

Core Principle 2: Instruction

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The second of the core principles on which the State Board of Education bases its consideration of redesign of the system is: *All students must be provided appropriate instruction to successfully learn the essential standards.* The following principle and indicators will be addressed in this paper:

All students must be provided appropriate instruction to successfully learn the essential standards.

- (a) The help needed by each student to complete the essential learning is provided.
- (b) Each school offers a variety of instructional delivery systems to assist each student in learning the essential curriculum.
- (c) Teachers actively engage students in learning experiences that are contextual and require application of learning.
- (d) Teachers use technology as an instructional tool when appropriate and as a learning tool for all students.

Introduction

In the purest sense of the word, instruction is what teachers do that result in student learning. This implies much more than the act of conducting class activities. For the purposes of considering redesign of the system, instruction should be thought of as that holistic body of decisions that together produce the learning that has been identified for students. The term “instruction” refers to the combination of decisions made at the classroom, building, district, or policy making level that matches standards to effective strategies, leads to the assessment of effective progress and makes adjustments as appropriate in order to assure all students meet or exceed academic standards. It includes choosing what to teach (the curriculum), how to teach it (delivery strategies) and how to determine what learning occurred (assessment.) Marzano (2003) lists a guaranteed and viable curriculum as the school level factor having the most impact on student improvement, followed by challenging goals and effective feedback. Both of these are components of what is referred to as “instruction.”

In a traditional school system, goals for learning emphasized factual content. However, the redesign of schools for the 21st century must make the ability to think critically and creatively an essential outcome of instruction. This emphasis on how to use and apply content (factual information) in meaningful ways adds value to the economy and to the quality of life for all. Erickson (1995, p. 34)) describes it this way, “The student who memorizes and recites a complex chemistry formula has *information*; the student who uses the formula to create something new has *knowledge*.”

Raising academic standards for the future is more about elevating thinking processes than covering new topics. In her later book entitled ***Concept-Based Curriculum and Instruction: Teaching Beyond the Facts***, Erickson notes, (p. 122) “The public needs to be informed that the 21st century requires a higher standard for curriculum and instruction. This standard includes the development of critical and creative thinking; the ability to put knowledge to use in complex living, learning, and working performances; and an instructional program that gives teachers

flexibility in engaging students with process and skill development.” She points out that redesigning curricula to develop thinking is hard work; teaching students to think is even harder.

The Northwest Regional Educational Laboratory Report (1999) listed specific components of instruction, including:

- Teachers carefully orient students to success.
- Teachers provide clear and focused instruction.
- Teachers routinely provide students feedback and reinforcement regarding their learning progress.
- Teachers review and re-teach as necessary to help all students master learning material.
- Teachers use validated strategies to develop students’ critical and creative thinking skills.
- Teachers use effective questioning techniques to build basic and higher level skills.

Lambert in her work and the work of Costa and Kallick (2000), list the activities of teaching (e.g., instruction) as: modeling, coaching, scaffolding, articulation, reflection and exploration. Different labels can be applied to the many components involved in instruction, but it should be clear that instruction is really a series of complex decisions and actions designed to support and maximize the opportunity for student performance to reach the standard selected. It should also be clear that while teachers meet face to face with students to deliver instruction, decisions made at other levels have a significant effect on the conditions of those teacher actions. A redesigned system supporting instruction must account for those forces as well.

Research

There is a growing body of research on the elements and processes involved in the role effective instruction plays in improving student performance. Much of this action came in response to two national reports. The Coleman Report (1966) and one of the most seminal pieces, A Nation at Risk (1983), concluded that what happened at school did not make much difference in student learning.

Larry Lezotte and others set out to develop a body of research counter to this notion, in support of their premise that all children can learn and that the school controls the factors necessary to assure student mastery of the core curriculum. They identified that the most effective schools maintained a strong instructional focus. Kansas was among the first states to apply these concepts to a state plan and Quality Performance Accreditation was adopted in the early 1990’s. From that time on, the importance of quality instruction has been a center piece of school improvement efforts in Kansas.

