Creating Internationally
COMPETITIVE SCHOOLS

The Public School Forum's Study Group XII

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December, 2006

INTRODUCTION:

It is rare for the publication of a report or a book to become the catalyst for a national education movement. Such a report was released in 1983, when the Reagan Administration's *Nation at Risk* provided a spark for the school reform movement that continues today.

Roughly twenty years later, in 2005, the publication of the book *The World is Flat* sounded a wake-up call that again has the potential to reignite the focus on America's schools – only this time, instead of calling on schools to improve, the cry will be to make the nation's schools "internationally competitive."

The factors combining to raise the public consciousness about issues related to international competition are well known. New trade agreements, the offshoring of jobs, the rapid decline of low-tech manufacturing in the United States, and once stable communities still feeling the impact of factories that have closed their doors have dominated headlines for years.

What is increasing national anxiety about international competition, however, is the rapid escalation of knowledge work and jobs being sent offshore in much the same way that low-skill, low-pay manufacturing jobs left the United States through much of the nineties and into the new century.

"Back office" functions for American banks and accounting firms are now routinely being done by a highly trained workforce in places like Singapore and India. X-rays taken of patients in United States' hospitals are sent, via the internet, overseas for analysis and promptly delivered back to American doctors. Technology firms like Cisco, IBM and SAS have already opened offices in booming Asian cities and are increasingly reliant on the technology talent pool that is there.

As a result of the changing face of the global economy, hardly a week goes by without more voices being added to the growing list of those calling for the nation's schools to redouble reform efforts.

To the nation's business community, the primary challenge is a matter of economics. Manufacturers have already gone to nations where it is possible to produce goods at a far lower cost. Today, more and more knowledge-work companies are following their lead, not only because labor costs are lower, but because highly-skilled talent pools are available elsewhere.

As an article in the February 25, 2006, edition of the *Economist* put it, "More than one-half of America's *Fortune* 500 companies outsource some of their information technology work to India. The rest have to explain to shareholders why they are not doing so."

Beyond economics, global politics, wars and terrorism have combined to raise concerns about the nation's very security. They have also underscored the degree to which graduates of the country's schools are not prepared to function effectively in an increasingly global environment.

Historically, the nation's schools have not focused on teaching foreign languages and, for the most part, the languages that are taught are not the languages needed in today's environment. Annual polls find the typical American student is appallingly unfamiliar with the world within which he or she lives. Fewer than one-half can point to New Orleans on a map; fewer still can correctly identify where Afghanistan or Iraq is located.

The business community is not the only community clamoring for American-educated students to be better prepared to work in a global community. They are joined by those concerned with foreign defense, diplomacy, and information gathering.

In short, the bar for school improvement has been raised. For the nation to be internationally competitive, it will require young people whose education is up to the standards of countries that are now emerging as a result of their brainpower resources, not simply their lower wages.

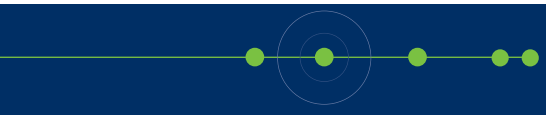
The Focus of the Study Group

It is the growing belief that North Carolina's schools need to be up to international standards that led the Forum to launch its twelfth Study Group. Specifically, the Forum has attempted to address three questions:

1. What would it take to bring North Carolina's teaching of mathematics and science up to internationally competitive standards?
2. How could North Carolina become a national leader in creating a curriculum that would better prepare young people to work and thrive in an increasingly global environment?
3. What would need to be done to enable North Carolina to provide high quality, high volume professional development to support these changes?

To address these questions, the Forum Board of Directors approached the process in much the same way as a Legislative Study Commission. Additional individuals who brought expertise related to the study were invited to join the Board and, for the better part of a year, the Study Group heard from experts in the field, studied research on the subjects, examined what other states and countries have done to address these issues and, finally, framed recommendations that have the potential to lead to real school improvement.

What follows is the result of the Study Group's work, investment of time, and commitment to the belief that North Carolina's future will only be as strong as the education foundation that supports it.



"…the bar for school improvement has been raised."

THE CHARGE TO COMMITTEE ONE:

What would it take to bring North Carolina's teaching of mathematics and science up to internationally competitive standards?

When beginning their work, the members of the committee first studied the state of mathematics and science teaching in North Carolina and the United States. Their findings were sobering:

