

Teacher Professional Development: It's Not an Event, It's a Process

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About CORD

Since 1979, CORD, a national nonprofit organization, has been providing innovations in education to prepare students for greater success in careers and higher education. CORD assists educators in secondary schools and colleges through innovative teaching strategies; curriculum development; professional development; and partnerships with community leaders, families, and employers. CORD's current projects involve designing curricula, developing learning tools, delivering professional development, creating applications of educational technology, and conducting educational research and evaluation.

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Abstract

By and large, education reform initiatives of the last twenty years have improved student performance very little. The main reason is that too little attention has been paid to what actually goes on in the classroom.

This paper refocuses attention on the classroom, specifically on the importance of teacher professional development in changing teachers' classroom behaviors in ways that lead to improvement in student performance. Using a framework designed by the National Staff Development Council, the paper describes the **context**, **content**, and **process** of high-quality teacher professional development. One of the paper's primary observations is that sustained, systematic professional development programs that unfold as *processes* over time are generally superior to individual workshops and seminars, which are one-time events.

The paper concludes by showing that online professional development (combined with face-to-face training) provides two of the most essential elements of effective professional development: It gives participating teachers opportunities to practice what they learn over relatively extended periods of time, and it provides an ideal environment for interaction among participants. In addition, being asynchronous and accessible from any web-connected computer, online professional development provides a level of convenience that conventional professional development does not.

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2. DART Model (© 2002 Florida Department of Education)

Foreword

“Professional development can succeed only in settings, or contexts, that support it,” Sandra Harwell writes in “Teacher Professional Development: It’s Not an Event, It’s a Process.” She also emphasizes the role of leaders in establishing such contexts and the significance of educators’ beliefs as they engage in professional learning. And she stresses the need for a sense of the “urgency of providing teacher professional development that changes teacher behaviors in ways that lead to improvement in student performance.” In this paper Harwell identifies the most important ingredients of professional development in schools—leaders using the best available knowledge to create professional learning within a high-performance culture that improves teaching in all classrooms for the benefit of every student.

Superintendents (and other district administrators), principals, and teacher leaders have a tremendous influence on district and school culture and the quality of professional learning in schools. That influence is exercised in the countless decisions they make and actions they take each year that determine whether professional development will focus on student learning, whether the learning will be embedded in teachers’ daily work, and the means by which the effort will be evaluated (for instance, whether changes in teaching practice and improvements in student learning will be assessed in addition to teachers’ satisfaction with the experience). Too often, educational leaders underestimate their power in shaping professional learning and the quality teaching that flows from it.

Leaders can approach decisions about professional development with intellectual rigor and discipline or give them a cursory treatment as an afterthought to more pressing matters. Likewise, their decisions may be implemented with attention to quality and serious reflection on their impact or haphazardly executed with a sense of discharging an unpleasant responsibility. Those are the choices leaders face each time they meet to plan professional development.

I understand that limited resources and pressure to improve test scores make it very difficult for educational leaders to give sustained attention to the planning and implementation of high-quality professional development. We have many compelling reasons for doing things as we have always done them. But when we become serious about improving teaching for the benefit of all students, the forms of professional development described by Sandra Harwell as “unconventional” will be at the center of our attention.

Motivational speakers and “pull-out programs” are insufficient to meet the challenges faced by teachers. Let us create together team-based professional learning that is blended with the core processes of teaching and is part of every teacher’s workday. It’s time to use what we know about quality professional development for the benefit of the students who are now in our schools.

Dennis Sparks
Executive Director
National Staff Development Council

Preface

For the most part, improving schools is ultimately about improving student performance. Contrary to popular thought, student achievement is not tied directly to higher expectations, more accountability, high-stakes tests, more time on task, new curricula and materials, more computers, or sophisticated lab equipment. Improved student performance is the result of improved teaching skills focused on average students.

Traditional teacher preparation, as we have experienced it in this country, is tied to the behaviors, interests, and learning styles of the top students, i.e., the relatively small number of students who learn abstract concepts easily when taught by teachers who lecture but provide little in the way of application.

Sandi Harwell knows how average students learn, and how our nation’s teachers can be empowered to “bring out the best” in those students. Sandi is knowledgeable and highly experienced in effective contextual teaching practices—and in leading other teachers to understand and develop strategies for more effective classrooms.

Sandi is a teacher, a researcher, an author, and a “teacher of teachers.” Listen to what she says. Everyone will learn something!

Dan Hull
President and CEO
CORD

Teacher Professional Development: It's Not an Event, It's a Process

Introduction

Ever since the publication of “A Nation at Risk” (1983), our education system has been fixated on raising student performance. Over the last two decades, we have witnessed the coming and going of many initiatives designed to achieve that end—through the restructuring of schools and programs and the development of standards, curricula, teaching materials, and, yes, standardized assessments. Yet, in spite of the billions of dollars spent, student performance has been affected very little.

The main reason for that failure is that too little attention has been paid to what actually goes on in the classroom.

The purpose of this paper is to refocus our attention on the classroom, specifically on the urgency of providing teacher professional development that changes teacher behaviors in ways that lead to improvement in student performance. In addition to calling attention to the ongoing need for effective teacher professional development, I will describe the characteristics of high-quality professional development and make a case for an unconventional approach to professional development that, unlike “one shot” workshops and inservice days, allows teachers to acquire and practice new skills over time.

While the end result of all education reform should be *student* improvement, every reform initiative, if it is to succeed, must begin with recognition of the importance of *teachers* in raising student performance (Ferguson, 1991; Armour-Thomas, Clay, Domanico, Bruno, & Allen, 1989). In other words, “student achievement is the product of formal study by educators” (Joyce and Showers, 2002, p. 3). This is such an obvious fact that one would expect the

While the end result of all education reform should be *student* improvement, every reform initiative, if it is to succeed, must begin with recognition of the importance of *teachers* in raising student performance.

last twenty (reform-minded) years to have witnessed sweeping changes in the way teachers are educated and in what they do in the classroom. Yet there has been little change in either.

Formal teacher education has changed remarkably little over the years, despite a steady stream of new educational theories, constant refinement and updating of degree plans at colleges of education, and, very recently, the advent of “alternative certification” programs. Likewise, teachers are doing in the classroom more or less the same thing they did a generation ago. A recent study conducted for the Third International Mathematics and Science Study, in which teachers were videotaped in the classroom, concluded that, regardless of the structure of the

school or the culture of the community, teachers continue to use very traditional teaching methods (Stigler, Gonzales, Kawanaka, Knoll, and Serrano, 1999).

As long as this is the case, education reform in this country will continue to be largely ineffective. We cannot expect students to change what they do if we are content for teachers to continue doing what they have always done. As an old adage puts it, “If you do what you’ve always done, you will get the results you’ve always gotten.”

So how can we get teachers to change what they do? The answer is high-quality teacher professional development. When teachers are given the opportunity, via high-quality professional development, to learn new strategies for teaching to rigorous standards, they report changing their teaching in the classroom (Alexander, Heaviside, & Farris, 1998). The problem to

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date has not been a lack of professional development opportunities per se. To the contrary, professional development for teachers has been included in every major initiative designed to improve student performance. The problem is that the quality of those programs has been inconsistent, and there has been no consensus on what constitutes quality. Many professional development activities stop short of producing their intended results; they point out problems with traditional teaching but offer little help in changing what happens in the classroom and provide no opportunities for participants to practice what they learn.

If the goal of education reform is to improve student performance through changes in teaching practices, and if changes in teaching practices are likely to result only from high-quality professional development, we must ask ourselves a basic question: *What are the characteristics of high-quality professional development?* In the following three sections I will address that question, presenting my observations under headings proposed by the National Staff Development Council in its standards for staff development: context, process, and content (Appendix 1).

The Context of Professional Development

Professional development can succeed only in settings, or contexts, that support it. Probably the most critical part of that support must come from administrators (McLaughlin & Marsh, 1978). The outcome of every professional development initiative will depend ultimately on whether its administrators consider it important. For this reason, buy-in on the part of administrators (whether state directors, superintendents, or principals) is critical to success. The following remarks of a Tech Prep coordinator in Florida bear testimony to the extent to which lukewarm administrative support can doom a professional development initiative:

Years ago, I had the opportunity to participate in the restructuring of a school in which I was a teacher. The principal valued the initial change and his presence was clearly visible in all aspects of the change process. Between the planning and the implementation, however, the initiating principal left and a new principal took his place. The new principal was not interested in the direction in which the school was headed. While he did not blatantly sabotage the effort, his passive acceptance of it effectively killed the enthusiasm of the teachers. What had been a promising innovation was quickly deflated and soon died a quiet death.