Jere Brophy and Thomas Good (1986) and others stated that the most important factor affecting student learning is the teacher. However, their research results demonstrated wide variation in effectiveness among teachers. The immediate implication of this finding is that more can be done to improve education by improving the effectiveness of teachers than by any other single factor. This became the driving premise of the work of the National Commission on Teaching and America’s Future and led to their report, “What Matters Most: Teaching for America’s Future” in 1996. The Kansas State Board of Education has responded to this research by adopting high standards for teacher quality in the state’s newly revised licensure system.

Another shift in research focus was the move away from an almost exclusive emphasis on the individual school as the unit of change. School improvement that results in increased student achievement can only be sustained with strong district support, because that is where resources are controlled and policies established. Additionally, there is also a growing recognition of the need to focus on the individual student. In setting its three strategic goals, the Kansas State Board of Education realized that the base of the system design must focus on all three levels of change—individual, school and district—while moving from providing *opportunity for all* to ensuring *learning for all* students to high standards. This shift in thinking has tremendous impact on how instruction must change and on what processes will be effective in bringing that about.

The State Board was right on target by making “appropriate instruction for learning the essential standards” one of the core principles in redesigning the system for educating Kansas students. The quest for the future becomes “***What does an effective teacher do that makes him/her effective and how can we enable more teachers to perform at that level?***”

The authors of *Classroom Instruction that Works (2001)* reported that “...up until about 30 years ago, teaching had not been systematically studied in a scientific manner.... At the beginning of the 1970’s however, researchers began to look at the effects of instruction on student learning.” The importance of these findings is easy to understand when put in the context of changes in student scores. That same source cites *Rosenthal(1991)* and *Hunter and Schmidt (1990)*, “*The average student who attends a “good” school will have a score that is 23 percentile points higher than the average student who attends a poor school.*” This has inspired other research focused on what an effective teacher *does* that makes him/her effective and on the systemic issues that influence the ability for these actions to occur.

It must be noted, though, that significant progress in using research to make decisions about instruction and actually impact instructional practice is being hampered by the inadequacy and confusion of the existing research, its unavailability to school and district-level staff, and a reliance by staff on decision-making patterns that focus on philosophy rather than effects. (Corcoran, 2003). However, researchers provide more information today than has ever been available to those who wish to improve instructional practice or change classroom conditions that affect instruction at the building or district level.

Much research has focused on identifying those factors that make a positive difference in children’s learning. This research, often referred to as “Effective Schools Research” addresses the importance of instruction to learning the essential standards. Some of the factors that positively impact instruction include the following:

Collaborative Climate: Climate in a school must be safe and orderly. A school climate that is conducive to teaching and learning best promotes effective instructional practices that maximize student success.

High expectations: An expectation is the internal belief system that the adults have that students can and will meet high standards. Both high standards and high expectations are needed.

Assessment: Multiple and frequent measures of student academic progress are components of best instructional practice when the results are used to improve individual performance and to improve the instructional program.

Time: It is no surprise that research finds students tend to learn most the things that they spend time on. Good, et al. (1986) cites research from Wiley and Harnischfeger (1974) that show time spent in instruction is positively correlated with school achievement. Adding more instructional time means altering schedules and making choices on essential content, as already mentioned. Managing time is difficult at best when planning instruction because interruptions in the day-to-day flow of routines in the classroom and in the schools seriously and significantly detract from the ability to be effective for all students. Finally, traditional school calendars often are based on factors unrelated to best practices for learning.

Differentiated Instruction: Differentiated instruction represents a proactive approach to improving classroom learning for all students by providing alternative learning opportunities. These learning opportunities differentiate the content, process, products, learning environment and assessments used for instruction. It bases instruction on students' abilities, needs, and interests and allows students to work at their own pace to learn required concepts and spend more time on developing expertise on related topics. Collaborative teaching models are emphasized.

