DIRECTIONS

Technology in Special Education

Vol. 8 , No. 3 November 2001

Making a Difference in the Classroom with Early Literacy Instruction

Part Two

By Sylvia B. Smith, Scott Baker, and Sister Mary Karen Oudeans

Source: TEACHING Exceptional Children, Council for Exceptional Children, Vol 33, No. 6, JULY/AUGUST 2001

Micro Changes in Design and Delivery of Early Literacy Instruction

Emphasis on Systematic Review for Mastery and Automaticity

Similarly, as the teachers learned more about the importance of high levels of mastery, which would result in automatic and fluent responses in essential learning skills, their knowledge was validated by their daily classroom experiences. This understanding gave them a new way of thinking about reviewing previously taught material. They felt it was critical that there be sufficient review within each lesson, throughout the day, and throughout the week to help all children reach benchmark levels of automaticity with the skills they were teaching (Good, Simmons" & Smith,2001).

These changes the teachers made concerned instructional, not curricular, issues. First, none of the instructional changes replaced the curriculum the teachers were using before the project began, or altered the broad array of early literacy goals these teachers had for their students. They folded the changes into their current program; and they retained the strong focus of the program on literature, writing, and letter names.

Second, as teachers' conceptual knowledge deepened, they became increasingly excited about changing their program to obtain better learning outcomes. As they saw student learning improve, the outcomes validated their new beliefs about the extent of learning goals possible for their students. This is the way the kindergarten teacher put it: "Before, I did not

Happy Thanksgiving

Inside

know the children could learn so much in kindergarten. Now I have changed my expectations for all the children. It is really exciting because almost all children meet those high expectations. I am energized because I can see that what I do makes the difference."

Implementing an Ongoing Assessment System to Inform Instructional Decisions

Establishing Measurable Goals

One requirement of the professional development project was establishing a set of measurable literacy goals for student performance, accompanied by an ongoing assessment system that indicated how much progress children were making in reaching those goals. Our hope was that we could both collect the data we needed for purposes of the grant. and also model an effective way for the school to collect data on how well their students were learning.

Initially, the assessment data we collected did not align with the philosophy of the school's staff. One significant issue was that teachers did not believe it was appropriate to test children on tasks, they did not have ample instructional opportunities to learn. Over time, however, teachers saw that some students did well on the assessments despite having only minimal instruction; and other students continued to do poorly despite having received considerable instruction. Teachers began to appreciate the availability of data before, during, and after instruction as a way to better gauge student progress.

Eventually, the teachers discontinued many of their traditional methods of student assessment and chose new measures designed to efficiently provide information on student progress in key early literacy areas. These areas included recognizing the first sound in words, segmenting words into phonemes, and knowing letter names and sounds. We measured these skills using the DIBELS assessment system (Good & Kaminski, 2000), and by the Yopp-Singer Test of Phonemic Segmentation (Yopp, 1995).

Implementing Regular Testing

The school implemented a procedure whereby all children were tested in the fall, winter, and spring by the classroom teacher and the Title I literacy teacher. These two teachers pored over the data; and because they administered the measures themselves, they had a real feel for how well their children were doing and what information the data provided. The children who were struggling received testing more regularly, so the teachers had more frequent and precise information on how well instructional modifications influenced learning for these children.

The assessments not only suggested the next instructional steps to take, and for which students certain practices would be critical, but the data also provided the teachers with motivation to continue to improve. The data visually proved that the changes the teachers were making caused significant differences in learning, especially for those students who were struggling the most. Some of these changes were initially controversial. For example, information gained from ongoing assessments motivated the teachers to try ability grouping, at the suggestion of the first author, and then

DIRECTIONS

Technology in Special Education

ISSN: 1079-607X

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DIRECTIONS: Technology in Special Education is published 11 times per year by DREAMMS for Kids, Inc., (Developmental Research for the Effective Advancement of Memory and Motor Skills), a non-profit service agency and AT information clearinghouse. Annual home delivery subscription rate is $14.95 U.S., $17.95 Canadian, and $29.95 Int'l. (U.S.$). Single copies are available in the U.S. for $2.50. Add $1.00 for postage outside U.S.

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convinced them to retain ability grouping as a way to more effectively teach students with different types of needs.

