

**FIRST THINGS FIRST'S APPROACH TO
IMPROVING INSTRUCTION**

INSTITUTE FOR RESEARCH AND REFORM IN EDUCATION

Draft October 2001

FIRST THINGS FIRST CRITICAL FEATURES

These seven features stand at the core of change in every FTF school.

For students:

1. ***Lower student-adult ratios to 15:1 or less*** during core instructional periods, primarily through redistribution of the professional staff.
2. ***Provide continuity of care*** by forming Small Learning Communities that keep the same group of professionals, students and families together for extended periods during the day and across multiple school years.
3. ***Set high, clear and fair standards*** for academics and conduct, clearly defining what all students will know and be able to do by the time they leave high school and at key points along the way.
4. ***Provide enriched and diverse opportunities*** for students ***to learn, perform and be recognized.***

For adults:

5. ***Equip, empower and expect staff to implement effective instructional practices*** by giving teaching teams the authority to make instructional decisions, creating opportunities for continuous staff learning and specifying clear expectations about what good teaching and learning look like.
6. ***Give small learning communities and schools the flexibility to redirect resources (time, money, people and space) quickly*** to meet emerging needs.
7. ***Assure collective responsibility*** by providing collective incentives and consequences for teaching teams, schools and district staff, based on improvements in student performance.

SECTION 1

I. Background and Overview

The purpose of this paper is to provide information to building and district staff about First Things First's approach to improving instruction. Over the coming months and years, staff will work with the concepts and practices presented here in many venues:

- In study groups during the FTF planning year;
- In full-staff training sessions with Kagan Cooperative Learning, Inc. and other nationally recognized consulting organizations;
- In small learning communities with colleagues who share the same group of students; and
- In disciplinary teams with colleagues who teach the same subjects.

At the same time, FTF staff will be working with district and building leaders to assure that teaching staff have the support to learn, implement and study these concepts and practices, all of which give teachers flexibility in how they are used to meet the needs of individual students.

Experience and research tell us that three conditions characterize successful schools:

- strong relationships among students and adults;
- effective instructional practices in every classroom every day; and
- policies and resources aligned to make the first two conditions possible.

It is the second of these conditions that most concerns us here. Three of FTF's seven critical features specifically address teaching and learning:

- ***Set high, clear and fair standards*** for academics and conduct, clearly defining what all students will know and be able to do by the time they leave high school and at key points along the way.
- ***Provide enriched and diverse opportunities*** for students *to learn, perform and be recognized.*

- ***Equip, empower and expect staff to implement effective instructional practices*** by giving teachers the authority to make instructional decisions, creating opportunities for continuous staff learning and specifying clear expectations about what good teaching and learning look like.

This paper is organized around the last two of these critical features. The importance of setting high, clear and fair standards for student work is embedded throughout the discussion.

II. Provide Enriched and Diverse Opportunities for Students to Learn, Perform and Be Recognized

Effective instruction results in students who are actively engaged in their learning. They can employ different mediums to learn inside and outside the school, and they can show their mastery of new knowledge and skills in different ways. Students who experience effective instruction recognize their responsibilities in a learning environment, feel safe taking risks and feel valued for their strengths.

Effective instruction shows itself in classrooms where student talk is about challenging and meaningful work; where teacher talk is used sparingly to inspire, focus and enrich what students are doing; and where student work is displayed in multiple ways and recognized regularly. Table 1 summarizes some ways classrooms will look different if we succeed in enriching students' opportunities to learn, perform and be recognized through improved instruction.

While students must contribute to a learning environment, it remains the role of the staff to create the opportunities that will inspire, focus and recognize student work.

Opportunities...to Learn

“The amount of active participation in the learning process is an excellent index of the quality of instruction for the purpose of predicting or accounting for individual learning.”

Benjamin Bloom

Opportunities to learn come when the student must seek something: an answer to a question, information to solve a problem or a new way to do a job. As seekers, students become actively engaged in their learning. Student performance improves, and misbehavior diminishes.

