of local norms
 - Increased parent involvement
 - Professional development credit if desired
- Costs:**
- Grant money will cover costs of substitutes on training days, as well as compensate paraprofessionals for missing days. It will also pay for paraprofessionals to attend on-site consultations.

Project OUTREACH - Principals

Training teachers and paraprofessionals in the use of curriculum-based measures to monitor student progress

The purpose of this federally-sponsored grant is to train teachers to implement a research-based model of assessment capable of monitoring student progress, evaluating the effectiveness of instruction, and predicting students' performance on statewide, performance assessments.

Our intent is to provide teachers with enough training and support to successfully implement curriculum-based measurement (CBM) in their classrooms, as well as train other teachers in these techniques during year two of the study. We also realize the need for paraprofessionals, responsible for the delivery of instruction, to receive training. Therefore, the focus of our efforts will concentrate on teachers as well as paraprofessionals.

Commitment: Two years

Participants: One or two teachers

One or two paraprofessionals responsible for small group instruction

Activities: Two, 1/2 day training sessions held at UO campus

One full day training session held at UO campus

UO personnel will conduct regular on-site consultation with teachers and paraprofessionals

Benefits: Curriculum-based measures are predictive of performance on Oregon Statewide Assessment

IEPs aligned with state content standards

Ongoing site-based consultation

Packets of grade-level, subject specific assessment tools

Professional development: use of technology to monitor students' progress

Paraprofessional training

Development of local norms

Increased parent involvement

Professional Development Credit if desired

Costs: Grant money will cover costs of all substitutes on training days, as well as compensate paraprofessionals for missing days. It will also pay for paraprofessionals to attend on-site consultations.

Appendix E

Form for Collecting Student Data

Project OUTREACH
training in the use of curriculum-based measures to monitor student progress

Final Consultation Visit

Teachers: _____ _____ _____	Date: _____ School: _____
Consultant: _____	Grade(s): _____

Student Initials	Beginning Performance Level (median score for first 3 days)	Ending Performance Level (median score for last 3 days)	Initial Goal Met? (yes or no)

What percentage of students met their initial goals?

