

Core Principle 3: Flexibility and Adaptability

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The third of the core principles on which the State Board of Education bases its consideration of redesign of the system is: *The system must be flexible and adaptable to meet the learning needs of each student.* The following principle and indicators will be addressed in this paper:

The system must be flexible and adaptable to meet the learning needs of each student.

- (a) Time needed by each student to complete the essential learning is provided.
- (b) Funding mechanisms for the system allow for flexibility in service delivery that promotes serving the learning needs of all students.
- (c) An instructional management system used to frequently monitor student progress on the essential standards is utilized by the professional staff to benchmark student progress and is reported to students and parents regularly.

Introduction

The need for flexibility in school systems has always existed, but the demands of the 21st century and the increasing rate of change in all aspects of society make it absolutely necessary to do a better job of educating all students. It is natural for humans to seek comfort and stability. While this striving for a safe status quo is probably a biological imperative, it becomes a barrier to growth when prevailing circumstances and situations change. Barriers to institutional change arise when the systems and practices are so entrenched, so revered, so familiar and unquestioned, that they cannot easily respond to the inevitable need for change. To change requires individuals to leave the comfort and stability of the known, take risks, and do the work necessary to identify trends and needs, commit to learning how to adapt to new realities, and institute necessary changes.

There are instances, however, when the need for substantial and significant change is so critical, so crucial to the well being of a society, that human nature must be confronted and overcome in order to establish a new institution and set of practices that respond to changes in the world... instances when to wait for a natural evolution or metamorphosis is simply not practical. To overcome these obstacles to change, strong, dynamic and sustained leadership is absolutely necessary. This committed leadership must exist from the top and create energy for change throughout the system. (Heifetz and Linsky, 2002)

This is precisely where America is today in its effort to reform schools to address the much touted needs of the 21st century. These may include the following:

- Change from a megalithic, staff-centered institution to a flexible, student-centered institution able to truly meet the unique learning needs of all students.
- Change from an institution that focuses on teaching content to one that develops learners.
- Change from authoritarian teaching to egalitarian facilitation of student learning.

Research

America has historically produced an adequate number of graduates who have been prepared to move into all strata of society and the national workforce to establish America as a truly great nation. This adequacy, however, may be one of the greatest barriers to effecting systemic change. According to Jim Collins, author of *Good to Great*, “good is the enemy of great.” Being good can obscure the necessity for change. (Collins, 2001) The ability of our education system to produce at least an adequate number of quality graduates who are adequately prepared to enter the workforce has been declining in spite of constant attention and investment from all levels – from local school districts to the U.S. Department of Education, Congress, and the White House. In addition, business and industry are making it known that the graduates coming to them for employment are lacking in necessary skills and abilities to meet the needs of a 21st century, information-age workforce.

It is becoming increasingly clear that the American public education system is in need of fundamental change. One of the realities of life in the 21st century– and, hence of education – is that change is ubiquitous and constantly accelerating. It is no surprise that children who grow up in a different world than their parents (and teachers) are different from their parents (and teachers) in so many ways. While it has been said, that schools have really never done a good job of meeting the needs of each individual student, the relative homogeneity of yesterday’s student bodies and their conditioned acceptance of authority made the shortcomings of a one-size-fits-all education system easier to overlook. That simply is not the case today and, with legislation and public expectations demanding education for all students added to the demands of a diverse and changing student body, the new education system will have to dramatically change to be flexible enough to truly meet the needs of all students, teach to all learning styles, develop a new set of skills for individual success, and honor the individual’s unique skills, abilities and achievements.

In the 1800s, public schools became available for many children but their intent and purpose was not to educate all kids. They were, in fact, looked to by owners of industry (who formed the early school societies) to create individuals who would fit into the world of industrial age jobs that existed then. Among the principal qualities employers sought for these jobs were discipline, compliance and docility. John D. Rockefeller wrote of public education, “In our dreams, people yield themselves with perfect docility to our molding hands ... the task is simple. We will organize children and teach them in a perfect way the things their fathers and mothers are doing in an imperfect way.” Inquisitiveness, independence, and exploration were not attractive qualities and the system was not designed to foster or impart these traits. It was in fact, expressly structured to not foster or impart these traits and even to quash them in those who displayed them. The intent was to construct the ideal worker. With very few changes, this is the system that is still in place today. The continued existence of this model is the crux of the problem that must be addressed.