- On the most recent Program for International Assessment (PISA) assessment of 15 year-olds (ie, the most widely cited international assessment of student performance around the globe), United States' students ranked 7th among the G-8 nations and 17th out of 41 nations in science; they ranked 28th out of 41 nations in mathematics – a decline of 10 places since 2000) – and 24th out of 41 on problem-solving skills.
- Only 36% of North Carolina's eighth-grade students have taken Algebra I, Geometry or Algebra II, as compared with the US average of 41%. The top state has a rate of 56%.
- Last year, 63,697 North Carolina students took mathematics courses beyond Algebra II, but only 10,267 students were enrolled in physics. By comparison, 102,545 students were enrolled in required biology courses.
- Survey data indicates that only 16% of North Carolina elementary teachers teach science daily; 11% don't teach it at all; and 16% report teaching less than one science lesson a month.
- Surveys of elementary teachers indicate that they feel least prepared to teach science and mathematics.
- The National Science Board reported that 18% of high school students and 57% of middle school students studied mathematics with a teacher who did not have a major or minor in mathematics and that 16% of high school students and 48% of middle school students studied physical science under a teacher who did not have a major or minor in physical science, engineering or a related field.
- It is estimated that 200,000 mathematics and science teachers will need to be replaced between 2002 and 2012. At the same time, a shrinking number of teacher candidates are majoring in mathematics or science while in college.
- The difficulty of finding qualified mathematics and science teachers is underscored in the findings of a new survey of North Carolina's school systems conducted by the Department of Public Instruction. 97 of the 115 systems ranked 9-12 mathematics as the most difficult teaching position to fill. High school science was the third most difficult position to fill, identified by 72 systems. The fourth and fifth most difficult positions to fill were middle school mathematics and science.

Given these kinds of statistics, the committee quickly realized that the challenge of reaching internationally competitive standards is formidable, and, given the enormity of the challenge, it is not a goal that will be realized quickly. It will take a concerted effort over time.That said, the committee narrowed its recommendations down to:

- Set as a goal moving students far beyond today's definition of proficient.
- Provide young people ample time to master higher levels of mathematics and science.
- Establish higher expectations.
- Address the teacher quality issue on a variety of fronts.
- Communicate the urgency of improving the state's capacity in mathematics and science to parents and students.

RECOMMENDATION

Moves Students Beyond Proficient

While the State Board of Education is to be commended for increasing the accountability bar for mathematics, it must be pointed out that for young people to be found "proficient" in mathematics, it is only necessary for a student to answer roughly 50% of the questions on the state's ABCs mathematics examinations (see chart to right).

Potential employers of North Carolina high school graduates are likely to find little solace in knowing that a mathematics-proficient product of the public schools is likely to correctly solve a work-related mathematics problem 50% of the time.

The committee recommends that the State Board rethink the semantics of the ABCs program. Specifically, the committee believes a designation for high performers should be added to the accountability program and that labels such as "proficient" should be reserved only for the top performers, to give parents and the public a clearer picture of student performance, while creating a higher standard for students to reach toward.

Additionally, today's multiple choice assessments are extremely limited in terms of assessing students' ability to apply concepts to problem solving, as illustrated by the poor performance of US students on international assessments that assess problem solving skills. The committee strongly recommends that the state's ABCs assessment program include problem solving assessments that require students to apply knowledge as they would in real-world situations.

With that, the almost myopic focus of the last decade has been to move lower-performing students up to grade level. Put another way, today's focus is on preventing failure by moving bottom scorers up. Virtually lost in educational policy discussions are the state's top performing students.

The committee recommends that the state focus on both ends of the performance spectrum and create opportunities for students who could go far beyond the limitations of the state's ABCs assessment policies, while intensifying the effort to move low-performing students to a higher standard. Specifically, the state should create opportunities for the gifted and talented, including regional schools of mathematics and science modeled after the nationally-known North Carolina School of Science & Mathematics. With that, the Committee urges the state to accelerate the creation of health career and technology academies similar to those initiated by the Gates Foundation-funded New Schools Initiative, to give far more young people access to schools designed to prepare them for careers in STEM-related areas (ie, Science, Technology, Engineering & Mathematics).

MATHEMATICS STANDARDS UNDER STATE'S ABCs PLAN

GRADE	# CORRECT ANSWERS REQUIRED TO PASS	PASSING RATE
Third	**25 out of 50**	68.7%
Fourth	**25 out of 50**	65.9%
Fifth	**26 out of 50**	63.9%
Sixth	**24 out of 50**	62.5%
Seventh	**25 out of 50**	62.3 %
Eighth	**29 out of 60**	61.1%

Source: DPI. Passing rates are for 2006.