Unfortunately, most students in traditional schools are not actively engaged in learning. In a study done by Csikszentmihalyi et al (1993), researchers equipped high school students with beepers and beeped them randomly throughout the school day. When they heard the beep, the students were asked to stop and write down whatever was going through their minds. The researchers beeped 28 students who were listening to a Chinese history lesson about Genghis Khan's invasion of China in the 12th century. Only two students were thinking about China: one was thinking about what he'd had at a Chinese restaurant two weeks before, and the other was wondering why Chinese men in the 12th century wore their hair in ponytails! Essentially, no one was thinking about the lesson or using their natural curiosity to engage with its content.

Meyers and Jones (1997) reported similarly disturbing discoveries. While teachers were lecturing, students were not attending to what was being said 40 percent of the time. In the first ten minutes of a lecture, students retained 70 percent of the information and in last 10 minutes, only 20 percent.

Time to Reflect, Alone and Together

Young people think more effectively and self-reliantly when teachers interrogate less, prod less, cue less, reward less, and listen more – in other words, when teachers provide more time for students to think and process information. Teachers can start to create this space by simply extending the time between asking a question and moving to an answer. Sometimes students need this space for reflection (Rowe, 1978).

Discussion is another powerful way for students to engage their own thoughts and incorporate the ideas of others. It helps them to clarify what they have heard, read, observed and experienced. Discussion allows students to test their ideas against those of their peers.

Bridging Worlds

Teachers also enrich the opportunities for their students to learn when they create a bridge between school and the world beyond school. Most students only become actively engaged in their learning when they can relate their work to their lives outside school walls. Students in traditional schools often consider assignments to be “exercises in futility” because the work: (1) does not allow them to use their minds well; and (2) has no intrinsic meaning or value to them beyond achieving success in school (Newman and Wehlage, 1993).

Schools must provide opportunities for students to make three kinds of connections:

- New Learning to What They Already Know;
- Knowledge to Feelings and Values;
- Classroom Experiences to Home and Community Experiences.

Students learn more and learn faster when they have a context for the instruction that means something in their world. They also learn better when their instruction has an experiential component. In fact, research on how students learn suggests that the brain may actually resist learning fragmented facts that are presented in isolation (Caine & Caine, 1991). Thus, it is crucial that instruction help students link new information not only to external events, but also to their personal strengths, their prior knowledge, and their cultural experience (Williams, 1993 and Ladson-Billings, 1994).

Cooperative Learning Strategies

How can teachers help students become more actively engaged, reflect more on their learning and make connections between their learning and their experience?

Cooperative learning refers to a set of instructional strategies that include...student-student interaction over subject matter as an integral part of the learning process. Interaction over subject matter can be as simple as having students in pairs briefly

discussing points of a lecture...or...can be very complex...such as...multi-objective lesson designs. (Kagan, 1999)

Research has shown cooperative learning to have powerful benefits: for students, it improves both academic learning and social skills; for teachers, it supports classroom management and instruction.

Well-implemented cooperative learning:

- Enhances students' enthusiasm for learning and their determination to achieve academic success (Lan and Repman, 1995);
- Increases the academic achievement of students of all ability levels (Stevens and Slavin, 1995a, 1995b) in reading, writing, mathematics computation and application, comprehension and critical thinking (Megnin, 1995, Webb, Trooper, and Fall, 1995; Bramlett 1994; Nattiv, 1994; Hart, 1993; Stevens and Slavin 1995a);
- Improves students' emotional well-being, self-esteem, coping skills and attitudes toward school work (Patterson, 1994; Patrick, 1994);
- Provides training in skills that students need to become effective citizens and successful employees in today's job market (Megnin, 1995; Zhang, 1994; Zuckerman, 1994; Nastasi and Clements, 1993); and
- Benefits all students but minority students in particular (Haynes & Gebreyesus, 1992; Losey, 1995; Meyers & Jones, 1997).

Cooperative learning helps students perceive, learn and understand individual facts and phenomena within a larger context, as they will need to do throughout their lives (Joyce and Calhoun, 1996).

Teaching staff who create opportunities that turn students from strictly individual receivers of information to seekers and providers of learning achieve a vital element of effective instruction. How students will demonstrate their mastery of new knowledge and skills in ways that maintain and even heighten their active engagement becomes the next challenge.

Opportunities...to Perform

Content and Performance Standards

A teacher's understanding of how students learn must be coupled with a clear sense of what is worth learning. School districts and individual teachers need to communicate the standards against which student performance will be evaluated and the reasons those standards matter. Two types of standards are needed: *content standards*, which convey the knowledge and skills that are important, and *performance standards*, which communicate what mastery of this content looks like in student work (how good is good enough).