In 1983, the National Commission on Excellence in Education declared that the U.S. was “A Nation at Risk” and cited the failures of our education system. In 1998, the Center for Education Reform released a follow-up report. These documents detailed significant deficits and shortcomings of education in America that remain unaddressed today. As a result, it is almost

universally accepted that public schools in America are no longer producing graduates who are prepared to compete in their world at an “acceptable rate.”

In Kansas, school improvement became of paramount importance in the early 1990s with the initial drafting of the Quality Performance Accreditation (QPA) process. This initiative changed the focus of education from ensuring access to that of teaching all students. In response, staff development and school improvement became the focus. Additionally, QPA required the use of data in assessing educational success for the first time and researchers and educators started to understand the impact of various teaching and learning styles and how the two are inter-related. The major contribution of QPA was the realization that getting students through the school doors was not enough – educators needed to employ viable instruction strategies. Consequently there was a focus on developing and instituting teaching strategies to address the needs of all students. As QPA and the nation-wide emphasis on school improvement spread, an emphasis on curricular standards also emerged as an important issue during this era.

The next and most recent iteration of school improvement was the No Child Left Behind Act of 2001, which reauthorized the Elementary and Secondary Education Act (ESEA) of 1965. One of the most significant contributions of this legislation to the education of children is that for the first time, in addition to mandating that students be in school listening to teachers (seat time for a set number of days), learning was actually mandated.

It can be safely assumed that, while NCLB may go through a metamorphosis over time, the requirement for accountability will not go away... accountability that all children in the education system must actually learn. In this metamorphosis it is reasonable to expect that educators will move away from gathering data on how students perform on a small set of standardized tests to understanding what students really need to learn and to provide for those needs on a systematic basis. In addition to simple mastery of core subjects, this next phase will most likely require mastery of additional important outcomes necessary for students’ success.

There is a tremendous amount of work being done in education today with the development of many initiatives meant to increase student achievement. Most are well-founded and even evidence based. However, the defeating point is that they are being plugged into a system that was designed to produce a dramatically different result. There is precious little in the area of true school reform that establishes a fundamentally different design of an education system for the 21st century. School reform has almost exclusively focused on what individual teachers must do differently. Since the system itself is outdated, no amount of tweaking, adding on, renaming, reassigning, modifying, or modernizing will make much difference. True structural change is necessary.

Research as it applies to the education of children by its very nature looks at learning in the context of the assembly line approach. It is based in the context of the old system. If indeed we will be creating new solutions it will require that we distinguish between the research that looks at what worked best in the old system vs. the research that will lead to the creation of new solutions. Solutions in the old structures may be irrelevant in the new structures.

The change process always begins by applying strategies that have been proven successful in the past. These strategies are often referred to as “best practice” in education. The research refers to these strategies as technical solutions. When, however, these strategies fail to reach their desired results because of changing social, economic and political conditions, organizations enter what is referred to as the “threshold of learning.” The threshold of learning is that point in time where organizations (schools) must meet new adaptive challenges. These are challenges that require solutions that have yet to be discovered. The implication of these new strategies is that leadership cannot direct members of the organizations to use new practices and processes but rather members of the organization must discover the new practices and processes. The implications of this fundamental shift are profound. The role of leadership changes dramatically. (Heifetz and Linsky, 2002).

Has education reached the threshold of learning? The adoption of best practices has not led to the results desired by society. A question to be asked is: “if we continue the processes and procedures we are currently pursuing to increase student achievement, will we be educating all kids to a high level by 2014?” Educators almost unanimously answer “no” to this question. If it is not believed that the path currently traveling will get us where we need to be then we must address the adaptive challenges we face and begin a new journey.

Vision

In a redesigned education system, flexibility is a crucial element. Knowing that there is no such thing as a one-size-fits-all education system, flexibility has to be designed into the system. A working system recognizes the unique needs and abilities of individual children and provides an educational experience that allows them to use their natural and acquired abilities and to develop new skills in order to be life-long learners. Redesigned schools of the future need to be based on three key concepts. These concepts provide a framework for necessary changes throughout the education system. Once instituted and fully implemented, these key principles can provide a context for wide spread and comprehensive change. These concepts are:

1. Student achievement must be fixed and time must be viewed as a variable.
2. Brain research must be used in designing schools of the future.
3. Student learning must be continuously assessed and used for instructional purposes.