Another characteristic of contexts that support professional development is that they are conducive to the changes that the professional development is designed to bring about. Before change can take place there must be a shared sense of need for change—the more strongly and widely felt the better. For example,

simply *telling* teachers that scores on standardized assessments must improve is not enough to generate the sense of urgency that institutional change requires.

Contexts that support professional development are conducive to the changes that the professional development is designed to bring about.

They have to sense the urgency

themselves. If the professionals in a given

setting agree about problems and solutions, institutional change is possible, even likely. When they disagree, the likelihood of change is limited. (In some cases, creating a shared sense of need for change requires the use of diagnostic tools such as the DART Model, which is currently being used in Florida [Appendix 2]. The DART Model helps schools assess their need for improvement by identifying schoolwide gaps in student performance.)

Whether a given context is conducive to change will depend on the extent to which the belief systems of its teaching professionals agree. Change is far more likely in contexts in which there is consensus on the answers to certain basic questions:

- Is learning a conscious act involving memorization of facts, or is it an awakening of consciousness that results from exploration?
- Is the teacher's job to serve as a facilitator or to present information to passive participants?
- Is learning a private experience or does it evolve through social interaction?

Teachers' beliefs about the answers to these and other fundamental questions play a significant role in teaching efficacy (Barfield & Burlingame, 1974; McLaughlin & Marsh, 1978; Aston & Webb, 1986; Aston, Webb, & Doda, 1982; Dembo & Gibson, 1985; Wolfolk & Hoy, 1990; Hoy, Wolfolk & Hoy, 1993). At the same time, they can be the most difficult barriers for

professional development to overcome, since in many cases they have evolved through years of teaching experience. This is why professional development often fails to produce its intended results: When the information and/or strategies presented via professional development contradict the participating teachers' beliefs, the teachers usually go right back to what they had been doing all along.

Changes in teachers' beliefs are more likely to occur in settings in which teachers consider learning a *communal* activity (Joyce & Showers, 2002). When teachers take time to interact, study together, discuss teaching, and help one another put into practice new skills and strategies, they grow and their students' behaviors improve accordingly. This is because social persuasion is a powerful means of changing beliefs, as has been suggested by a number of researchers (Bandura, 1995; Schunk, 1981; Zimmerman & Ringle, 1981). A sense of community, and the "supportive coaching" that it provides, is necessary not only to bring about changes in beliefs but to help teachers develop and maintain a sense of efficacy regarding new teaching strategies (Showers, Joyce, & Bennett, 1987).

The Content of Professional Development

Professional development cannot succeed without strong content. The content of the professional development that is associated with high-performing schools is always focused and serves a well-planned long-term strategy. To be effective, professional development should be based on curricular and instructional strategies that have a high probability of affecting student learning—and, just as important, students' ability to learn (Joyce and Showers, 2002). In addition, professional development should (1) deepen teachers' knowledge of the subjects being taught; (2) sharpen teaching skills in the classroom; (3) keep up with developments in the individual fields, and in education generally; (4) generate and contribute new knowledge to the profession; and (5) increase the ability to monitor students' work, in order to provide constructive feedback to students and appropriately redirect teaching (The National Commission on Mathematics and Science Teaching for the 21st Century, 2000).

Professional development should be based on curricular and instructional strategies that have a high probability of affecting student learning—and, just as important, students' ability to learn.

Professional development should always address identified gaps in student achievement. For example, it would be pointless to offer professional development to raise student performance in mathematics if students are doing well in mathematics but poorly in reading or writing. The content of professional development should center on subject matter, pedagogical weaknesses within the organization, measurement of student performance, and inquiry regarding professional questions that are relevant to the setting in which the professional development is delivered. By staying within this frame of

reference, teacher professional development can focus on real issues and avoid providing information that may not benefit the participants.

Most importantly, professional development should focus on instructional strategies that are proven to impact student performance. Moreover, professional development should be *delivered* using those strategies—which takes us to the process of professional development.

The Process of Professional Development

Professional development should be designed around research-documented practices that enable educators to develop the skills necessary to implement what they are learning (Joyce & Showers, 2002). Marzano, Pickering, and Pollock (2001) have identified nine research-documented practices that improve student performance (see table). Those practices should also be applied to the improvement of teacher effectiveness via professional development. (Even a cursory survey of the strategies listed shows that they include some that cannot be adequately addressed in conventional professional development activities.)

**Categories of Instructional Strategies
That Affect Student Achievement**

Identifying similarities and differences	Nonlinguistic representations
Summarizing and note taking	Cooperative learning
Reinforcing effort and providing recognition	Setting objectives and providing feedback
Homework and practice	Generating and testing hypotheses
Questions, cues, and advance organizers	

(Marzano, Pickering, & Pollock, 2001)

The process of professional development should also be based on sound educational practice such as contextual teaching. Contextual teaching presents information in familiar contexts and in contexts in which the information is useful. It is effective because it takes advantage of the fact that learning occurs best when learners process new information or knowledge in such a way that it makes sense to them in their own frames of reference. Contextual teaching is consistent with the way the mind naturally functions, as articulated, for example, in Caine, Caine, and Crowell’s (1999) twelve principles of brain-based learning:

- The brain is a living system—a collection of parts that functions as a whole.
- The brain/mind is social.
- The search for meaning is innate.

- The search for meaning occurs through patterning.
- Emotions are critical for patterning.
- Every brain simultaneously perceives and creates wholes and parts.
- Learning involves both focused attention and peripheral perception.
- Learning always involves conscious and unconscious processes.
- We have at least two ways of organizing memory—static memory and dynamic memory.
- Learning is developmental.
- Complex learning is enhanced by challenge and inhibited by threat associated with a sense of helplessness or fatigue.
- Every brain is uniquely organized.

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Contextual teaching recognizes the fact that learning with understanding (as opposed to rote memorization) involves five processes known collectively (after their acronym) as the REACT strategies (CORD, 1999):

- **Relating**
Learning in the context of life experience. The process of relating abstract concepts to familiar ideas and situations utilizes the potential of the dynamic (as opposed to static) memory systems of our brains.
- **Experiencing**
Learning in the context of exploration, discovery, and invention. Through experience students find meaning in learning abstract concepts. Recognition of the need to know encourages the brain to function at higher cognitive levels.
- **Applying**
Applying concepts and information in useful contexts. Real-world applications encountered through mentorships, apprenticeships, or other work-based experiences provide contexts in which the usefulness of abstract concepts becomes evident.

- **Cooperating**
Learning in the context of sharing, responding, and communicating with other learners. The brain is social. Learning occurs at much higher cognitive levels when learners interact.
- **Transferring**
Learning in the context of existing knowledge, using and building upon prior learning and experience. Learners are able to process new information when they can transfer what they already know to unfamiliar situations and problems.

The REACT strategies are not just about how *students* learn; they are about teachers as well. For example, when professional development provides opportunities for participants to interact (“Cooperating”) or serve as peer resources, what the participants learn in the professional development transfers to behaviors that are observable in the classroom (Birman, Desimone, Porter, and Garet, 2000). Professional development in which participants are given the opportunity to learn new classroom practices in the contexts within which those practices will be used is far more effective than more traditional methods of professional development. In other words, contextual teaching via professional development can be as effective in changing teacher behaviors as contextual teaching in the classroom is in improving student behaviors.

Professional development that is designed to take full advantage of the potential of contextual teaching is characterized by the following:

- It supports interaction among master teachers.
- It takes place over an extended period of time (rather than in one-shot workshops and seminars).
- It provides opportunities for teachers to try new behaviors in safe environments and receive feedback from peers.

Professional development in which participants are given the opportunity to learn new classroom practices in the contexts within which those practices will be used is far more effective than more traditional methods of professional development.

Summary

The following table summarizes the characteristics of effective teacher professional development and factors that contribute to its success.