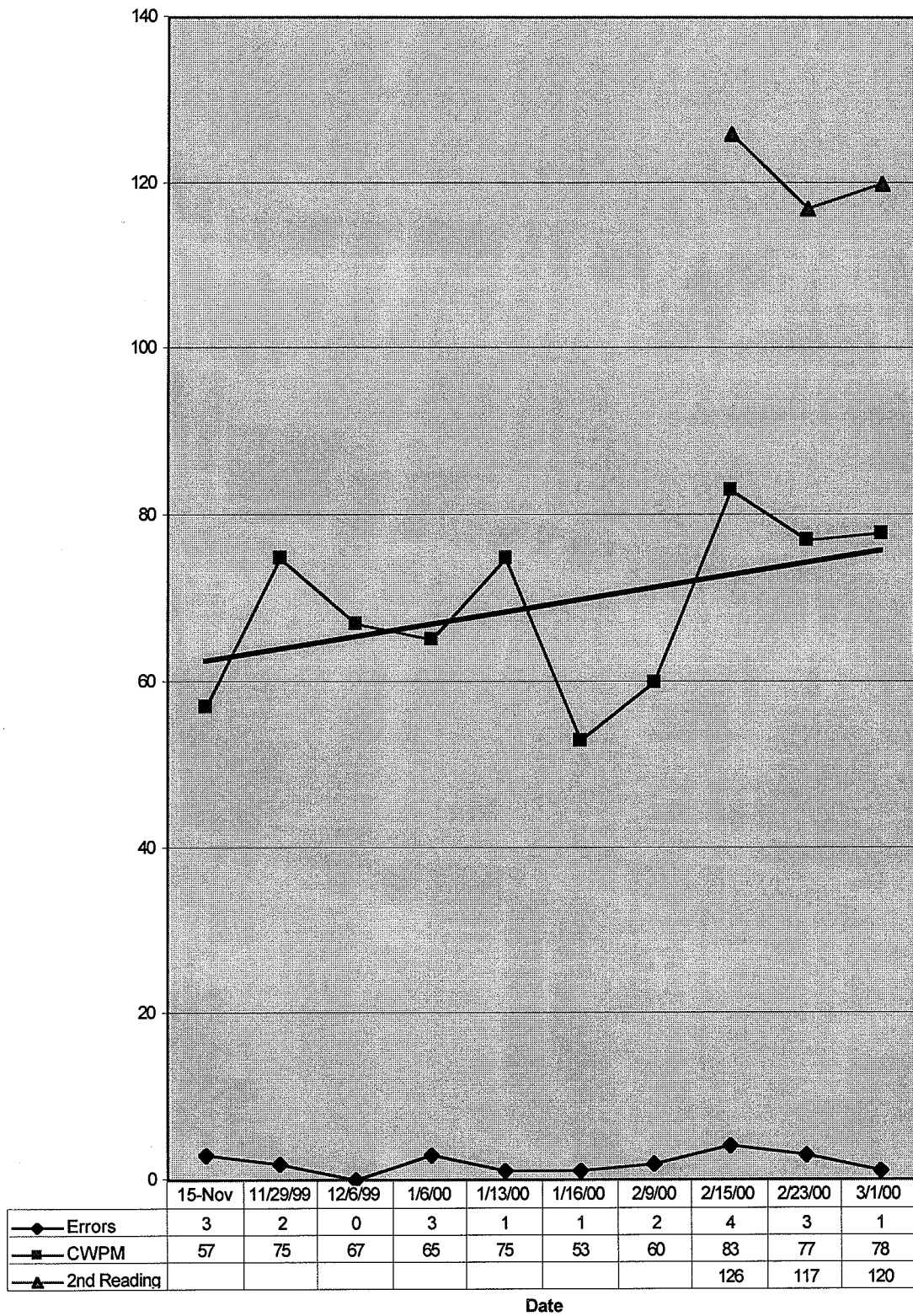
Summarize the progress that students have or have not made.

Describe your satisfaction with student progress in your Reading group(s).