High Quality Assessment

Assessment of student learning against these standards then becomes the compass that guides opportunities to learn. Ongoing and high quality assessment gives teachers and students direction for their future work together and provides opportunities to celebrate and understand their past efforts.

Existing literature suggests that high quality assessment is more likely when:

- Students can demonstrate their skills in ways that feel real to them;
- Students and teachers use it for mid-course corrections rather than simply summative evaluation; and
- The assessment allows for multiple modes of learning and performance.

The literature provides a wide range of assessment strategies that, when implemented well, have these qualities. Tools such as portfolios, journals, interview notes and student exhibitions from projects within and across disciplines, along with responses to close-ended and structured questions, provide students with a means of showing their knowledge and skills in ways that can connect to their interests and the world around them.

Used throughout the learning process, these tools allow teachers to keep constant track of what students do – and don't – understand (Kane, et al, 1997; Khattri, Kane, and Reeve, 1995; Shepard, et al., 1996). Students, too, gain midstream information about where they need to concentrate greater effort and where they are doing fine. They get new ideas from peer and teacher feedback about ways they can make their projects still more exciting and meaningful. They can talk with their teachers about how to adjust the structure of the project if the mode of learning turns out to be wrong for them. When assessment tasks extend over several days – as do many high quality assessment tasks – students have time to reflect on their work, revise and polish it (Cole, 1995).

Research suggests that open but guided discussions among teachers and students about the quality of student work – about what's important to learn (content standards) and what constitutes good work (performance standards):

- Help students learn to evaluate the strengths and weaknesses of their own work (Duschl & Gitomer, 1997);
- Provides teachers helpful “first takes” on students levels of understanding (Minstrell, 1989; Yackel, Cobb, & Wood, 1991);
- Help students learn how to tackle problems (Newmann, 1996; Wiggins, 1993);
- Improve academic achievement and increase the likelihood that students will use their knowledge and skills in new situations (Wiggins, 1993); and
- Lead to persistence in trying to answer the right questions (Wiggins, 1993).

Reconciling High Quality with High Stakes Assessment

Creating enriched and diverse opportunities for students to perform means offering them more than one way to show what they know and are able to do. In the current and foreseeable education policy environment, however, high quality assessments must also help students perform on the high stakes assessments that increasingly affect their lives.

State and local districts have done considerable work to articulate standards – both content and performance standards – but they have paid less attention to the actual means of assessment. It

falls to teachers not only to ensure students' mastery of the content and skills included on the high stakes assessments but also to make students comfortable with the way state assessments measure that mastery. To achieve these dual goals, ongoing assessments of student progress need to reveal how students are doing against state and district standards as well as the standards that teachers and students have set for themselves. Ongoing assessments should include the format used in high stake tests, though they should not be restricted to that means alone.

Such ongoing assessments can advance, not just monitor student learning and provide teachers opportunities to see what effects change in their instruction is having on student learning. Support for teachers to access and develop ongoing assessments that meet these criteria is critical and will be discussed in Section 2 of this paper.

Opportunities...to be Recognized

“ A school teaches in three ways: by what it teaches, by how it teaches, and by the kind of place it is.”

Lawrence Downey

By teaching in ways that actively engage students around meaningful content directly tied to high academic standards, we go a long way toward creating the kind of place where students can be successful.

But most schools now implementing FTF have been places where:

- Large numbers of students were not accomplishing much in their own or their teachers' eyes;
- Many students' strengths and needs were known only to them, and their outward behavior did little to invite positive attention from others; and
- Responsibility to others meant, for many students, just staying out of trouble.

In these schools it will take a conscious, directed effort to create a safe and secure learning environment for innovative instruction, meaningful and rigorous curriculum and high quality assessment to have their full impact. An important element in developing such an environment

is to recognize all students – their accomplishments, their strengths and needs and their responsibilities as members of the learning community. There is strong evidence that psychological well-being among students is significantly related to academic achievement (Evertson, Anderson, & Brophy, 1980) and that sense of well-being comes in classrooms where students feel they are accepted, can take intellectual risks and experience comfort and order (Albert, 1996; Marzano, 1992).