Student Engagement: The work of Schlechty and others indicates that learning is more likely to occur when students are authentically engaged. "School work" is a form of work intended to produce learning. Teachers control the content of the curriculum they actually deliver to students and the qualities and characteristics of the tasks assigned. Good teachers ensure that each child has the opportunity to learn what it has been judged necessary for him or her to learn to be considered well educated in our society. By ensuring that the schoolwork provided students is engaging and requires them to work on and with the knowledge and skills they are expected to acquire and master, the teacher increases the probability that each child will learn what he or she needs to learn.

Collaboration: Establishing an atmosphere of collegiality and professionalism is a necessary condition for student achievement. Research consistently reports that schools perform better when teachers work in focused, supportive teams. Instruction improves when teachers have the opportunity and the skills to collaborate with and learn from each other.

Research also indicates that leadership is the catalyst for establishing and maintaining the focus on instruction. The presence of a good leader, keeping the focus on the most effective or most needed practices can change a school's passing rate from 50 to 72% (Waters, et al, 2003, McREL). In the work by McREL on building level leadership, Waters et.al. (2003) found a substantial relationship between leadership and student achievement, based on thirty years of research about the effect of leadership on student achievement. One standard deviation improvement in leadership practices is associated with increasing the average student achievement from the 50th percentile to the 60th percentile.

Research is also available on classroom teaching strategies. As teachers collaborate to make sure all students learn the intended curriculum, they are able to seek out information on classroom strategies that can make a difference in student performance. Marzano (2001) and McREL(2001) researchers identified nine specific instructional strategies most likely to have a positive impact on instruction. Based on a meta-analysis of the research, their findings include the magnitude of the impact (effect size) each is most likely to have on the improvement of student achievement across all content areas and across all grade levels. In *Classroom Instruction that Works (2001)*, the researchers present practical information that can be used by educators working on improvement of instruction at the classroom level and beyond. These researchers are quick to add that no instructional strategy works equally well in all situations. Effective instruction includes choosing when to use each of the nine. A list of the nine strategies with effect sizes is included in the appendix at the end of this section.

The research on technology as a tool to enhance instruction is not as well defined. Futurists declare it will change the roles of leadership, educators, students and families. More attention is needed on adult learning strategies that place both curriculum and literacy ahead of software and technology. The most effective learning strategies involving technology require a change in the ways teachers spend their time and the ways they work together. These changes will break down isolation, facilitate the work of teams, and provide ample time for program development. Real change in the effective use of technology requires attention to organizational issues rarely addressed by those installing networks and computers.

In an article in *School Administrator* magazine, Alan November advises educators to shift the focus from “what technology should we buy?” to “What information should teachers and students have access to?” and “What relationships do we want to support between our students and the world?” He says that the tough issues have to do with redesigning the organization so the investment in technology really pays off and suggests that schools target the investment in technology to specific curricular objectives—the most difficult-to-learn concepts in the curriculum. He urges leaders to support risk-taking teachers who want to rethink organizational structures.

The North Central Regional Technology in Education Consortium (ERS Spectrum, Winter 2001) offers these guidelines for planning the use of technology to improve instruction:

1. What is your vision for learning?
What educational technology skills will be a part of your curriculum and how will teaching them to students and staff enhance and support your broader instructional goals?
2. How will you use technology to support your vision of learning
How will technology be used to support learning programs for all students?

There are a growing number of examples of practices that demonstrate effective uses of technology as a learning tool. Handhelds, an inexpensive alternative to desktops, are finding a home in some schools. Reports include use of these instruments from the elementary level through high school and for students with disabilities as well as those in the general education program. An article in the *American School Board Journal* (September 2003) highlights results of a 2002 study of more than 100 teachers. Eighty-nine percent of teachers said handhelds are an effective instructional tool and 75% who let students take them home reported an increase in homework completion.