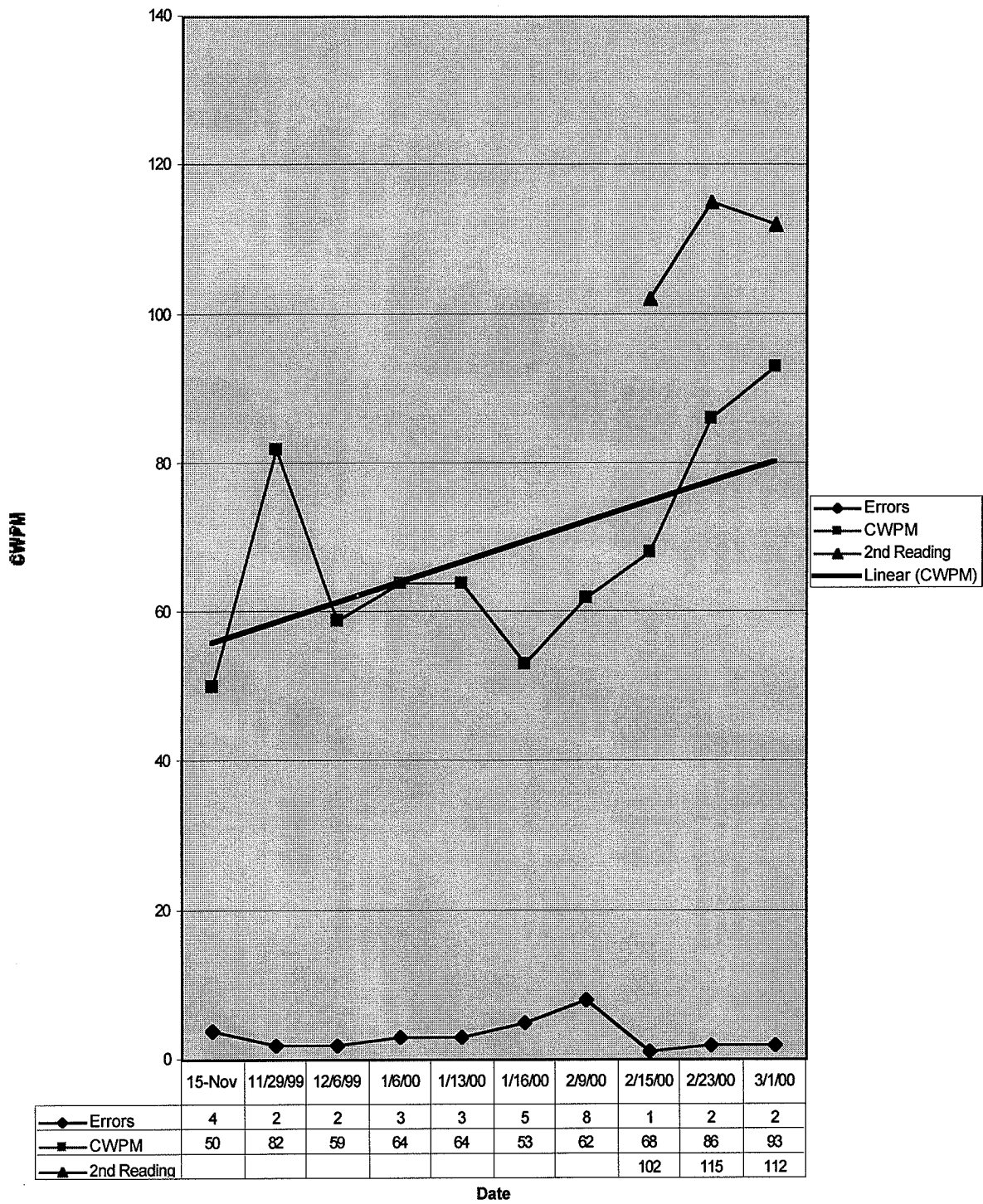
Appendix F

Sample Student Graphs

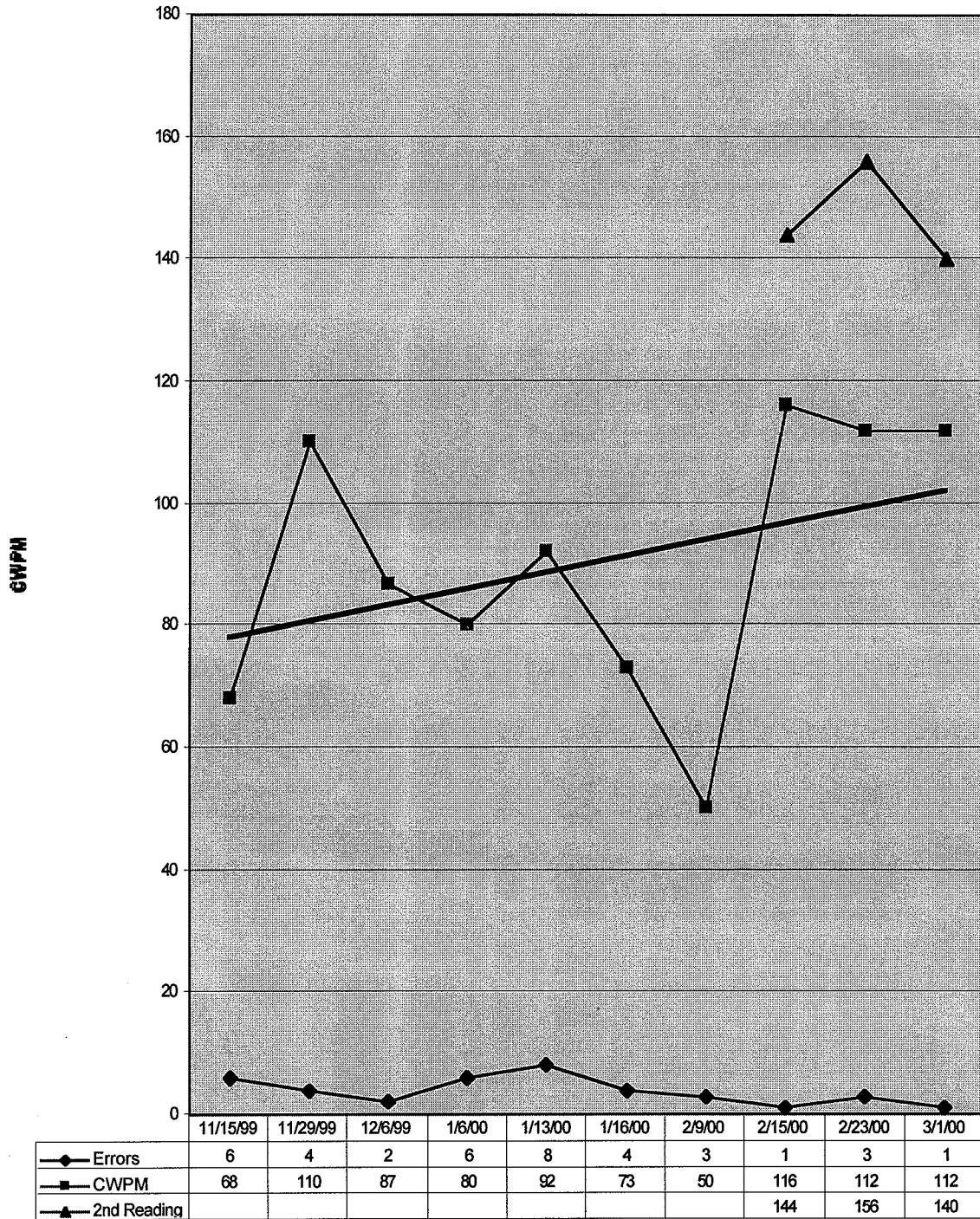
Skylar



Mickey



Jay



Appendix G

Evaluation Questions

Evaluation – Project OUTREACH

Consultant: _____

School District: _____

Please check your level of agreement with each of the statements below.

Consultation

1. The consultant(s) presented information in a clear, organized, and level-appropriate manner.

strongly disagree	disagree	neutral	agree	strongly agree
1	2	3	4	5

2. The consultant was knowledgeable of the subject matter.

strongly disagree	disagree	neutral	agree	strongly agree
1	2	3	4	5

3. The consultant responded adequately to my questions.

strongly disagree	disagree	neutral	agree	strongly agree
1	2	3	4	5

4. The consultant was innovative and creative in problem solving.

strongly disagree	disagree	neutral	agree	strongly agree
1	2	3	4	5

5. When I have problems, the consultant responded in a timely fashion.

strongly disagree	disagree	neutral	agree	strongly agree
1	2	3	4	5

6. The consultant met with me at times convenient to me.

strongly disagree	disagree	neutral	agree	strongly agree
1	2	3	4	5

7. The consultant spent a sufficient amount of time in meetings with me.

strongly disagree	disagree	neutral	agree	strongly agree
1	2	3	4	5

Materials

1. The materials used were helpful and easy to understand.