<p>Context (or setting)</p> <ul style="list-style-type: none">• Supports professional development and the changes it is intended to bring about• Is characterized by a shared sense of need for change• Its teaching professionals agree on answers to basic questions regarding the nature of learning and the teacher's role in the classroom.• Its teaching professionals consider learning a communal activity.
<p>Content</p> <ul style="list-style-type: none">• Deepens teachers' subject matter knowledge• Sharpens classroom skills• Is up to date with respect to both subject matter and education in general• Contributes new knowledge to the profession• Increases the ability to monitor student work• Addresses identified gaps in student achievement• Centers on subject matter, pedagogical weaknesses within the organization, measurement of student performance, and inquiry regarding locally relevant professional questions• Focuses on (and is delivered using) proven instructional strategies
<p>Process</p> <ul style="list-style-type: none">• Is research based• Is based on sound educational practice such as contextual teaching• Supports interaction among master teachers• Takes place over extended periods of time• Provides opportunities for teachers to try new behaviors in safe environments and receive feedback from peers

Recommendations

At a time when more and more emphasis is being placed on measuring student performance and, as a result, on “teaching to the test,” it is critical that we don’t lose sight of what really makes a difference in student performance—the classroom teacher. We must find models for preparing teachers to use the findings of research to determine how best to teach content, and then equip those teachers with knowledge and skills that will enable them to do so.

In pursuing that goal we should seek ways to implement and support professional development programs that not only empower teachers to succeed in the present but enable them to grow over time. (This is especially true with respect to technology, which has become an essential tool in teaching and learning and will continue to play a significant role in education far into the future.) Professional development programs should focus on how people learn in a world of unbounded information, and they should give teachers time to reflect and interact within learning communities.

These recommendations are consistent with those of Sparks and Hirsch (nd), who recommend the following national professional development model for teachers:

- Create learning schools in which all staff are involved in “sustained, rigorous study of what they teach and how they teach it” (p. 11).
- Provide time for teacher professional development equaling 25 percent of time during each day for teachers to work together and to collaboratively plan lessons and share information.
- Base professional development on the collaboration model—teachers learning from each other.

This model is not unlike the one in place in Japanese schools. Could it be created here, given the current structure of our schools? The answer is yes, if we move away from the idea that all professional development and collaboration must be face to face.

With the technology that is available today, it is possible to create virtual collaborative learning schools. Time is not an issue in the virtual learning school because the interaction is asynchronous. Teachers can log on at any time and become immersed in the discussions. CORD is using this model, in combination with face-to-face delivery, in delivering sustained professional development in the areas of mathematics enrichment of career technical education (CTE). The face-to-face time can be structured to meet the requirements of states and districts. During the face-to-face sessions, teachers learn how to interact and participate in online discussions as well as how to align CTE standards with state mathematics standards. At the same time, by collaborating with mathematics teachers, they learn how to present mathematics instruction effectively. The discussion leader, or moderator, poses scholarly, thought-provoking

questions about the integration of mathematics into the teaching of CTE curricula. Teachers are expected to teach using the methodology taught in the face-to-face sessions (of which there are 3–5 days for each “course”). Online collaboration provides the venue for thinking about and reflecting on teaching and student learning. This method of delivery holds much promise for success in changing teacher behaviors in the classroom and for supporting the metacognitive processes that can improve the quality of teaching in the classroom.

It will be interesting to follow the progress made in the future in the area of improving the teaching and learning environment. One thing is certain, effective professional development for teachers can never be simply an event constrained by time. Professional development for teachers must be part of the process of quality improvement in education.

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Appendix 1

**The National Staff Development Council's
Standards for Staff Development, Revised Edition
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*National Staff
Development Council's*

STANDARDS FOR
STAFF DEVELOPMENT
REVISED EDITION

See inside for the 12 standards and the accompanying rationale text. Purchase the entire book to receive the case studies, discussion questions, next step suggestions, self assessment, and annotated bibliography.

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National Staff Development Council
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Learning Communities

Leadership

Resources

Data-Driven

Evaluation

Research-Based

Design

Learning

Collaboration

Equity

Quality Teaching

Family Involvement

THE STANDARDS

Context Standards

LEARNING COMMUNITIES: Staff development that improves the learning of all students organizes adults into learning communities whose goals are aligned with those of the school and district.

LEADERSHIP: Staff development that improves the learning of all students requires skillful school and district leaders who guide continuous instructional improvement.

RESOURCES: Staff development that improves the learning of all students requires resources to support adult learning and collaboration.

Process Standards

DATA-DRIVEN: Staff development that improves the learning of all students uses disaggregated student data to determine adult learning priorities, monitor progress, and help sustain continuous improvement.

EVALUATION: Staff development that improves the learning of all students uses multiple sources of information to guide improvement and demonstrate its impact.

RESEARCH-BASED: Staff development that improves the learning of all students prepares educators to apply research to decision making.

DESIGN: Staff development that improves the learning of all students uses learning strategies appropriate to the intended goal.

LEARNING: Staff development that improves the learning of all students applies knowledge about human learning and change.

COLLABORATION: Staff development that improves the learning of all students provides educators with the knowledge and skills to collaborate.

Content

EQUITY: Staff development that improves the learning of all students prepares educators to understand and appreciate all students, create safe, orderly and supportive learning environments, and hold high expectations for their academic achievement.

QUALITY TEACHING: Staff development that improves the learning of all students deepens educators' content knowledge, provides them with research-based instructional strategies to assist students in meeting rigorous academic standards, and prepares them to use various types of classroom assessments appropriately.

FAMILY INVOLVEMENT: Staff development that improves the learning of all students provides educators with knowledge and skills to involve families and other stakeholders appropriately.

LEARNING COMMUNITIES: *Staff development that improves the learning of all students organizes adults into learning communities whose goals are aligned with those of the school and district.*

RATIONALE

Staff development that has as its goal high levels of learning for all students, teachers, and administrators requires a form of professional learning that is quite different from the workshop-driven approach. The most powerful forms of staff development occur in ongoing teams that meet on a regular basis, preferably several times a week, for the purposes of learning, joint lesson planning, and problem solving. These teams, often called learning communities or communities of practice, operate with a commitment to the norms of continuous improvement and experimentation and engage their members in improving their daily work to advance the achievement of school district and school goals for student learning.

Learning teams may be of various sizes and serve different purposes. For instance, the faculty as a whole may meet once or twice a month to reflect on its work, engage in appropriate learning, and assess its progress. In addition, some members of the faculty may serve on school improvement teams or committees that focus on the goals and methods of schoolwide improvement. While these teams make important contributions to school culture, learning environment and other priority issues, they do not substitute for the day-to-day professional conversations focused on instructional issues that are the hallmark of effective learning communities.

Learning teams meet almost every day and concern themselves with practical ways to improve teaching and learning. Members of learning communities take collective responsibility for the learning of all students represented by team members. Teacher members of learning teams, which consist of four to eight members, assist one another in examining the standards students are required to master, planning more effective lessons,

critiquing student work, and solving the common problems of teaching.

The teams determine areas in which additional learning would be helpful and read articles, attend workshops or courses, or invite consultants to assist them in acquiring necessary knowledge or skills. In addition to the regular meetings, participants observe one another in the classroom and conduct other job-related responsibilities. Learning communities are strengthened when other support staff, administrators, and even school board members choose to participate, and when communication is facilitated between teams. Because of this common focus and clear direction, problems of fragmentation and incoherence that typically thwart school improvement efforts are eliminated.

Administrator learning communities also meet on a regular basis to deepen participants' understanding of instructional leadership, identify practical ways to assist teachers in improving the quality of student work, critique one another's school improvement efforts, and learn important skills such as data analysis and providing helpful feedback to teachers.

Many educators also benefit from participation in regional or national subject-matter networks or school reform consortia that connect schools with common interests. While most such networks have face-to-face meetings, increasing numbers of participants use electronic means such as e-mail, listservs, and bulletin boards to communicate between meetings or as a substitute for meetings. Such virtual networks can provide important sources of information and knowledge as well as the interpersonal support required to persist over time in changing complex schoolwide or classroom practices.