FTF schools reorganize themselves into small learning communities, where teachers can interact with students in smaller groups over longer periods of time and get to know students and their families better. These changes create favorable conditions for students to receive more positive attention. But providing all students' opportunities to be recognized requires every teacher to make it their everyday work:

- To respect all students' ideas and to encourage students to value effort as well as accomplishment;
- To encourage intellectual risk-taking; and
- To use the smaller student/adult ratios and more longstanding relationships to learn more about students' individual strengths and needs.

Now we move to the next FTF critical feature that focuses on teaching and learning but from the perspective of the adults in the school.

SECTION 2

III. Equip, Empower and Expect All Adults to Improve Instruction

“Teachers cannot create and sustain the conditions for productive development of children if those conditions do not exist for teachers.”

Seymour Sarason

When the staff at Central Park East Secondary School in Harlem determined that they wanted to be judged on their students’ ability to think, they found that they had to develop the same habits of mind they were demanding of their students. They needed to actively engage in learning about their content and their pedagogy. They needed to connect their understanding of how and what to teach to who they were and to the world outside of school, and they needed to assess and reflect on their work.

Just as teaching staff need to structure classrooms to support cooperative learning, they need to structure their own time and working relationships – with support from their districts and schools – to encourage reflection together and individually.

Ongoing dialogue about teaching and learning among faculty and staff not only fosters the sharing of information and ideas, but also creates the trust necessary to abandon comfortable but ineffective practices and take on challenging but rewarding new approaches (Louis, Marks, & Kruse, 1996). In contrast, schools where teachers are essentially free agents, doing – and protecting – their own thing create an environment where teachers are less likely to be innovative. Teachers in these schools are more likely to report isolation, lack of support from colleagues, and feelings of burnout. They are more likely to lower expectations for students, especially minority and low-performing students, and to report low levels of commitment to teaching (McLaughlin, 1993). Time to talk, people to talk with, smart ideas that spark more

smart ideas and a school climate that invites honest inquiry all must exist if instruction is to improve in all classrooms (Lichtenstein, McLaughlin, & Knudsen, 1992; McLaughlin, 1993). First Things First, in partnership with district and building colleagues, equips, empowers and expects districts and schools to create these conditions because they lead to improved instruction.

Equip All Staff to Improve Instruction ...*With Time, People, Information and Ideas*

FTF schools organize themselves into small learning communities (SLCs) so that a small group of teachers (7-10) and students stay together for longer periods of time across the school day and across multiple years. Like small schools, small communities within larger schools have been found to lead to a stronger professional community, more collaboration and higher levels of satisfaction among staff members (Wasley, et al., 2000). Adult members of small learning communities share collective responsibility for their students; they also have more time together to improve their instruction through daily common planning time and common professional development both during and outside school hours. FTF also encourages districts to provide additional time for staff from across small learning communities and buildings to work within disciplinary teams and across school levels (elementary, middle and high schools) to strengthen instruction.

But how do teaching staff best use this time to ensure that students' learning experiences improve? With supports that include time, information and new ways of learning together staff do three things:

- Build a repertoire of instructional strategies that promote active engagement of students, learning connected to their experience and student reflection on their learning;
- Work together to create, select and deploy high quality learning activities – what teachers and students actually do to assure mastery of standards; and
- Deepen dialogue around instruction and its effects on student work.

Building Repertoire

- FTF begins its support for improving how teachers teach with activities focused on the cooperative learning strategies discussed earlier. Why cooperative learning strategies? First, they work – research cited earlier has shown that, when implemented well, they lead to higher levels of engagement and thinking by diverse students. Second, the most basic strategies are simple and easily implemented by teachers across grade levels and curriculum areas. And third, they don't require immediate reworking of curriculum – they can be integrated into current curriculum.

New Learning Activities

Learning new ways to teach is a key element in improving instruction. Examining what is taught is essential as well. The structure for these discussions is a course-by-course inventory to examine whether the content and the expected levels of mastery for all students are aligned with district and state standards. Once the inventory identifies gaps between standards and curriculum, the district and FTF national staff can provide supports to fill those gaps with high quality learning activities. These activities do the following:

- Lead to mastery of the highest priority content standards for that course of study;
- Establish clear expectations for all students to meet or exceed grade level performance standards;
- Provide students with curriculum and materials that are diverse, meaningful and aligned with the standards;
- Draw on the repertoire of effective instructional strategies; and
- Employ varied assessment strategies, including those that prepare students for high stakes assessments.