strongly disagree	disagree	neutral	agree	strongly agree
1	2	3	4	5

2. The training materials were up-to-date and applicable to school settings.

strongly disagree	disagree	neutral	agree	strongly agree
1	2	3	4	5

Training Sessions

1. The fall training session (introduction of project, training in oral reading fluency) was useful.

strongly disagree	disagree	neutral	agree	strongly agree
1	2	3	4	5

2. The winter training session (two presentations at the Oregon Conference) was useful.

strongly disagree	disagree	neutral	agree	strongly agree
1	2	3	4	5

3. The spring training session (error analysis, discussion of project, goals for next year) was useful.

strongly disagree	disagree	neutral	agree	strongly agree
1	2	3	4	5

4. I would like the opportunity to attend the Oregon Conference as a part of this grant project again.

strongly disagree	disagree	neutral	agree	strongly agree
1	2	3	4	5

5. The information from this project helped me to make data based decisions for targeted students in the area of reading.

strongly disagree	disagree	neutral	agree	strongly agree
1	2	3	4	5

6. I was compensated adequately for my work on this project (substitutes, UO credit, money).

strongly disagree	disagree	neutral	agree	strongly agree
1	2	3	4	5

Briefly describe your experiences with OUTREACH project. What worked? What didn't work? What did you learn?