Student achievement must be fixed and time must be viewed as a variable.

In the industrial age model that was developed to create docility and compliance in students in order to prepare graduates for factory jobs, schools were constructed to emphasize structure and compliance and not to enhance children’s learning. In essence, schools approximated factories. Attendance was mandatory and unexcused absences were sanctioned. Obedience to authority and the unquestioning acceptance of what the authority figure said was required. Jobs and tasks were assigned to meet the needs of management whether or not they were understood by the worker. Closely following instructions to do a task in the right way was demanded of workers. Following an established structure (where to be, how long to be there, when to take breaks and lunch, etc.) that was developed by management to meet their needs for ease of supervision and exercise of authority was not to be questioned.

When schools forced students to inculcate these qualities, graduates could easily transition into factories. An objective review of the above examples that describe schools of the 1900s continue to exist in the current education system. In this design, where compliance and structure were more important than learning, the time element became fixed... every student is required to be in an assigned classroom for a set number of hours for a set number of days for thirteen years. In this model, every student received the same amount of time on every piece of learning whether they needed it or not or were ready for it or not. What was flexible was the amount students learned while they were in school. Learning was a variable; if a student was in the assigned seat for the established number of days and showed at least an unspecified modicum of learning during that time, he or she advanced to restart the time counter in a new year.

Brain research must be used in designing schools of the future.

Research on how the brain functions and how children learn is a huge and growing area of increasing importance to education. While an extensive discussion of this topic is beyond the scope of this paper, an exploration of the current research on the brain, learning, and implications of new findings for the design of learning environments that teach to the ways the brain learns is needed.

It is absolutely critical for all educators to realize that students learn the most and learn best when they are authentically and emotionally engaged in their learning. Authentic engagement is much more than showing apparent attention to a learning task. It includes an emotional component that allows a person to be absorbed in the activity... to be completely involved. The overwhelming majority of students today, when asked to describe school in a word, say it is “boring.” Teachers dream of having a classroom full of authentically engaged students but are thrilled when they achieve “ritualistic engagement” which is being attentive and even involved without being absorbed. Phil Schlechty distinguishes between authentic engagement and ritualistic engagement in that authentic engagement includes an emotional element that causes learners to actually lose track of time. Ritualistic engagement is evidenced when a student says: “Don’t tell me what I’ve got to learn – just tell me what I’ve got to do to get an A” or: “What have I got to do to pass the test?” Authentic engagement is evidenced when a student says: “I’ll go to lunch when I finish this work” or “Can I come in on Saturday to check my experiment?”

Authentic engagement is self-directed and intrinsically motivated; ritualistic engagement is externally directed and extrinsically motivated. It is known from brain research that the most productive learners are intrinsically motivated. Gallup’s research found that “recent discoveries in neuroscience and psychology bear this out. Neuroscience shows that emotional processes are integral to learning, reasoning, and decision making. It is now well accepted that much of what a person learns happens outside of conscious awareness.”

Part of the problem America is facing in education today is that educators focus on increasing ritualistic engagement – and that is not enough. What is needed is to create environments and learning activities that foster authentic engagement. If this is not accomplished, a growing body of research that gives educators the keys to understanding how children learn best will have been ignored. One of the greatest challenges in developing schools that prepare students for life in the

21st century is to operationalize this important research into teaching strategies that foster real learning.

Student learning must be continuously assessed and used for instructional purposes.

The industrial age model uses the machine as metaphor. Students are put on a conveyor belt upon entering the system and as they move down the line, assigned parts are “put on” each student as they progress down the assembly line. At established times, quality control checks make sure that the part is indeed “put on” and “put on” adequately. Management establishes what is to be assessed, when it is to be assessed, and how it is to be assessed. When education follows this model, the system establishes what students should know and when they should know it. At system-established times, summative measures assess whether and to what extent the knowledge has been gained.