LEADERSHIP: *Staff development that improves the learning of all students requires skillful school and district leaders who guide continuous instructional improvement.*

RATIONALE

Quality teaching in all classrooms necessitates skillful leadership at the community, district, school, and classroom levels. Ambitious learning goals for students and educators require significant changes in curriculum, instruction, assessment, and leadership practices. Leaders at all levels recognize quality professional development as the key strategy for supporting significant improvements. They are able to articulate the critical link between improved student learning and the professional learning of teachers. They ensure that all stakeholders – including the school board, parent teacher organizations, and the business community – understand the link and develop the knowledge necessary to serve as advocates for high quality professional development for all staff.

Staff development leaders come from all ranks of the organization. They include community representatives, school board trustees, administrators, teachers, and support staff.

Principals, superintendents, and other key personnel serve as instructional leaders, artfully combine pressure and support to achieve school and district goals, engage parents and other caretakers in the education of their children, and establish partnerships with key community institutions that promote the welfare of all students. They are clear about their own values and beliefs and the effects these values and beliefs have on others and on the achievement of organizational goals. As primary carriers of the organization's culture, they also make certain that their attitudes and behavior represent the values and practices they promote throughout the school or district.

Skillful leaders establish policies and organizational structures that support ongoing professional learning and continuous improvement. They ensure an equitable distribution of resources to accomplish district

goals and continuously improve the school or district's work through the ongoing evaluation of staff development's effectiveness in achieving student learning goals. They make certain that employee contracts, annual calendars, and daily schedules provide adequate time for learning and collaboration as part of the workday. In addition, they align district incentive systems with demonstrated knowledge and skill and improvements in student learning rather than seat-time arrangements such as courses completed or continuing education units earned.

Principals and superintendents also distribute leadership responsibilities among teachers and other employees. Distributed leadership enables teachers to develop and use their talents as members or chairs of school improvement committees, trainers, coaches, mentors, and members of peer review panels. These leaders make certain that their colleagues have the necessary knowledge and skills and other forms of support that ensure success in these new roles. These leaders read widely, participate in learning communities, attend workshops and conferences, and model career-long learning by making their learning visible to others.

All leaders make use of various electronic tools to support their learning and make their work more efficient. They use e-mail, listservs, bulletin boards, Internet, and other electronic means to communicate, locate research and other useful information, and seek assistance in problem solving. They enlist other electronic tools to organize and schedule their work, produce and share documents, and increase their accessibility to colleagues, parents, and community members. Skillful leaders are familiar with the strengths and weaknesses of various electronic learning processes for themselves and others and make certain these processes are appropriately matched to individual and organizational goals.

RESOURCES: *Staff development that improves the learning of all students requires resources to support adult learning and collaboration.*

RATIONALE

Professional learning may be viewed either as an investment that will pay future dividends in improved staff performance and student learning or an expense that diminishes a school district's ability to meet its other financial obligations. While the latter view has been dominant in many school districts, the National Staff Development Council's position is that well designed and implemented professional development for school employees is an essential long-term investment in successfully teaching all students to high standards.

Well designed professional development creates learning communities that provide mutual support and focus everyone's attention and learning on a small number of high priority goals. While the vast majority of educators' professional learning should occur during the school day in collaboration with colleagues, it is also important that they acquire knowledge from sources outside the school by attending workshops and state and national conferences. However, when most teachers' and principals' professional learning occurs away from the school, it serves as a centrifugal force that leads to fragmentation and incoherent improvement efforts.

Professional development resources may serve many purposes. For instance, they may fund trainers who help teachers and administrators implement new instructional strategies and successfully use technology in their classrooms. They may provide full or part-time in-school coaches who assist teachers and principals in implementing standards-based curriculum in classrooms serving an increasingly diverse student population. In addition, these resources may support the use of external consultants or facilitators who assist the schools and teams in planning and evaluation of program efforts. They can also fund substitutes who cover classes while enabling educators to learn about leading-edge ideas and practices through attendance at state and national conferences.

Funds may also be used to provide stipends for lead teachers to serve as mentors or members of training cadres. To these ends, NSDC advocates that school districts dedicate at least ten percent of their budgets to staff development and that at least 25 percent of an educator's work time be devoted to learning and collaboration with colleagues. While many schools allocate one percent or less of their budgets to professional development and offer virtually no time for adult learning and collaboration, others have found ways to provide resources that approach the amounts recommended by the Council.

Because technology purchases have increased dramatically in many school districts during the past decade, often with little attention given to the development of teachers' abilities to use the technology, NSDC advocates that at least 30 percent of the technology budget be devoted to teacher development in this area. Without opportunities to learn, plan, and practice what they have learned, district investments in technology will fail to produce the intended benefits for students.

To make certain that resources invested in staff development achieve their intended results, district incentive systems such as salary supplements for graduate degrees may be redirected to reward demonstrations of knowledge and skill and student learning gains rather than seat-time arrangements such as courses taken or continuing education units earned. These changes require extensive discussions among key district leaders about the organization's purposes and the role of professional learning in improving student achievement. They are also likely to require significant modifications of collective bargaining agreements. However, recognizing that resources for professional development will continue to be scarce, it is vital that the resources be aligned to support the outcomes the districts seek for their educators and students.

DATA-DRIVEN: *Staff development that improves the learning of all students uses disaggregated student data to determine adult learning priorities, monitor progress, and help sustain continuous improvement.*

RATIONALE

Data from various sources can serve a number of important staff development purposes. First, data on student learning gathered from standardized tests, district-made tests, student work samples, portfolios, and other sources provide important input to the selection of school or district improvement goals and provide focus for staff development efforts. This process of data analysis and goal development typically determines the content of teachers' professional learning in the areas of instruction, curriculum, and assessment.

Helpful data are typically drawn from other sources, including norm-referenced and criterion-referenced tests, grade retention, high school completion, reports of disciplinary actions, school vandalism costs, enrollment in advanced courses, performance tasks, and participation in post-secondary education. Data on individual tests can be analyzed to learn how much students advanced in one year as well as particular strengths and weaknesses associated with the focus of the test. These data are typically disaggregated to reveal differences in learning among subgroups of students. The most common forms of disaggregation include gender, socioeconomic status, native language, and race.

A second use of data is in the design and evaluation of staff development efforts, both for formative and summative purposes. Early in a staff development effort, educational leaders must decide what adults will learn and be able to do and which types of evidence will be accepted as indicators of success. They also determine ways to gather that evidence throughout the change process to help make midcourse corrections to strengthen the work of leaders and providers. Data can also indicate to policy makers and funders the impact of staff development on teacher practice and student learning.

A third use of data occurs at the classroom level as teachers gather evidence of improvements in student learning to determine the effects of their professional learning on their own students. Teacher-made tests, assignments, portfolios, and other evidence of student learning are used by teachers to assess whether staff development is having desired effects in their classrooms. Because improvements in student learning are a powerful motivator for teachers, evidence of such improvements as a result of staff development experiences helps sustain teacher momentum during the inevitable frustrations and setbacks that accompany complex change efforts. Another benefit of data analysis, particularly the examination of student work, is that the study of such evidence is itself a potent means of staff development. Teachers who use one of several group processes available for the study of student work report that the ensuing discussions of the assignment, the link between the work and content standards, their expectations for student learning, and the use of scoring rubrics improve their teaching and student learning.

If data are to provide meaningful guidance in the process of continuous improvement, teachers and administrators require professional development regarding data analysis, designing assessment instruments, implementing various forms of assessment, and understanding which assessment to use to provide the desired information. Because the preservice preparation of teachers and administrators in assessment and data analysis has been weak or nonexistent, educators must have generous opportunities to acquire knowledge and skills related to formative classroom assessment, data collection, data analysis, and data-driven planning and evaluation.

EVALUATION: *Staff development that improves the learning of all students uses multiple sources of information to guide improvement and demonstrate its impact.*

RATIONALE

The quality of staff development experienced by many teachers and administrators varies considerably from year to year and even from teacher to teacher in the same school. As a result, many educational leaders and policy makers are skeptical about the value of staff development in improving teaching and student learning. Well-designed staff development evaluation can address this skepticism by serving two broad purposes: (1) improving the quality of current staff development efforts, and (2) determining the effects of staff development in terms of its intended outcomes.