How will you incorporate what you learned during this project into your teaching next year?

Please write any additional comments below about your satisfaction with the project, including any suggestions to help improve the project next year.

Appendix H

Calendar of Events

Project OUTREACH:**Calendar of Events**

Dates	Activities
Mid-October	1/2 Day Workshop: Project Overview Introduction to CBM Materials Training
Late October	On-site consultation with teacher and paraprofessional
November	Consultation
December	Consultation
Early January	Consultation
February	1 Day Workshop: Keynote Speaker Teacher Presentations Data-Based Decisions
March	Consultation
April	Consultation
May	1/2 Day Workshop: Poster Session Error Analysis Evaluations
June	Consultation

Appendix I

Consultation Meetings: Forms for First, Second, and Fourth Meetings

Project OUTREACH
training in the use of curriculum-based measures to monitor student progress

First Consultation Visit

Teachers: _____

Date: _____

School: _____

Consultant: _____

Student name: _____ Grade: _____

Subject Area: _____ Performance Level: _____

Current Curriculum:

Assessment history (OSA scores; work-samples; IEP information; classroom-based measures):

Instructional interventions previously attempted:

General goals for the student:

Curriculum-based measurement plan (who collects data; how often; how charted, etc.):

Project OUTREACH
training in the use of curriculum-based measures to monitor student progress
Second Consultation Visit

Describe reading instruction as it takes place in your classroom:

Group size:

Group abilities:

Instructional materials:

Lesson design (read aloud, independent work)

Strengths of this design:

Weaknesses of this design:

How do you know if students are making progress? Becoming better readers?

What kinds of information do you collect about student performance?

Project OUTREACH

training in the use of curriculum-based measures to monitor student progress

Fourth Consultation Visit

Interventions to Increase Reading Fluency

- Students who are accurate but slow readers may know a particular reading strategy, but not employ it efficiently because it has not been learned to fluency (Carver, 1992).
- Lessons designed to build fluency typically use rapid paced drill and practice with material on which the student is 90-96% accurate (Howell, Fox & Morehead, 1993).
- It is important to remember that you are building fluency, not having a race, when you conduct rate-building lessons. Try to promote ease of reading at the same time you are promoting speed.
- During lessons to increase reading fluency, errors are typically viewed as rate-induced and are ignored to the extent that error correction procedures are not used. Feedback may be given after the student reads the passage.

Repeated Reading Practice (Carnine and colleagues, 1990)

- Select a passage in which the student is accurate.
- Instruct the student to read for one minute as quickly and accurately as possible and then note the student's rate (for example, 50 words per minute).
- Set a target rate for the passage that is 20% to 40% above the initial rate of the student (for example, $50 \text{ wpm} \times .40 = 20$ and $20 + 50 = 70 \text{ wpm}$).
- Mark the target in the student's passage and have her reread the selection, just as before, as many times as necessary to reach the target.
- Continue this procedure on various selections until the student's average rate reaches the criterion set for her (and accuracy is maintained).

Variations of Repeated Reading Practice (these interventions can be combined)

- Listen to a taped passage, or fluent reader read the passage, read along silently, then reread the passage aloud. Repeat process increasing speed (time may be recorded).
- Read passage aloud several times, record the time for reading the passage, and try to exceed last recorded time.
- Read aloud at home for 20 minutes - end with timed repeated reading, exceeding time on each reading.
- Read aloud (to the teacher, volunteer, student tutor, or parent). Teacher or other reader models fluent reading with rate slightly faster than the student's rate, student reads alternate sentences or paragraphs.

Weekly Timed Readings

1. Administer oral reading fluency (ORF) timing to student 1 to 2 times a week.
2. Set fluency goals for passage reading (aimline on graph could indicate goal).
3. Record results on a graph.
4. Share results with students.
5. Reward student for increases in ORF.