Vision

When Willard Daggett was head of Vocational Education and Language Arts for the state of New York in 1991, he stated that, “American Education is (like) using a rearview mirror approach to curriculum and instruction. We do what we have always done, because that is what we know.” Education does need a new curricular and instructional model, but not because of teacher or administrator failures. Rapidly changing societal needs centered on economics, demographic factors, and politics have created a systems problem. Based on the research and the experience in Kansas and elsewhere, a vision for the core principle of instruction can be formulated.

A redesigned system where all students receive appropriate instruction to successfully learn the essential standards must be grounded in a pervasive and broadly understood instructional focus. All staff must accept responsibility for all students and believe that all students can learn at higher levels, in a model of continuous improvement.

Under the older fact-based paradigm, *depth of instruction meant teaching more facts about a topic*. In the newer paradigm, depth of instruction means *teaching higher level thinking related to a significant concept and theme, problem, or issue by connecting ideas across disciplines to extend understanding, find answers, foster generalizations, and create new knowledge*. (Erickson, 1995) A redesigned system places an increased emphasis on critical and creative thinking.

This system of instructional focus provides the following benefits:

- Provides teachers with the flexibility in HOW to teach by focusing on WHAT to teach.
- Emphasizes key skills for every student.
- Allows students to retain skills in order to build higher skills.
- Removes subjectivity and replaces it with a focus on results.
- Contributes to a climate of achievement and success.
- Aligns planning, instruction, assessment, and support toward student performance.
- Offers a proven approach that achieves results.

In the redesigned system, the work of improving teaching and learning is considered serious work. Learning experiences are meaningful and require application of learning. Each student receives the help needed to master the essential curriculum and teachers collaborate to find the appropriate instruction. Instructional outcomes focus on developing critical thinking and problem solving skills. High capacity schools focus on developing teachers’ competence in instruction and assessment. Teachers, principals, and district leaders know best instructional practices. They understand the purpose, role, and value of assessments. They collaborate on data-gathering techniques, setting results-based goals, and using data to inform continuous practice.

Support staff is available to assist teachers as they identify essential learnings and construct seamless curriculum across all levels, and make other decisions about the status of curriculum and instruction in the system. Support is available to provide a variety of instructional delivery

systems to meet the needs of all students. Efforts to keep all students involved in meaningful learning opportunities are relentless.

All staff participate in continuous learning and staff development is of the highest priority in distributing resources, including time and support staff to assist carrying this out. All staff are connected to high quality research and have opportunities to access quality staff development appropriate to their assignment. Time is provided for staff to learn about research and to share best practice with others. Staff development is planned collaboratively, with the expectation that all staff will participate—including the superintendent and board members as appropriate.

Practitioners are actively involved in solving problems in core areas and teachers are actively involved in research, not just submissive partners in projects directed by researchers whose interests may not match their own.

As a result of this intense focus on applied instruction, staff must change their practices. A spirit of collaboration drives problem solving with a sense that all of us are smarter than any one of us and everyone's input is respectfully received as progress toward the vision is planned and implemented. Responsibility for student learning is shared because a common vision is shared by all staff and the school community. As described by Schlechty (2002), shared responsibility is not accomplished by a piece of legislation, a grant program, a single leader, or a few interested teachers or parents. Rather, shared responsibility is the work of all.

Classified staff continuously refine and improve non-instructional processes to ensure programs and systems run efficiently and effectively and do not detract from the business of learning. They understand how their work supports teaching and learning and its impact on children and families. They work collaboratively with teachers and principals to get things done and receive feedback on the quality of the services provided.

Students are engaged in their learning. They are aware of different learning styles and know how to self-assess their skills and capabilities. They understand how to set personal goals that are meaningful and challenging.

Parents are included in defining the aims of education and know how the importance of good instructional practice. They are active partners in their children's educational experiences and know how to support their children's learning. They partner effectively with school personnel, work with school and community resources to achieve goals for their students, agree on the importance of success for all students, and are willing to help the schools accomplish this vision.