Evaluation design is determined by the purpose for the evaluation—to improve something or to judge its worth—and by the audience for the evaluation's findings. The evaluation process begins in the planning stages and is based on clarity of thought regarding outcomes, the adult learning processes that will be used, and the evidence that is required to guide decision making. It asks and answers significant questions, gathers both quantitative and qualitative information from various sources, and provides specific recommendations for future action.

If staff development is to improve student learning, many levels of change are required, each with its own particular evaluation challenges. Unfortunately, a great deal of staff development evaluation begins and ends with the assessment of participants' immediate reactions to workshops and courses. While this information may be helpful to staff development planners, good evaluation design also gathers additional information. Beyond the (1) initial collection of data on participants' reactions, evaluation must focus on (2) teachers' acquisition of new knowledge and skills, (3) how that learning affects teaching, and in turn (4) how those changes in practice affect

student learning. In addition, evaluators may also be asked to provide evidence of (5) how staff development has affected school culture and other organizational structures.

Staff development leaders must also recognize that different audiences require different evidence. Because the vast majority of decisions about staff development are made in district offices and at school improvement team meetings, the urgent pressure that many school leaders feel to improve student learning means that they are interested in knowing now if staff development as it is practiced with their teachers and administrators is making a difference. They are not willing to wait several months for the district to receive the results of its standardized testing. Likewise, teachers want to know if staff development is making their work more effective and efficient, particularly whether improvements in student learning justify the often difficult changes they are being asked to make.

School board members and state legislators, however, want to know if their increased investment in staff development is paying off in improvements on state measures. While state and local policy makers may prefer evidence derived from more rigorous evaluation designs, it is important to remember that they may also be influenced by anecdotes and other informal assessments they hear from teachers or principals at meetings or in other settings.

Staff development evaluation must take into consideration each group's needs with regard to evaluation data. It must ensure the process is in place to collect the needed data and that the audience has the prerequisite knowledge and skills to interpret and use the information.

RESEARCH-BASED: *Staff development that improves the learning of all students prepares educators to apply research to decision making.*

RATIONALE

The charisma of a speaker or the attachment of an educational leader to an unproven innovation drives staff development in far too many schools. Staff development in these situations is often subject to the fad du jour and does not live up to its promise of improved teaching and higher student achievement. Consequently, it is essential that teachers and administrators become informed consumers of educational research when selecting both the content and professional learning processes of staff development efforts.

A problem in the use of the term “research-based” is that it is applied equally to practices that vary considerably in the scientific rigor used in their investigation. For instance, a person who reads an article in a professional journal in which the author advocates the use of a particular practice without providing any supporting evidence for that assertion may later carelessly describe that practice to others as “research-based.” Other studies may cite only teachers’ reports of changes in their own teaching practice and improved student learning as sufficient evidence for the value of the innovation. Still other studies may have methodologies that include pretests and post-tests of students and teachers, classroom observation of teachers’ instructional practice, and random assignment of students to control and experimental groups. To further add to the confusion, popular educational journals frequently publish articles in which a researcher critiques the work of another researcher in a way that often produces more heat than light, perplexity rather than clarity.

While widely varied in their scientific and intellectual rigor, these and many other examples add

to the confusion teachers and administrators feel when asked to select research-based improvement strategies. Consequently, it is critical that teams of teachers and administrators take the time to study methodically the research that supports the claims made by advocates of a particular approach to instructional improvement or whole-school reform. Such study often extends for several months and includes reading research reports (particularly those that have been published in peer-reviewed journals), talking with researchers on the telephone or inviting them to the school, and visiting schools that have adopted this approach. During this review, school leaders compare the students on whom the research was conducted with the students in their school, examine the research methodology, and determine if the researcher’s conclusions reflect the evidence that was provided. It may also be helpful for the team to contrast the research with that of others who make competing claims.

Because teachers and administrators often seek improvements in areas in which there is little research or in which researchers present contradictory findings, it is important that they design pilot studies to determine the effectiveness of new approaches before proceeding with large-scale implementation. While such studies (sometimes called action research) do not require the scientific rigor of more formal research, it is critical that they clearly stipulate the program’s goals, methods, and the types of evidence that will be accepted as indicators of success. Such evidence often includes student gains on teacher-made tests and improvements on appropriate performance tasks.

DESIGN: *Staff development that improves the learning of all students uses learning strategies appropriate to the intended goal.*

RATIONALE

Just as successful teaching requires that teachers be adept at using a variety of research-based instructional strategies, so too does successful staff development require that planners select learning strategies that are appropriate to the intended outcome and other situational factors. That means that staff development leaders and providers must be aware of and skillful in the application of various adult learning strategies.

For many educators, staff development is synonymous with training, workshops, courses, and large group presentations. They are unaware that teacher and administrator learning can occur through means as diverse as collaborative lesson design, the examination of student work, curriculum development, immersion in the work of mathematicians and scientists, case studies, action research, study groups, and professional networks, to name a few such processes. They are also often unaware that training sessions and coursework must include numerous live or video models of new instructional strategies, demonstrations in teachers' classrooms, and coaching or other forms of follow-up if those strategies are to become a routine part of teachers' instructional repertoire.

It is essential that staff development leaders and providers select learning strategies based on the intended outcomes and their diagnosis of participants' prior knowledge and experience. For instance, while awareness of new ideas may be achieved through large group presentations, that approach alone is unlikely to lead to changes in teaching practice. An extended summer institute with follow-up sessions throughout the school year will deepen teachers' content knowledge and is likely to have the desired effect. A two-hour after-school work-

shop will not achieve that goal. And while teachers are likely to adapt their instruction to new standards-based curriculum frameworks through the joint planning of lessons and the examination of student work with their colleagues, simply reading a journal article about the standards will in most cases be insufficient.

The most powerful forms of professional development often combine learning strategies. To promote the development of new instructional skills, training may be combined with coaching, study groups, and action research. To promote the skillful implementation of a standards-based curriculum, study of the subject with a content expert may be combined with curriculum replacement units and a course on the development of rubrics.

Technology provides a useful tool for accessing various means of professional learning. It provides for the individualization of teacher and administrator learning through the use of CD-ROMs, e-mail, the Internet, and other distance learning processes. Technology enables educators to follow their unique learning goals within the context of schoolwide staff development plans. They may download lesson plans, conduct research on a particular topic, or compare their students' work with that of students in other schools or even other countries who are participating in similar lessons. Technology also makes it possible for teachers to form virtual learning communities with educators in schools throughout the country and around the world. For example, teachers may become members of online subject-area networks, take online courses, and contribute to action research projects being done in various locations around the country.

LEARNING: *Staff development that improves the learning of all students applies knowledge about human learning and change.*

RATIONALE

No matter the age at which it occurs, human learning is based on a common set of principles. While adults have more life experience to draw on than younger learners and are often clearer about what they want to learn and why it is important, the means by which the learning occurs is remarkably similar. Consequently, it is important that the learning methods used in professional development mirror as closely as possible the methods teachers are expected to use with their students.

It is essential that staff development assist educators in moving beyond comprehension of the surface features of a new idea or innovation to a fuller and more complete understanding of its purposes, critical attributes, meaning, and connection to other approaches. To improve student achievement, adult learning under most circumstances must promote deep understanding of a topic and provide many opportunities for teachers and administrators to practice new skills with feedback on their performance until those skills become automatic and habitual. Such deeper understanding typically requires a number of opportunities to interact with the idea or procedure through active learning processes that promote reflection such as discussion and dialogue, writing, demonstrations, practice with feedback, and group problem solving.

Because people have different learning styles and strengths, professional development must include opportunities to see, hear, and do various actions in relation to the content. It is also important that educators are able to learn alone and with others and, whenever possible, have choices among learning activities.

Another important dimension of adult engagement in change processes is the feelings that such change often

evokes in individuals. Even under the best of circumstances, pressure for change, no matter what its source, may produce feelings of anxiety, fear, and anger. Such feelings are most effectively addressed through skillful listening and problem solving within a respectful and trusting school culture. It is helpful for educational leaders to appreciate that, to some degree, such feelings are natural and an inevitable part of the change process. Such appreciation is aided when leaders have a deep understanding of the change literature, particularly the Concerns-Based Adoption Model, and are able to apply its insights when planning and implementing new practices in schools.