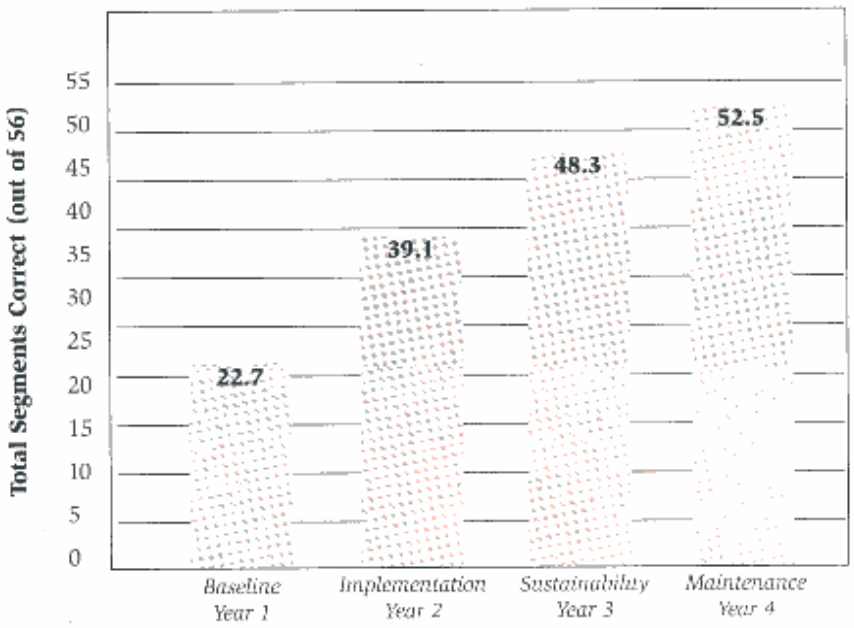
Improvement Over 4 Years

Figure 3 illustrates children's performance in the spring of kindergarten on the Yopp-Singer Test of Phonemic Segmentation over the 4 years of the project. Year 1 represents baseline, and shows the overall average performance of students in kindergarten before the teachers implemented any instructional modifications in the classroom.

Year 2 represents the most intense year of collaboration among research staff and the teachers. This included learning about the development of phonemic awareness and alphabetic understanding in kindergarten, trying out new instructional practices in the classroom, and exploring the linkages between ongoing assessments and changes in instruction. During Year 2, teachers actually initiated some of their own assessments to better understand what subtle and broad effects their instruction was having on student learning.

In Year 3, only a small amount of technical assistance was provided to the teachers. In Year 4 there was none. We believe the continued gains in student learning demonstrated in Years 3 and 4 indicate that teachers' conceptual understanding of how to achieve high literacy outcomes for all their students was deepening. By Year 4, average student performance was approaching the highest segmentation score possible on the Yopp-Singer. Our classroom observations indicated that instruction continued to improve throughout the 4 years of the project. Teachers also continued to refine the assessments they used, making them more efficient and tailored to subtle aspects of student learning.

Figure 3. Student Improvement Over 4 Years



Note: Number of kindergarten sessions across the 4 years was three in the Baseline Year, and two each for Implementation, Sustainability, and Maintenance. All students in the classroom were tested at the same time in the spring.

Challenges and Benefits of Developing Assessments

We were surprised by the positive response to assessment by these two teachers and the rest of the school staff over the course of the project. The large increase in performance from baseline to the first year of implementation seemed to lead to changes in teachers' perceptions about the role of assessment practices in teaching.

Assessment practices could, in theory, be a critical linchpin in changing early literacy instructional practices, essentially driving decisions about what constitutes effective practice and what does not. We did find challenges to widespread use of new instructional practices. Some teachers were strongly reluctant to assess kindergarten students; and most teachers lacked the time and energy to develop both improved instruction and effective assessment approaches.

There is no easy answer to this dilemma. In this project, having schools take on the implementation of their own school-based assessment approaches was optional. Nearly all the professional development time with teachers was devoted to thinking about and changing instructional practices, and not to assessment issues. For example, teachers learned about the importance of phonological awareness instruction, followed by 3-4 months of exploring research-based programs such as *Ladders to Literacy* (O'Connor, Notari- Syverson, & Vadasy, 1998) and *Phonological Awareness Training for Reading* (Torgeson & Bryant, 1994). In