Leaders: In this redesigned system, district leaders, principals, and teachers view themselves as teammates, not competitors, in efforts to make all students successful. Developing leadership capacity is a visible goal, beginning in classrooms and extending to adults throughout the organization. Programs for developing leadership capacity are offered at all levels within the system. Teachers and administrators work together to identify essential learnings, align curriculum and assessment, and reflect on student success. Data is used to make sound decisions about instruction, for individual students, and for groups and subgroups. The Board of Education understands the vision for all students and adopts policies and provides resources to support learning for all.

Technology is selected based on its contribution to the instructional program and identified student needs. Teachers use technology to construct meaningful learning experiences for students. Technology is also used to connect students to the world beyond the classroom and local environment. In addition, technology assists teachers, administrators and others in gathering, organizing, and managing data that is needed to make good instructional decisions. User friendly student management and data analysis software allow teachers to make use of this technology in the classroom.

Changing the instructional system can start at the level of the schoolhouse, but it cannot be sustained without support from the community at large. The community must agree with the essential standards and have an opportunity to participate in conversations about the instructional delivery systems necessary to meet them. State policymakers, business leaders, civic leaders, and board members must know the priorities of the education plan. Additionally, they must be educated about the high cost of making constant changes in direction and of layering reforms over one another, they must understand that research findings should suggest policy options or components of a local response to a problem, and that determining what works best in a particular district requires the knowledge of its existing commitments, its history, its resources, and its political climate.

Recommendations for the Kansas State Board of Education to Consider

In 1966, the National Commission on Teaching and America's Future issued its report "What Matters Most: Teaching for America's Future investing in quality education." The report called for a sustained commitment to teachers' learning and school redesign and presented recommendations related to instruction in order to dramatically enhance school performance for all of America's children. Marzano et al (2001) listed three actions required to transform schooling and teaching to more of a science than an art. Summaries of the National Commissions report and of Marzano's list are included in the appendix. What follows below combines the major ideas from those two sources with additional comments specifically referencing the current situation in Kansas and the State Board's focus on redesigning its system.

1. The research on instruction and schooling must be synthesized and made readily available to educators.
 - Put practices in place to make research available to educators in all Kansas schools.
2. Schools and districts must provide high-quality staff development relative to effective practices identified by research.
 - Advocate for time and resources that give all Kansas educators access to quality staff development appropriate to the needs of their instructional improvement efforts.
3. Inspire a desire to change and a commitment to weather the storms that will occur as the change evolves
 - Recognize that change will not be popular with everyone. Accept leadership responsibilities for keeping the focus on improvement of instruction and changing practices as necessary to ensure learning for all students.
 - Ensure that all schools have access to appropriate coaching and feedback relative to their acquisition of the effective strategies.
 - Allow for differences in implementation as strategies are adopted in the particular context as determined locally.
 - Celebrate and build on successes.
4. Adopt policies and procedures that organize schools around learning and teacher/student success.
 - Assist districts in establishing systems for gathering, organizing, analyzing, and interpreting data to use in making instructional decisions.
 - Recognize the importance of efforts outside the classroom to provide support for teachers in learning and implementing best practices.
 - Recognize that for improvement to occur, instruction must align with standards and assessments.
5. Recognize the importance of leadership for school improvement
 - Invest in leadership training programs.
 - Recruit and train quality administrative leaders.
 - Support leadership for developing and aligning curriculum, pre k-12.