A third dimension of change is the life stage of individuals engaged in the change process. While recognition of life stage differences would not alter expectations for performance, it may affect an individual's availability and interest in additional work responsibilities during different phases of his or her life. Recognition of life stage differences may also help staff development leaders in tapping educators' strengths and talents, such as asking skillful veteran teachers to serve as mentors or coaches for their peers.

Electronic forms of learning may prove particularly helpful in providing alternatives that respond to differences in learning styles and availability due to life stage issues. Staff development content may be accessed via the Internet or other forms of distance technology that will enable learning throughout the day in various settings using media that appeals to different learning preferences.

COLLABORATION: *Staff development that improves the learning of all students provides educators with the knowledge and skills to collaborate.*

RATIONALE

Some of the most important forms of professional learning and problem solving occur in group settings within schools and school districts.

Organized groups provide the social interaction that often deepens learning and the interpersonal support and synergy necessary for creatively solving the complex problems of teaching and learning. And because many of the recommendations contained in these standards advocate for increased teamwork among teachers and administrators in designing lessons, critiquing student work, and analyzing various types of data, among other tasks, it is imperative that professional learning be directed at improving the quality of collaborative work.

Staff development provides teachers and administrators appropriate knowledge and skills regarding group processes to ensure various teams, committees, and departments within schools achieve their goals and provide satisfying and rewarding experiences for participants. Because acquisition of this knowledge and skill has not typically been a part of educators' professional preparation and because leaders often underestimate its importance, it is essential that professional learning focused on helping educators work together successfully be given a high priority. Organized groups usually go through several stages in their development as participants come together, begin to know one another at deeper levels, get clear about the group's purpose and ground rules, surface and address the inevitable conflict that such work elicits, and become effective at performing the group's work in a manner that satisfies both the task and interpersonal expectations of participants. It is important that participants understand that these phases are a natural part of group development and that they be given

opportunities to learn strategies for addressing problems that arise along the way. Outside facilitators can be helpful to groups as they navigate these unfamiliar waters.

One of the most difficult tasks of such groups is constructively managing the conflict that inevitably arises when participants discuss their fundamental beliefs about teaching and learning and seek the best ways to improve student achievement. Some schools have managed conflict by steering away from controversial issues or pretending that significant disagreements do not exist. Such "pseudo community" or "contrived collegiality" is a barrier that inhibits educators from speaking honestly with one another about their views on important issues, which is a critical first step in conflict resolution. These candid conversations are essential in reaching consensus on long-term goals and strategies and in finding solutions to the perennial problems of teaching and school leadership.

While collaborative, face-to-face professional learning and work are the hallmarks of a school culture that assumes collective responsibility for student learning, technology will increasingly provide a means for new and different forms of collaboration. Technology will enable teachers and administrators from around the country and world to share ideas, strategies, and tools with one another in ways that will dramatically increase the number of collaborative links among educators. But electronic forms of such work will also present teachers and administrators with new challenges whose outlines are only becoming dimly visible as larger numbers of educators begin to use these processes to strengthen their teaching and leadership practices.

EQUITY: *Staff development that improves the learning of all students prepares educators to understand and appreciate all students, create safe, orderly, and supportive learning environments, and hold high expectations for their academic achievement.*

RATIONALE

Effective educators know and demonstrate appreciation for all their students. Through their attitudes and behaviors, they establish classroom learning environments that are emotionally and physically safe and they communicate high expectations for academic achievement and quality interpersonal relationships. Professional development related to these issues is particularly important when educators are assigned to levels other than those for which they were prepared (for instance, elementary and high school teachers or administrators assigned to middle-grades schools) and when they are teaching students whose backgrounds are significantly different from their own (for instance, white, middle-class teachers working in schools that primarily serve students of color and/or those from low-income homes).

Teachers' knowledge of their students is an essential ingredient of successful teaching. Staff development helps teachers to understand the general cognitive and social/emotional characteristics of students in order to provide developmentally appropriate curriculum and instruction. It provides strategies for tapping the unique learning strengths of each student. In addition, it helps teachers to use knowledge of their students' interests and backgrounds to assist them in planning meaningful, relevant lessons.

For teachers to act on this knowledge of students, it is important that staff development equip them with ways of providing various types of instruction based on individual differences. Teachers learn to recognize learning strengths and preferences and how to differentiate learning activities within their classrooms. They also learn various ways to assess student progress based on individual differences.

Successful educators convey through various means the value and potential that is inherent in each student. They demonstrate understanding, respect, and appreciation of students' cultures and life experiences through their lessons and daily interaction with students and their caregivers. High quality staff development provides educators with opportunities to understand their own attitudes regarding race, social class, and culture and how their attitudes affect their teaching practices and expectations for student learning and behavior. In addition, teachers learn about the cultural backgrounds of their students and to develop an appreciation of the benefits that diversity provides in their classrooms for both students' academic performance and interpersonal and social development.

Staff development equips all educators with the knowledge and skills to establish safe and orderly learning environments characterized by mutual respect in which academic learning and psycho/social development will occur. It enables teachers to develop classroom management skills that support positive interaction and nurture students' capacity for self-management. It assists teachers and administrators in creating schoolwide practices that convey respect for students, their families, and their cultural backgrounds. Such practices may include school investigations, curriculum units, and other activities that recognize the contributions and traditions of various cultures. These practices also demonstrate sensitivity to caregivers and their students whose primary language is not English and whose work, home life, or cultural traditions makes it difficult for them to interact with the school and teachers in ways most comfortable and familiar to North American educators.

QUALITY TEACHING: *Staff development that improves the learning of all students deepens educators' content knowledge, provides them with research-based instructional strategies to assist students in meeting rigorous academic standards, and prepares them to use various types of classroom assessments appropriately.*

RATIONALE

Successful teachers have a deep understanding of the subjects they teach, use appropriate instructional methods, and apply various classroom assessment strategies. These teachers participate in sustained, intellectually rigorous professional learning regarding the subjects they teach, the strategies they use to teach those subjects, the findings of cognitive scientists regarding human learning, and the means by which they assess student progress in achieving high academic standards.

Teachers may acquire deeper understanding of their subjects through various means. For example, they may serve summer internships in appropriate organizations, attend extended institutes with follow-up activities throughout the school year, take traditional university or electronically delivered coursework, perform the activities of individuals involved in that field (for instance, conduct historical research), or participate in face-to-face or electronic subject-area networks. Whenever possible, however, it is important that teachers experience firsthand as learners the instructional approaches they in turn will be using with their own students. They may also attend workshops and courses with classroom follow up, participate in study groups, visit or watch videotapes of high-performing classrooms, observe demonstration lessons, or receive classroom coaching. Because it is natural that teachers will teach as they themselves are taught, it is imperative that the instructional methods used with educators be congruent to the greatest extent possible with those they are expected to use in their classroom.

Teachers depend on other knowledge and skills to facilitate student success. Examples of such additional content include classroom management, fundamental technological skills that increase teacher productivity, as well as mentoring and coaching skills for teacher leaders. Again, teachers must experience appropriate staff development designs to facilitate the desired outcome for students.

Because classroom assessment when appropriately conducted can improve student learning as well as gauge achievement, it is essential that teachers have a range of methods at their disposal that promote learning as well as measure it. Therefore, successful professional development efforts regularly include opportunities for teachers to acquire formative classroom assessment techniques appropriate to the subject matter and types of performance called for in state or local standards.

Fortunately, teachers' acquisition of this knowledge and these skills can occur relatively simultaneously. For instance, teachers may be learning new instructional approaches and assessment techniques while they are deepening their understanding of curriculum content. Teachers who are learning research-based instructional skills may find that their progress is limited by a lack of subject-area knowledge in a particular area and request an on-the-spot explanation of a particular concept. Teachers who are developing or learning how to use a scoring rubric for assessment purposes may at the same time be deepening their content knowledge.

In their role as instructional leaders, district and school administrators make teacher content knowledge and skills related to curriculum, instruction, and assessment high priorities. They do so by designing teachers' work days to include ongoing professional learning and collaboration and by providing teachers with data to assist with formative classroom assessment. In addition, they create a district and school culture of innovation and continuous improvement by visiting classrooms regularly to observe instruction and by engaging in frequent conversations with teachers individually and collectively about instruction and student learning.