Teachers’ energies are diverted from what they should be doing so they can “teach to the test.” Students are diverted from learning activities in which they would be authentically engaged in learning relevant information and skills to “learn to the test.” It is well known that students don’t really “learn to the test,” they “remember for the test” and then “forget for life.”

What is important is that students gain important learning and skills before graduation. If students are authentically engaged in guided and facilitated learning activities, they will gain real learning of the content and skills the system deems important – but not all on the same date or at the same chronological age.

Students learn at different rates and in different ways. If this is true, does the current practice of assessing every student on the same concepts on the same day make sense? In the teacher-centered industrial age model, it is easier for the teacher to teach the same content to twenty-five students at a time and then to assess all students at the same time and in the same way. In the information age, teachers need to facilitate diverse and individualized learning for each student in the class, to continually assess student learning and to use the assessment to guide future learning.

If teachers were released from the constraint of standardized assessments on a fixed timetable, flexibility would be allowed by schools and great results in student learning would be realized. To achieve system flexibility it will also be necessary to implement formative assessment strategies that provide better and timelier information about student learning. In order to be effective, these formative evaluation strategies must enable the immediate modification of a student’s learning path by students and or teachers.

To compete and succeed in the 21st century students will require skills and knowledge that may not be developed in the current educational system. These skills and knowledge, while present in most children, have not been developed through the current educational process. If educators can agree that these are requirements for success, it is incumbent on schools to foster (not teach) them at least as well as they did the compliance and obedience necessary for the industrial age.

The 21st century skills offered below are a compilation of skills identified as important for graduates to command in order to be successful in the 21st century. While the list is not exhaustive, it is a sampling of what is in current literature. The intent is to reinforce the idea of what skills are needed beyond core subjects for students to master before they leave school. Tom Peters, when he said, “what was once soft is now hard,” was communicating that these skills and behaviors, once thought to be optional, are now as important as the knowledge a person possess.

- Technological fluency is the ability to use technological tools just as earlier generations used pencils. Students need to know how to use word processing, spreadsheets, databases, and communication technologies as easily as a pencil.
- Communication skills encompass reading, writing, speaking, and more – it also includes the use of technological skills such as e-mail, chat rooms, and video conferencing, as well as presentation tools such as PowerPoint to communicate.
- Collaboration includes the use of several skills:
 - Leadership -- the ability to assume a leadership role, not just as the leader of an organization but the leaders of a team.
 - Teaming -- the ability to work effectively as a contributing member of a team when not in a leadership role.
 - Coordination of work -- the ability to not only organize one’s own work, but also to organize one’s own work in a team effort.
 - Interpersonal skills -- the ability to work well with others. Interpersonal skills are important to master for virtual relationships as well as face-to-face relationships. It is interesting (and seemingly somewhat paradoxical since virtual presence is substantially different from actual presence) that, as distance communication is becoming more important, interpersonal skills are becoming more important at the same time.
- Complex problem solving -- the skill necessary to take a big problem, make sense of it, break it into its component parts, solve the parts, and put it back together in an integrated way so that it all makes sense.
- Creativity -- the ability to approach a problem from different and unique approaches. Traditionally viewed as a concept limited to art and music, in a world where there is not just one right way to do something, it is viewed as a necessary quality on a broader scope.
- Analytical and thinking skills -- the ability to independently analyze and make decisions on what to do based on the situation surrounding the problem.
- Ambition -- the quality of knowing where one wants to go in the world and having the ability to focus attention and activities to get there and accomplish things.
- Inquisitiveness -- curiosity and the ability to meaningfully explore the unknown as well as the ability to ask questions and seek answers.

These abilities are inter-related and cannot be addressed in isolation from the others. For instance, if students are going to express and develop inquisitiveness, they require the technological fluency to seek information, the ability to apply problem solving skills to form and answer their own questions, the ambition to succeed, the gumption to stay with the task when the going gets rough, the ability to establish and express self-directedness, and the ability to communicate with others in solving complex problems.