Deepening Dialogue

Dialogue among teachers with different levels of experience and expertise is the fuel for the instructional improvement engine. Structured training around building repertoire and around creating and accessing new learning activities can lay the groundwork for the dialogue. In

addition, specific training and practice in how to talk about teaching and its effects on student work is essential. But for sustained and meaningful improvement in teaching to occur in every classroom every day, repeated and focused dialogue among teachers about what they teach and how they teach must be a core part of the school's and the district's culture.

Empower All Adults to Improve Instruction

Even when teachers have the training, support and materials to improve instruction, they still need reason to change. They need to believe that they have the power to make a difference – sometimes a greater difference than they have envisioned for a long time.

Teachers are empowered when they experience choice and efficacy. Choice comes when teachers decide what learning activities will maximize their students' learning in a particular situation. Efficacy comes when they are confident that the strategy they choose will work.

For many teachers the first component of empowerment exists now. Most teachers decide how to teach, even if they are working from a highly structured curriculum. But data on student performance powerfully demonstrates that many teachers do not experience the second component: their decisions are not yielding the results they want. When teachers are equipped with the training, ongoing coaching and support, opportunities for dialogue with their colleagues and access to high quality learning activities for their students, both components of empowerment – choice and efficacy – come within their grasp. Most teachers will then choose to become agents of change.

Expect All Staff to Improve Instruction

FTF supports districts and schools to equip and empower teachers to improve instruction. Along with these responsibilities come the expectation for teachers that they will achieve that goal.

There is much to learn from what has not worked in other efforts to change teaching and learning. For example, we know we cannot shame, tell, demand, threaten, cajole, encourage, cheerlead or seduce people into "doing a better job." It also does not work to deputize a small group to do the needed learning for the larger school community. Instead, we must create a workplace where continual learning for everyone, staff and students alike, is the norm.

According to recent research (Little, 1993; Renyi, 1996; Sparks & Hirsch, 1997), effective professional development:

- Must be part of the every day reality of schools and of all teachers' work – not delivered at the Holiday Inn to the choir, who are then expected to bring it back to the entire congregation at school;
- Is coherent and rigorous, not idiosyncratic, voluntary and spottily implemented;
- Allows teachers to find out what they're doing now that's working and what's not – not presume that everything must go or everything must stay; and
- Is sustained over the long term – not considered finished when the initial training is done.

Teaching staff also bears responsibility for giving the new practices a chance and sustaining instructional improvement in every classroom. Leaving the comfortable, even if it's ineffective, is hard to do. One of the most difficult parts of any change process is giving it a chance to work. With instructional improvement, this means trying a new cooperative learning strategy or another, new standards-based learning activity enough times to learn how to judge when to use it and when to use another approach. For those who have tried to master a new stroke in tennis, a new diet, a new golf swing, a new way to respond to a screaming toddler, the first few times hardly seem worth the effort. The real test of the change's value only comes when the change is consistently and effectively implemented – in this case, when the instructional strategy is done well enough to see its effects on student work.

Looking at student work to assess the effectiveness of these new practices should eventually occupy significant proportions of both common and individual planning time as well as early release and district-wide professional development events. Along the way, these opportunities

for professional development will have to be efficiently and carefully planned in ways that maximize learning for all teachers involved.

IV. Final Thoughts

Improving the quality of teaching and learning in every classroom every day is the most daunting challenge of FTF or any educational reform. Why do we think the approach just described is the right one?

First, the approach is consistent with what we know from current research and our own experience about:

- The kinds of learning experiences diverse students need to perform at high levels;
- The kinds of learning structures and standards-based learning activities that ensure that all students have these learning experiences; and
- What it takes for all adult learners working in relatively low resource schools to develop, sustain and expand their repertoire of effective instructional practices.

Second, we believe the will and skill to implement this approach is available at the FTF sites and to the FTF national team. This combination of local and national resources, we believe, is sufficient to get this approach on the ground and sustained over time.

Third, we can track progress of the approach using valid and reliable measures of changes in teaching and learning and make adjustments along the way.