FAMILY INVOLVEMENT: *Staff development that improves the learning of all students provides educators with knowledge and skills to involve families and other stakeholders appropriately.*

RATIONALE

At its best, the education of young people is a partnership between the school, the home, and the community. Effective partnerships, however, require leadership, a compelling purpose for their work, and a set of mutually agreed-upon goals. Educators who wish to strengthen the bonds among those individuals and organizations who contribute to the education and welfare of a community's youth must be knowledgeable about various ways in which families and community members can be involved meaningfully in the affairs of the school for the benefit of students.

Different types of partnerships require different sets of knowledge and skills. School and district-level administrators are responsible for forging a consensus on mission and goals and the underlying values and beliefs that support their work. They also must be able to engage the community in a way that sustains this collaborative work over a sufficient period of time to realize the intended improvements. Leaders who are successful at these tasks see consensus building with the broader school community as an important part of their work, are skillful in communicating in clear, direct language (both orally and in writing), and are effective in conducting meetings that balance task achievement and relationships. These leaders are both clear about their own values and beliefs and respectful of the values and beliefs of others. Such work requires a capacity to convey authentic interest in the perspectives of others, to listen deeply and honor others' points of view, and to identify areas of common interest.

Teachers who establish partnerships with the families or other caregivers of their students must understand the cultural backgrounds of their students and the unique challenges those families may be experiencing. Teachers must be able to communicate clearly and respectfully with family members and demonstrate a genuine interest in the welfare of the child and family. They must be skillful in conducting meetings with caregivers that create a sense of teamwork between the home and school as well as delineate appropriate and manageable ways for providing support for a student's learning at home. In addition, teachers must demonstrate sensitivity to ways in which caregivers may be most appropriately involved in schools as classroom volunteers or committee members.

Technology provides teachers and administrators with important tools for this work. While not applicable in all communities or with all families, some schools have strengthened their connections with families and the community by posting school news and homework assignments on school or district web sites and by easing communication with teachers by providing e-mail or voice mail access to families. Other schools are increasing the availability of computers to all students by working with community organizations such as libraries and churches. While Internet-based communication may seem like a pipe dream in schools where teachers still do not have ready access to telephones or copy machines, the availability of such technology is growing at an increasing rate and should be available to virtually all schools.

Appendix 2

**DART Model (© 2002 Florida Department of Education).
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**Going *Beyond* the Numbers to
Improve Instruction with
DART 2002 – Form HS
(For High Schools)**



**A model for using FCAT
results to improve instruction**

September 2002 Version



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Florida Department of Education
325 W. Gaines St., Suite 424
Tallahassee, FL 32399-0400
(850) 487-1023 or SunCom 277-1023

**Going Beyond the Numbers to Improve Instruction:
Steps to implementing the new DART 2002 Model**

1. After September 2002, download the current DART Model for your grade levels from <http://osi.fsu.edu/data.nsf/DA?OpenPage>.
2. To fill out the DART charts, acquire FCAT reports for *all curriculum students* and/or *standard curriculum students* from the district office. “Standard curriculum students” refer to those students in both the *October and February* FTE membership surveys. Examining those scores is important since standard curriculum student data are used in determination of school accountability letter grades. These are the reports you will need:
 - a. Overall school results on subtests vs. district and state results
 - b. Subtest results disaggregated by subgroups for your school
 - c. Overall school results and subgroup results for writing and the % of students scoring in the various achievement levels for reading and mathematics.
3. Download test resources such as test item specifications for mathematics and reading for your grade levels @ <http://www.firn.edu/doe/sas/fcat/fcatis01.htm>
4. Acquire a copy of these handbooks from your district or the Panhandle Area Educational Consortium at (850) 638-6131 X2245:
 - a. *Handbook of Instructional Activities for the FCAT in Mathematics* (\$6.33)
 - b. *Handbook of Instructional Activities for the FCAT in Reading* (\$9.26)
5. Fill out the DART charts and engage staff in reflections.

Next Steps after Filling in the DART Charts

1. Form **grade-level teams** to study your school situation and plan changes.
2. Form a cross-grade-level team to **coordinate efforts across the different grade levels** to assure you are “reading and writing across the curriculum” or “applying mathematics across the curriculum” and across grades. Develop a “Game Plan” for the school!
3. Other steps:
 - a. Gather “darts” to “hit your school targets” (as described on pages 11 and 12).
 - b. Research resources and best practices to help you develop a better plan of action.
 - c. Get help, if desired, by contacting your districts School Improvement Contact Person, Area Centers for Educational Enhancement, the Regional Facilitators in the Office of School Improvement in the Department of Education, or other regional service providers.

What is the DART Model?

An analytical approach to improve school performance through targeted instructional change

D – *Disaggregate Data*: analyze data; tease them apart; display results

A – *Assess*, identify and prioritize your *needs*

R – *Review* sunshine state standards and FCAT testing resources to *pinpoint* deficiencies

T – *Target* and *align* curriculum, classroom instruction, and assessment by addressing needs and deficiencies with *new* or *adapted* learning activities and available resources

Get on TARGET with the DART 2002 Model!



“D”

Disaggregate Data: analyze data; tease them apart; display results

1. Compare the school FCAT mean scale scores for MATHEMATICS vs. district and state mean scale scores. Calculate and record the differences. Check if a concern.

 **MATHEMATICS RESULTS** 

Grade Level	Mean Scale Score	School minus district =	School minus state =	Check (✓) if a Concern
Grade 9				
Grade 10				

2. What percent of the various subgroups of students are performing at the lowest achievement level, Level 1, in MATHEMATICS? Circle any entries that had less than 10 students tested in a subgroup. **[Be cautious about making instructional changes when few students are involved.]**

 **MATHEMATICS RESULTS** 

Student Group	Grade 9: % in Level 1*	Grade 10: % in Level 1*	Average Across Grades	Check (✓) if a Concern
White				
Black				
Hispanic				
Asian				
Girls				
Boys				
Free-Reduced Lunch (Optional)				
Standard Curriculum Group				
All Curriculum Group Total student results for school				

***Note:** If numbers of students in Level 1 are not very large (i.e. >10), analyze each grade level’s lowest quartile group. This information is not printed as a summary on the School Demographic Report. Another strategy is to analyze student group performance for students in Level 1 and Level 2.

3. Using the FCAT Sunshine State Standards School Demographic Report for each grade level, **highlight each student** in Achievement Level 1 for targeted instruction in Mathematics.

4. Record the mean subtest scores of the three grade levels for the school (Sch) vs. district (Dis) vs. state (St) results. Circle or highlight results that could be addressed in the School Improvement Plan.



MATHEMATICS SUBTEST RESULTS



STRAND	Grade 9 Sch	Grade 9 Dis	Grade 9 St	Grade 10 Sch	Grade 10 Dis	Grade 10 St
Number Sense/Operations						
Measurement						
Geometry & Spatial Sense						
Algebraic Thinking						
Data Analysis and Probability						

5. Compare the school FCAT mean scale scores for READING vs. district and state mean scale scores. Calculate and record the differences. Check if a concern.



READING RESULTS



Grade Level	Mean Scale Score	School minus district =	School minus state =	Check (✓) if a Concern
Grade 9				
Grade 10				

6. What percent of the various subgroups of students are performing at the lowest achievement level, Level 1, in READING? Circle any entries that had less than 10 students tested in a subgroup. **[Be cautious about making instructional changes when few students are involved.]**



READING RESULTS



Student Group	Grade 9: % in Level 1*	Grade 10: % in Level 1*	Average Across Grades	Check (✓) if a Concern
White				
Black				
Hispanic				
Asian				
Girls				
Boys				
Free-Reduced Lunch (<i>Optional</i>)				
Standard Curriculum Group				
All Curriculum Group Total student results for school				

*Note: If numbers of students in Level 1 are not very large (i.e. >10), analyze each grade level's lowest quartile group. This information is not printed as a summary on the School Demographic Report. Another strategy is to analyze student group performance for students in Level 1 and Level 2.

7. Using the *FCAT Sunshine State Standards School Demographic Report* for each grade level, **highlight each student** in Achievement Level 1 for targeted instruction in Reading.
8. Record the mean subtest scores of the three grade levels for the school (Sch) vs. district (Dis) vs. state (St) results. Circle or highlight results that could be addressed in the School Improvement Plan.