addition, after learning about the potential benefit of including articulation cues, such as those that are used in *Phonological Awareness Training for Reading*, teachers began drawing attention to the placement of lips and tongue while producing sounds. During this portion of the project, the research team collected student learning data to evaluate effects and used assessment approaches that the schools could continue to use after the project ended. There was no confusion about the goal-working with teachers on changing classroom teaching. Eventually, the teachers took over the assessment portion, as well. Clearly, the two teachers discussed in this article were able to effectively balance the focus on instruction and assessment, and there is no question the data were essential in producing the common understanding in the district that Glendale's kindergarten program improved dramatically. This balance between instruction and assessment is possible in other change efforts as well, as long as all involved are mindful of how easily assessment issues tan outweigh instructional ones. In professional development projects such as this, where the goal is improving literacy instruction in the classroom, there is great benefit in getting into the classroom and addressing instructional issues as soon as feasible. The field of special education has a great deal of information about what effective early literacy practices should look like, as well as what teachers need to do to ensure that their struggling students have the opportunity to learn this information. §

References for this article can be obtained by contacting DreammsForKids, Inc.

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News from RJ Cooper

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The BIG Baby Button has been renamed to The BIG Button, because so many of you are using it for others than babies. The prices will be going up 1/1/02 from their current $69 prices. Remember, this is one of the few switches in the world that has a *built-in switch interface*, so you can plug the BIG Buttons directly into your computer. We also now offer a cordless, USB version <http:// www.rjcooper.com/big-button>.

KeyRead, our $99 screenreader, is almost ready for Windows. Expect a posting of an early version within several weeks. It's been a difficult project but I'm committing to creating an alternative to *very* expensive screenreaders that are too difficult for young blind children to operate. Bookmark the page <http:// www.rjcooper.com/keyread> to stay apprised.

For more information or to find out about our other products and services, please visit our website at: www.rjccoper.com

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Using the computer for teaching literacy to older struggling readers

By Mary Moffitt and Jerry Stemach

Source: Closing the Gap, August/September, 2001 Volume 20, Number 3

Ask struggling readers, "Would you rather read from the computer or read from a print book today?" Ask struggling writers, "Would you rather write with the computer or with paper and pencil today?" Then ask yourself, "Do I have enough computers to fill the requests I just got from asking those first two questions?"

What's the draw? Literacy technology — from digitized CDs to talking word processors — can be engaging, supportive, and forgiving. It can provide a personalized and private world in which you learn at your own pace, without embarrassment or fear of failure. It can enliven struggling students (way cool way to learn). It can enlighten frustrated teachers who are willing to integrate technology as an essential learning tool by feature-matching hardware and software to meet the unique instructional needs of diverse learners.

Graphing calculators, personal organizers, e-books and wireless Web access are here today. How will the world look 10 years from now when our second and third graders (or our older students who read at second and third grade levels) move into the adult, technological world of work and higher learning? We work hard to make our students book literate; do we work as hard to make them computer literate?

Imagine fully integrated technology

Imagine using technology in a fully integrated way to teach reading and writing to all learners, but especially to those learners who we have failed to reach using more traditional methodologies.

We submit that this approach is fundamentally different from the model at work in most schools where the computer is a reward, not the work itself. It is the "end of the day" experience — time permitting — not the "means" to get to the end of the day.

In a previous article (Evaluating text for older, struggling readers, *Closing The Gap*, June/July 2001) the author discussed Patricia Cunningham's widely popular and pedagogically sound "Four Block" model consisting of guided reading, word study, self-selected reading and writing. This model suggests that literacy learning requires a student to spend a minimum of 20 minutes each day in each area.

Infusing the Four Block model with technology requires a new mind set, new learning strategies and new instructional interventions. If your school has not shifted its technology usage paradigm, you and your colleagues, as well as your administrators, will need to push for a system-wide change across your district. This process takes commitment combined with a clear vision of the intended goals. It also requires ongoing and focused professional development, guided practice with products/tools, and most importantly, methods for providing ongoing support during this change process. It will no longer do to have a student transition from your class where technology is a "given," to the next classroom (or school site) where technology is something the teacher uses mainly to post grades or print banners.

Interrupting the cycle of failure

We have spent many years early in our careers working as specialists with students who had significant reading, language and learning disabilities. We often think about how some of our most frustrated students might have been more successful if they had entree to the technology available to support learning today. Our more recent experience in the schools confirms that for students who struggle in learning to read and write, the purposeful use of technology tools can have a synergistic impact when combined with sound instructional interventions.