By drawing on the best of what is known; by working with people who are committed to doing whatever it takes to achieve success for all students; and by taking stock and learning as we go, meeting this most daunting challenge of education reform is within our grasp.

Table 1
**Indicators of Enriched and Diverse Opportunities for Students
to Learn, Perform and Be Recognized**

More emphasis on higher-order thinking	Less emphasis on rote memorization of facts and details
More challenging and complex technical and literary content	Less content below grade level
More experiential, inductive, hands-on learning activities	Less whole-class, teacher-directed instruction (e.g., lecturing)
More activity, sound and student movement in the classroom as students work together doing things and talking about them	Less prizing and rewarding of silence, compliance, sitting, listening and receiving information
More collaborative work with shared products but retaining individual accountability and recognition	Less student time spent working in isolation and competitively.
More enacting and modeling the principles of democracy	Fewer adult pre-determined rules and roles.
More choice for students and teachers among standards-based learning activities that respect students' and teachers' interests and prior experiences;	Less teacher- and student-proof curriculum.
More diverse ways of sharing information between teacher and student;	Less sole focus on one method of instruction.
More emphasis on individual student growth and gains toward mastery of course standards;	Less focus on comparing individual scores to group norms or averages as the basis for course grades and promotion.
More <u>ongoing</u> standards-based assessments using multiple forms of assessment, including approaches students will encounter on high stakes assessments;	Fewer isolated test preparation activities around high stakes standardized tests

References

- Albert, L. (1996). Cooperative discipline. Circle Pines, Minnesota: American Guidance Service, Inc.
- Bramlett, R.K. (1994). Implementing cooperative learning: A field study evaluating issues for school-based consultants. Journal of School Psychology, 32(1), 67-84.
- Caine, R., & Caine, G. (1991). Making connections: teaching and the human brain. Alexandria, Virginia: Association for Supervision and Curriculum Development.
- Cole, R. (Ed.). (1995). Educating everybody's children, Alexandria, Virginia: Association for Supervision and Curriculum Development.
- Csikszentmihalyi, M., Rathunde, K., & Whalen, S. (1993). Talented teenagers: The roots of success and failure. New York: Cambridge University Press.
- Duschl, D.H. & Gitomer, R.A. (1997). Strategies and challenges to changing the focus of assessment and instruction in science classrooms. Educational Assessment, 4(1), 37-73.
- Everston, C., Anderson, L., & Brophy, J.E. (1980). Relationship between classroom behaviors and student outcomes in junior high mathematics and English classes. American Educational Research Journal, 17(1), 43-60.
- Hart, L.D. (1993). Some factors that impeded or enhance performance in mathematical problem solving. Journal of Research in Mathematics Education, 24(2), 167-171.
- Haynes, N., & Gebreyesus, S. (1992). Cooperative learning: A case for African-American students. Review of School Psychology, 21(4), 577-585.
- Joyce, B., & Calhoun, E. (1996). School renewal: An inquiry, not a prescription. In B. Joyce & E. Calhoun (eds.), Learning experiences in school renewal: an exploration of five successful programs (pp. 175-90). Eugene, Oregon: ERIC Clearinghouse on Educational Management.
- Kane, M. B., Khattri, N., Reeve, A. L., & Adamson, R. J. (1997). Assessment of student performance. Washington, D.C.: Studies of Education Reform, Office of Educational Research and Improvement, U.S. Department of Education.
- Khattri, N., Kane, M. B., & Reeve, A. L. (1995). How performance assessments affect teaching and learning [Research Report]. Educational Leadership.
- Ladson-Billings, G. (1994a). The dreamkeepers: Successful teachers for African American children. San Francisco: Jossey Bass.