READING SUBTEST RESULTS



CLUSTER	Grade 9 Sch	Grade 9 Dis	Grade 9 St	Grade 10 Sch	Grade 10 Dis	Grade 10 St
Words/Phrases						
Main Ideas/Purpose						
Comparisons						
Reference/Research						

9. Examine the school performance grade reports for 2002 for your school at http://info.doe.state.fl.us/school_grades/0102/index.cfm. Summarize your LEARNING GAINS in the chart below.



LEARNING GAIN RESULTS



SUBJECT	% Learning Gains by 2002 9 th Graders	% Learning gains by 2002 10 th Graders	Check (✓) if a Concern
Mathematics			
Reading			
Lowest 25% in Reading			

Do this: Create lists of students who have not demonstrated learning gains between 2001-02. Be sure to include transfer students. Develop instructional action plans for these students after further diagnostic testing.

10. Summarize the FCAT WRITING results in the chart below. Check your concerns.



WRITING RESULTS



	Percent "3.0" and above	Percent "3.5" and above =	Percent "4.0" and above	Check (✓) if a Concern
Expository				
Narrative/Persuasive				
Combined				

11. Record the mean scores for each subgroup for the FCAT writing assessment. Circle low scores that could be addressed in the School Improvement Plan.



WRITING RESULTS



	White	Black	Hispanic	Asian	Boys	Girls	Free-Reduced Lunch
Expository							
Narrative/Persuasive							
Combined							

“A”

Assess, identify and prioritize your *needs*

12. Which MATHEMATICS strands from the Sunshine State Standards are areas of strength or weakness at your school? (See item 4 above.)

Strength		Weakness
<input type="checkbox"/>	A. Number Sense/Operations	<input type="checkbox"/>
<input type="checkbox"/>	B. Measurement	<input type="checkbox"/>
<input type="checkbox"/>	C. Geometry & Spatial Sense	<input type="checkbox"/>
<input type="checkbox"/>	D. Algebraic Thinking	<input type="checkbox"/>
<input type="checkbox"/>	E. Data Analysis and Probability	<input type="checkbox"/>

13. Reflect on your FCAT achievement results. What are your instructional needs in MATHEMATICS?

Prioritize (rank-order) the areas listed above. _____

Based on this analysis, what actions should be taken relative to MATHEMATICS in the School Improvement Plan? Draft new, measurable objectives? Develop new learning strategies?

Note other MATHEMATICS areas of concern:

“A”

Assess, identify and prioritize your *needs*

14. Which clusters from READING (Language Arts Strand A in the Sunshine State Standards) are areas of strength or weakness for your school? (See item 8 above.)

Strength		Weakness
<input type="checkbox"/>	A. Words/Phrases	<input type="checkbox"/>
<input type="checkbox"/>	B. Main Ideas/Purpose	<input type="checkbox"/>
<input type="checkbox"/>	C. Comparisons	<input type="checkbox"/>
<input type="checkbox"/>	D. Reference/Research	<input type="checkbox"/>

15. What are your instructional needs in READING?

Prioritize (rank-order) the areas listed above. _____

Based on this analysis, what actions should be taken relative to READING in the School Improvement Plan? Draft new, measurable objectives? Develop new learning strategies?

Note other READING areas of concern:

“A”

Assess, identify and prioritize your *needs*

16. Which reporting categories from FCAT Writing (Language Arts Strand B in Sunshine State Standards) are areas of strength or weakness for your school? (See items 10 and 11 above.)

Strength		Weakness
<input type="checkbox"/>	A. Expository	<input type="checkbox"/>
<input type="checkbox"/>	B. Narrative	<input type="checkbox"/>
<input type="checkbox"/>	C. Persuasive	<input type="checkbox"/>

15. What are your instructional needs in WRITING?

Prioritize (rank-order) the areas listed above. _____

Based on this analysis, what actions should be taken relative to WRITING in the School Improvement Plan? Draft new, measurable objectives? Develop new learning strategies?

Note other WRITING areas of concern:

“R”

Review sunshine state standards and FCAT testing resources to *pinpoint* deficiencies

18. Examine the *Mathematics Test Item and Performance Task Specifications* book. List the benchmarks by number that are included in the strands identified in your priority area(s) for MATHEMATICS. Circle those that you are currently not teaching well.

_____	_____	_____
_____	_____	_____
_____	_____	_____

19. Examine the *Reading Test Item and Performance Task Specifications* book. List the benchmarks by number that are included in the clusters identified in your priority area(s) for READING. Circle those that you are currently not teaching well.

_____	_____	_____
_____	_____	_____
_____	_____	_____

20. Examine the sample test items from the *Mathematics Test Item and Performance Task Specifications* book for your grade level. Repeat the examination with the Reading Specifications book.
- a. What types of items are included? (Multiple choice, gridded response, etc.)
 - b. What thinking skills are required? Level of Bloom’s Taxonomy? (Knowledge, Comprehension, Application, Analysis, Synthesis, Evaluation) Or FCAT Cognitive Level I or II? (See p. 5 General Specifications.)
 - c. What new learning experiences might contribute to improved student achievement?
21. Give sample test items from an FCAT test item bank as a pretest to verify or identify instructional weaknesses of students.

“T”

Target and *align* curriculum, classroom instruction, and assessment by addressing needs and deficiencies with *new* or *adapted* learning activities and available resources

22. Acquire and examine the *Handbook of Instructional Activities for the FCAT in Mathematics*. Study one activity from the Handbook.

How would you describe the sample activity in terms of being “real world?”

Describe the activity in terms of it engaging students.

23. Gather your darts to “hit your Mathematics target:”

 Order the *Handbook of Instructional Activities* from the PAEC Clearinghouse (850) 638-6131 X 2245 or request hard copies from your district.

 Plan to implement *Handbook* activities in the school and develop other similar and enhancing activities for the above benchmarks.

 Make use of the Department of Education’s Curriculum Planning Tool at <http://www.firn.edu/doe/cgi-bin/doehome/menu.pl>. Create your own lessons and assessments correlated with the Sunshine State Standards.

 Have students make use of the FCAT Explorer Program on the DOE website.

 Visit and use the STEPS website maintained by the Region 1 ACEE. STEPS is an electronic performance support system designed specifically to facilitate teachers in the development of instructional lessons, units, and curricula aligned to the Sunshine State Standards. Locate the site at <http://www.ibinder.uwf.edu/steps/>

 Provide students with practice on FCAT-like items for different FCAT test item banks throughout the year.

“T”

Target and *align* curriculum, classroom instruction, and assessment by addressing needs and deficiencies with *new* or *adapted* learning activities and available resources

24. Examine the Handbook of Instructional Activities for the FCAT in Reading.

How would you describe a sample activity in terms of being “real world?”

Describe the activity in terms of it engaging students.

25. Gather your darts to “hit your Reading target”:

 Order the *Handbook of Instructional Activities* from the PAEC Clearinghouse (850) 638-6131 X 2245 or request hard copies from your district.

 Plan to implement *Handbook* activities in the school and develop other similar and enhancing activities for the above benchmarks.

 Make use of the Department of Education’s Curriculum Planning Tool at <http://www.firn.edu/doe/cgi-bin/doehome/menu.pl>. Create your own lessons and assessments correlated with the Sunshine State Standards.

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 Provide students with practice on FCAT-like items for different FCAT test item banks throughout the year.

“T”

Target and *align* curriculum, classroom instruction, and assessment by addressing needs and deficiencies with *new* or *adapted* learning activities and available resources

26. Before you begin to align needs with resources, take a moment to reflect on your reading, writing, and mathematics programs.

Is there anything you want to DISCONTINUE? (Consider all aspects of your curriculum, instruction and assessment practices.)

What do you want to INITIATE, CHANGE OR MODIFY?

What do you want to CONTINUE? How will you ensure that your areas of strength are supported and continued?

“T”

Target and *align* curriculum, classroom instruction, and assessment by addressing needs and deficiencies with *new* or *adapted* learning activities and available resources

Area of Need:

Available Resources:

Contact Person:

Area of Need:

Available Resources:

Contact Person:

Next Steps: Review page 2 again. Consider forming cross-grade-level teams or other school teams to address your school’s instructional needs. Create and implement a plan of action.

Stay on “target” with an annual check-up using the DART Model!