In looking at these 21st century skills, it becomes apparent that the task of schools in preparing children to be successful students and to graduate successfully and enter the world of work is both simple and complex. The simplicity is that children are born with and become fairly proficient with these skills in their day-to-day dealings with their world. To a greater or lesser degree, all children have and utilize these qualities, traits and skills. Therefore, when they enter school, the system simply needs to provide an atmosphere and provide guidance for their development. The complexity of the task lies in the difficulty of implementing the institutional reforms necessary to allow students to utilize their innate strengths and abilities in continuing the learning processes that allowed them to solve one of the most complex tasks they will ever face – deciphering human language – on their own. All levels of the education system and society are part of the inability to change:

- Classroom teachers who can't let go of the notion that they need to be the holders and conveyers of all knowledge and must never allow kids to know more than they do
- Higher education that teaches outdated and counterproductive education models to aspiring teachers
- Administrators who fail to be informed and/or express leadership that is crucial to effect necessary changes
- Parents who demand that their children be taught the same way they were
- Legislators and bureaucrats who think that throwing more money at the problem to do more of what may not be effective anyway

It is absolutely necessary for all educators to ask – and seriously assess – where they are on their understanding of needs and their commitment to creating the changes so necessary to not only the education of our children, but to their success as people in a rapidly changing, complex, and demanding world. A critical point to understand about these 21st century skills is that they are not an afterthought to education. In fact, these skills should be considered super-ordinate to current core subjects. This fact does not diminish the importance of math, reading, science and the rest, rather student's use of these 21st century skills provide the proper learning environment, facilitate their exploration, and enable the development of a deeper understanding and mastery of the core subjects.

A final point is that many of our teachers, administrators, and policy makers may also be lacking in these 21st century skills and may have difficulty passing on to their students what they do not possess as well. Educators are products of the industrial age model and are products of a system that has not helped them develop the 21st century skills. Consequently, they continue to try to force students to “learn to my teaching” rather than “teaching to students' learning.” The best educators are using the 21st century skills (whether they know it or not) and are developing the skills and tools necessary to be effective with a new profile of learner.

Knowing that these skills and knowledge must be taught, what changes in the system are envisioned?

Physical environment and architecture:

- Isolated classrooms in long hallways will be abandoned over time as they are not conducive to sharing across age groups, group learning experiences, or in the mutual

support of a team of teachers. In their place will be large open spaces active with exploration learning and sharing. Students will work individually and in groups in investigative learning activities. To meet the need of multiple learning styles and teaching strategies, classrooms for separate instruction will also be included.

- As student achievement becomes the constant and the place becomes a variable, students may not necessarily be at school to learn. Learning outside the confines of the building will be facilitated, honored and validated by the teacher.
- Technology will break down the walls of the school as distance learning makes the formation of learning groups across distances possible.

Curriculum and content:

- Content will be provided through the use of cross curricular strategies, allowing flexibility in the learning of each student.
- Constructivist principles—having a student construct his/her own learning—will result in an increase in authentic engagement and commitment to school.
- A student’s academic career will be increasingly self-directed allowing individual students to express and explore their unique interests and abilities. Each student will develop an Individual Learning Plan that will be utilized to assure that they are gaining important skills, behaviors and content.
- Time will be a variable while achievement will be held as the constant allowing students to learn at their own pace and in their own manner.
- Curriculum will be integrated, all learning will be authentic, and skills and knowledge will be contextually based.

Assessment:

- Continuous and consistent assessment of student achievement that is meaningful to teachers, students and parents will be used. There will be assessment of 21st Century skills and behaviors as well as assessment of mastery of traditional content.
- Reflecting the reality that achievement is fixed and time is variable, assessments will be conducted when the student is ready instead of when the calendar or schedule dictate. Advancement will be dependent upon demonstration of mastery of content aligned with state standards.
- Technology will be used to assess student learning and to alleviate the reporting burden on teachers in testing and gathering data.

Technology:

- Schools will be technologically rich learning environments that provide multiple experiences in the use of technology by students.
- Technology will be integrated into the classrooms as a learning tool and as a learning modality. It will be used by teachers for management tasks, to gather assessment data and to communicate with students and their families. Students will be encouraged to use technology to the maximum extent possible rather than teachers limiting access to it.

Class assignment:

- Respecting the wide diversity of needs and abilities of students who are the same chronological age, reconstructed schools will group students based upon their assessed functioning and needs for each given learning experience.
- Recognizing that student achievement is the constant and time is a variable, assignment to classes and “graduation” from one grade to the next will be more flexible. Loose grouping of students in levels (based upon brain research and student needs rather than calendars and standardized test scores) will be employed. The definition of a “grade level” will change from a calendar based definition to a learning based definition, to the eventual elimination of grade level designation. This transition will also reduce and eventually eliminate the use of letter grades.