- Ladson-Billings, G. (1994b). What we can learn from multicultural education research. Educational Leadership, 51(8), 22-26.
- Lan, W.Y., & Repman, J. (1995). The effects of social learning context and modeling on persistence and dynamism in academic activities. Journal of Experimental Education, 64(1), 53-67.
- Lichtenstein, G., McLaughlin, M.W., & Knudsen, J. (1992). Teacher empowerment and professional knowledge. In A. Lieberman (ed.), *The changing contexts of teaching. Ninety-first yearbook of the National Society for the Study of Education. Part I.* (pp. 37-58). Chicago: The University of Chicago Press.
- Little, J.W. (1993). Teachers' professional development in a climate of education reform. Education Evaluation and Policy Analysis, 15, 129-151.
- Losey, K.M. (1995). Mexican American students and classroom interaction: an overview and critique. Review of Educational Research, 65(3), 283-318.
- Louis, K.S., Marks, H.M., & Kruse, S. (1996). Teachers' professional community in restructuring schools. American Educational Research Journal, 33(4), 757-798.
- Marzano, R. (1992). A different kind of classroom: Teaching with dimensions of learning. Alexandria, Virginia: Association for Supervision and Curriculum Development.
- McLaughlin, M.W. (1993). What matters most in teachers' workplace context. In J.W. Little & M.W. McLaughlin (eds.), *Teachers' work: individuals, colleagues, and contexts*. New York: Teachers College Press.
- Megnin, J.K. (1995). Combining memory and creativity in teaching math. Teaching PreK-8, 25(6), 48-49.
- Meyers, C., & Jones, T. (1993). Promoting Active Learning. San Francisco: Jossey-Bass.
- Minstrell, J.A. (1989). Teaching science for understanding. Yearbook (Association for Supervision and Curriculum Development), 1989, 129-49.
- Nastasi, B.K., & Clements, D.H. (1993). Motivational and social outcomes of cooperative computer education environments. Journal Of Computing In Childhood Education, 4(1), 15-43.
- Nattiv, A. (1994). Helping behaviors and math achievement gain of students using cooperative learning. Elementary School Journal, 94(3), 285-297.
- Newmann, F. M. (ed.). (1996). Authentic achievement: Restructuring schools for intellectual quality. San Francisco: Jossey Bass.

Newmann, F. M., & Wehlage, G. G. (1993). Five standards of authentic instruction. Educational Leadership, 50(7), 8-12.

Patrick, J. (1994). Direct teaching of collaborative skills in a cooperative learning environment. Teaching and Change, 1(2), 170-181.

Patterson, V.E. (1994). Introducing cooperative learning at Princess Elizabeth Elementary School. Education Canada, 34(2), 36-41.

Renyi, J. (1996). Teachers take charge of their learning: transforming professional development for student success. New York: National Foundation for the Improvement of Education.

Rowe, M.B. (1978). Wait, wait, wait. Science and Mathematics, 78, 207-216.

Shepard, L.A., Flexer, R.J., Hiebert, E.H., Marion, S.F., Mayfield, V., & Weston, T. J. (1996, Fall). Effects of introducing classroom performance assessments on student learning. Educational Measurement: Issues and Practices, pp. 7-18.

Sparks, D., & Hirsch, S. (1997). A new vision for staff development. Alexandria, Virginia, and Oxford, Ohio: Association for Supervision and Curriculum Development and National Staff Development Council.

Stevens, R.J., & Slavin, R.E. (1995a). Effects of a cooperative learning approach in reading and writing on academically handicapped and non-handicapped students. The Elementary School Journal, 95(3), 241-262.

Stevens, R.J., & Slavin, R.E. (1995b). The cooperative elementary school: effects on students' achievement, attitudes, and social relations. American Educational Research Journal, 32, 321-351.

Wasley, P., Fine, M., Gladden, M., Holland, N.E., King, S.P., Mosak, E., & Powell, L.C. (2000). Small schools: great strides. A study of new small schools in Chicago. New York: The Bank Street College of Education.

Webb, N.M., Trooper, J., & Fall, R. (1995). Constructive activity and learning in collaborative small groups. Journal of Educational Psychology, 87(3), 406-423.

Wiggins, G. (1993). Assessment, authenticity, context, and validity. Phi Delta Kappan, 75(3), 200-214.

Williams, S.R. (1993). Mathematics and being in the world: Toward an interpretive framework. For the Learning of Mathematics, 13(3), 2-7.

Yackel, E., Cobb, P., & Wood, T.L (1991). Small-group interactions as a source of learning opportunities in second-grade mathematics. Journal for Research in Mathematics Education, 22, 390-408.

Zhang, Q. (1994). An intervention model of constructive conflict resolution and cooperative learning. Journal of Social Issues, 50(1), 99-116.

Zuckerman, G.A. (1994). A pilot study of a ten-day course in cooperative learning for beginning Russian first grades. Elementary School Journal, 94(4), 405-420.