It's no secret that the spotlight is shining brightly on literacy — reading and writing — in our schools today. Students' ability, or lack thereof, to sufficiently demonstrate their mastery of literacy skills on standardized measures is in the news on a daily basis. More students than ever are required to take high-stakes tests on an annual basis and the results have an increasing impact on the school life of individual students, their teachers and schools. At the same time, an increasing number of

students are struggling or failing with the acquisition and development of literacy skills.

In some cases, school technology is also a high profile topic. Schools are being networked and funds for technology integration are increasingly available. Educators are placing increased value on the use of technology as an instructional tool but unfortunately, much of the current technology use in classrooms does not add value to student learning. Computers are often used when real work is completed or reserved for isolated students to access learning material due to a physical disability.

The *National Reading Panel Report* (March, 2000) shared early research trends indicating that technology can be an effective tool for teaching reading. Particularly, it appears that the addition of speech to computer text and the use of hypertext may provide an instructional advantage. Findings also indicate that the use of computers as word processors may be very beneficial, given that reading instruction is most effective when combined with writing instruction.

Students who struggle with literacy often get caught in a cycle of failure that builds an increasing level of frustration and resistance as success slips further out of reach (Hasselbring, 1998). As educators, we must find ways to interrupt this cycle of failure and provide successful literacy learning experiences for our students. Technology programs and tools can interrupt the cycle of failure.

But how does one know which technology tools and strategies to employ when students struggle with learning? Choosing appropriate technology depends upon the interplay of many variables. First, it is important to remember that a computer is *not* a replacement for solid instruction and human contact. Keeping the curricular requirements and target learning standards clearly in mind is essential. Thinking in terms of technology categories or genres (talking word processors, electronic books, text to speech screen readers, graphic organizers, etc.) is helpful. Considering the underlying purpose of a tool helps us focus on *why* we might use a given tool in reading or writing instruction and practice. Considering the instructional task at hand, the specific needs of a student and the instructional setting will help in determining *when* and *how* to use the various features of a technology tool as a scaffold support during a lesson.

Questions to ask

We find the following set of questions to be helpful in working with individual students as well as with larger groups or an entire class. The final two questions are very important and often neglected.

Questions to ask:

What standards need to be met?

What skill needs to be developed?

What roadblocks get in the way of this learning?

What instructional interventions and learning strategies will have a synergistic impact?

What technology genre might offer an effective intervention?

What specific technology tool and which supportive features will have a synergistic impact?

What was the end result?

Was this a successful experience for the student(s)?

What needs to be different next time?

System wide change

The effective us of technology for literacy is not generally a plug-and-play experience. It takes time, focused coaching in aligning the use of technology with performance standards, guided practice with tools and features, connecting with colleagues for sharing and plenty of ongoing support to effectively use technology for literacy instruction. The ultimate goal is for teachers to guide each student in a class to become knowledgeable and consistent choosers and users of technology to support their own learning.

The implementation issues are complex. You must know your students well in order to choose and use technology effectively. A good teacher certainly understands the learning needs and habits of his students. But, you must also be familiar with the different types of technology available and understand how the unique features of each can be customized to provide just the right amount of scaffold support a student needs to become successful with a given learning task. Most importantly, you must make sure that the successful experience a student has in using technology to support her reading and writing is not an isolated experience. We want to ensure that a

student who has a successful experience in third grade continues on the path to success in grades four, five and beyond. Ideally, this means that every teacher in every classroom in a school is on board. In other words, it most likely means a system wide change in the way teaching and learning happens in a school.

Mary Moffitt had the good fortune to lead a process that helped an entire school system (28 schools) change its use of technology for literacy to the benefit of its students. Lots of hard work and focused time was spent in overcoming objections and holding true to a vision of effective technology integration for all students.

The good news is that while focusing on system wide change to integrate technology into literacy instruction for struggling students, the walls that divided the struggling students from regular students came tumbling down. Technology becomes a great equalizer, especially when it is placed in classrooms for all students to use.

The bad news is that the walls won't come tumbling down overnight. In Mary's former district (School District 54, Schaumburg, Illinois), the process took between three to five years to bring the entire school system on board with a more effective use of technology. Watch for "Using technology for teaching literacy in Schaumburg, Illinois: A Case Study" in an upcoming issue of *Closing The Gap*.

References for this article can be obtained by contacting DreammsForKids, Inc.

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"The best and most beautiful things in the world cannot be seen or even touched. They must be felt with the heart."

Helen Keller

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