Roles of teachers:

- Teachers will be facilitators of learning rather than the holder of all knowledge. Their responsibilities will include:
 - Observing students’ learning and social skills,
 - Assisting students with developing their individual learning plans.
 - Assisting students with incorporating content in their experiences.
 - Continuously monitoring student achievement utilizing technology and then assisting the student in using the assessment information in meaningful ways.
 - Utilizing technology for management and as a tool for student learning integrating it into the classroom in meaningful ways.
 - Continuously and genuinely reinforcing students for real achievement.
 - Teaching students when appropriate.

Recommendations for the Kansas State Board of Education to Consider

Implementing these changes is a daunting task. It will take dynamic leadership at many levels to accomplish them. It will additionally take unprecedented levels of cooperation. All of these things are possible. To accomplish the task, the following recommendations are offered.

1. Develop and implement viable learning strategies.
 - Change the emphasis from instructional strategies to learning strategies.
 - Provide learning experiences that match the varying needs of students.
 - Develop and use formative assessments to guide and change instruction.
 - Develop structures that support flexible grouping of students for learning.

2. Develop, empower and support leadership at all levels.
 - Provide direction, motivation and ongoing support to leaders to elicit their best input and effort in the difficult process of making change.
 - Communicate the need to all stakeholders of the fundamental changes necessary to make the system flexible and provide all necessary resources, guidance and support.
 - Enable leaders to set direction and be resolute in setting and maintaining expectations of districts and higher education to develop flexible systems that make maximum use of research and evidence-based models.
 - Assist superintendents in leading the implementation of changes in their districts. Provide the training they need on evidence based models and on guiding, nurturing staff, parents, school boards and other constituencies that may resist change.
 - Bring along local boards of education by providing training and consultation. Assist them in providing the local leadership needed in concert with the superintendent to effect appropriate and effective changes.
 - Require policy makers, including top Department of Education staff to attend and participate as cadre members and mentors in the Center for Innovative Leadership activities.

3. Develop, implement and disseminate viable models of schools of the future.
 - Support the continued development of exemplary practices and implement proven models.
 - Establish a “think tank” as a forum of study to re-imagine what schools of the future might look like. Allow them to develop, implement and evaluate effective model programs and serve as a resource on research-based models.
 - Motivate and incent districts to establish innovative model schools that use “breaking-the-mold” programs and serve as models of best practices. Design a model of “Schools of the Future” based upon the “think tank” and other forums to assure that the designs are research-based.
 - Disseminate information about effective programs and encourage its replication in other districts. Districts with effective models will establish themselves as professional development centers. Staff and schools in these centers should be honored and compensated.

4. Establish a system of providing preservice, inservice and continuing education of teachers.
 - 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 instructional needs of students.
 - Colleges and universities need to upgrade their curricula and methods of training teachers. Their content needs to be on the cutting edge of research and methods need to model the viable learning strategies teachers are learning.
 - Empanel a review and development board under the Board of Regents mandated to update curriculum and teaching methods in colleges of education. Include higher education in the leadership role in education and re-education of a quality teaching force (in actuality – a facilitating force) that is in full command of 21st century skills.

5. Establish structure and services.
 - Form a task force to study, recommend and develop systems for assessing and monitoring student development of 21st century skills. Include the assessment of student mastery of core subjects based on individual readiness.
 - Rethink the use of formative assessments.
 - Ensure that assessments provide valuable, actionable information to students, teachers, and parents, and that they utilize technology to streamline the process for teachers.
 - Provide education to the population at large across state. Insist that the State Department of Education take the lead in preparing the public for imminent change in education.
 - Prepare and implement a public relations campaign to provide information on the need for change and the potential of new teaching and learning environments.

As the person who coined the phrase “information age” it seems appropriate to quote Alvin Toffler to end this paper: “An important question to ask of any proposed educational innovation is simply this; is it intended to make the factory run more efficiently, or is it intended, as it should be, to get rid of the factory model altogether and replace it with individualized, customized education?”

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