- Provide opportunities for administrators to share best practices and learn from each other.
6. Invest in recruitment and retention of quality teachers
 - Encourage and reward teacher and leadership knowledge and skills.
 - Continue to require that teachers demonstrate they are qualified in the subjects they teach.
 - Invest in instructional training programs.
 7. Encourage greater communication/collaboration
 - between district and school leaders and the State Board of Education
 - between/among school districts
 - between districts and community pre-school programs
 - between districts and community agencies
 - between public education and higher education, especially teacher preparation programs.
 8. Keep in mind that change takes time
(Schlechty's work says it takes 7 years to accomplish lasting change.)
 9. Set the tone for civil discourse
Suggested questions to implement civil discourse about improving student performance:
 - Is the subject related to the primary mission of improving student achievement for all children in the state?
 - Is the presentation supported by evidence that can be independently verified?
 - Can the advocate answer thoughtful questions from the other side (or merely parrot a prepared speech)?
 - Can the advocate respond to challenges with thoughtful answers in an environment of civility and respect?

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APPENDIX

Nine Instructional Strategies That Affect Student Achievement

Category	Effect Size	Percentile Gain
Identifying similarities and differences	1.31	45
Summarizing and note taking	1.00	34
Reinforcing effort and providing recognition	.80	29
Homework and practice	.77	28
Nonlinguistic representation	.75	27
Cooperative learning	.73	27
Setting objectives and providing feedback	.61	23
Generating and testing hypotheses	.61	23
Cues, questions and advanced organizers	.59	22

Three Actions That Transform School & Teaching

1. The research on instruction and schooling must be synthesized and made readily available to educators
2. Schools and districts must provide high-quality staff development relative to effective practices identified by research
 - Adequate modeling and practice (and time to do both)
 - Feedback relative to their acquisition of the effective strategies
 - Allowance for differences in implementation (teachers adapt strategies to their particular context)
 - Celebration
3. Inspire a desire to change and a commitment to weather the storms that will occur as the change evolves

Marzano, Robert J., Debra J. Pickering & Jane E. Pollock, *Classroom Instruction that Works: Research-Based Strategies for Increasing Student Achievement*, McREL (published by ASCD, Alexandria, VA 20001).

NATIONAL COMMISSION ON TEACHING AND AMERICA'S FUTURE

The National Commission on Teaching and America's Future is committed to the following goal:

By the year 2006, provide every student in America with what should be his or her educational birthright: access to competent, caring, qualified teaching in schools organized for success.

To accomplish its goal, the Commission offers five major recommendations:

1. Get serious about standards, for both students and teachers.

- Establish professional standards boards in every state.
- Insist on accreditation for all schools of education.
- Close inadequate schools of education.
- License teachers based on demonstrated performance, including tests of subject matter knowledge, teaching knowledge, and teaching skill.
- Use National Board standards as the benchmark for accomplished teaching.

2. Reinvent teacher preparation and professional development.

- Organize teacher education and professional development programs around standards for students and teachers.
- Develop extended, graduate-level teacher-preparation programs that provide a yearlong internship in a professional development school.
- Create and fund mentoring programs for beginning teachers, along with evaluation of teaching skills.
- Create stable, high-quality sources of professional development.

3. Fix teacher recruitment and put qualified teachers in every classroom.

- Increase the ability of low-wealth districts to pay for qualified teachers, and insist that districts hire only qualified teachers.
- Redesign and streamline district hiring.
- Eliminate barriers to teacher mobility.
- Aggressively recruit high-need teachers and provide incentives for teaching in shortage areas.
- Develop high-quality pathways to teaching for a wide-range of recruits.

4. Encourage and reward teacher knowledge and skill.

- Develop a career continuum for teaching linked to assessments and compensation systems that reward knowledge and skill.
- Remove incompetent teachers.
- Set goals and enact incentives for National Board Certification in every state and district.

- Aim to certify 105,000 teachers in this decade, one for every school in the United States.

5. Create schools that are organized for student and teacher success.

- Flatten hierarchies and reallocate resources to send more dollars to the front lines of schools: Invest more in teachers and technology and less in non-teaching personnel.
- Provide venture capital in the form of challenge grants to schools for teacher learning linked to school improvement and rewards for team efforts that lead to improved practice and greater learning.
- Select, prepare, and retain principals who understand teaching and learning and who can lead high-performing schools.