RECOMMENDATION

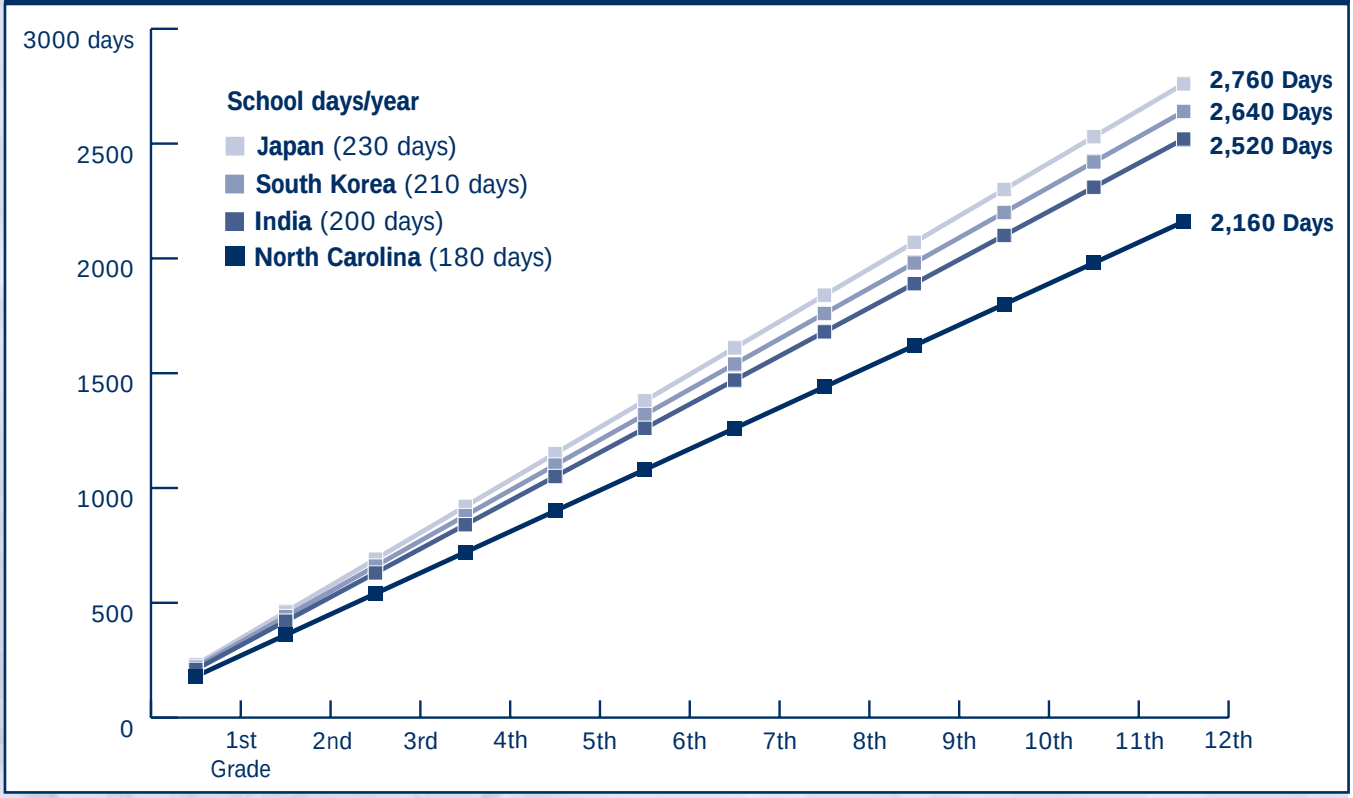
Provide Time for Mastery of Higher Levels of Mathematics and Science

As a result of the heated debate in 2004 over whether schools should begin before Labor Day, there has been very little discussion of the school calendar since. However, the committee believes the issues of time for student learning as well as time for teacher learning and planning must be addressed.

When people look for explanations of why American students start out in the elementary years performing at an internationally average or slightly above-average level but decline dramatically through their middle and high school years, they rarely discuss the time US students have spent learning. Across the nation, schools average roughly 180 days of instruction, the same number of days offered to North Carolina's students.

In industrial nations around the world, the average number of days of instruction is between 200 and 210 per year. In countries like Germany and Japan, the school year exceeds 230 days per year. That means, that by 8th grade, a North Carolina student has attended school for 400 days less than his/her counterpart in Germany or Japan. By 10th grade, the gap will reach 500 days of instruction – the daily equivalent of 1.66 years of instruction in North Carolina. For teachers, the brevity of the school year means that they are under pressure to cover a year's worth of education in the shortest school year in the industrial world. The chart that follows shows the learning deficit for North Carolina's students and teachers.

NORTH CAROLINA'S LEARNING DEFICIT



North Carolina lags behind when it comes to the amount of time students spend in the classroom. Campared to India, North Carolina's cumulative learning deficit is 360 days of schooling, the daily equivalent of two full years of schooling in North Carolina. Compared to S. Korea, our cumulative learning deficit is 480 days of schooling (a daily equivalent of 2.6 full years of schooling in our state) and compared to Japan our cumulative learning deficit is 600 days of schooling (or fully 3.3 years of schooling in North Carolina).

The committee recommends that the state study the correlation between its abbreviated school year and international competitiveness in science and mathematics, factoring in not only days of instruction but time devoted to the study of science and mathematics from elementary school through high school. When North Carolina's educational benchmarks measured how well it was doing compared to the other 49 states with equally brief school years, the 180 day year was perhaps adequate. However, if North Carolina aspires to be internationally competitive, it is difficult to see how it can "spot" students around the world 20 to 50 days of instruction each year and expect to excel academically.

RECOMMENDATION

Establish Higher Expectations

Just as the State Board of Education is to be commended for raising the ABCs accountability bar for mathematics, so does it deserve to be commended for considering raising its expectations for student course-taking at the high school level. It also deserves commendation for adopting a new course of study for mathematics that is decidedly more rigorous than the previous course of study.

The committee recommends that the state intensify its examination of what is included (and what could be dropped) in the existing state curriculum, while proceeding with adopting higher course-taking expectations for students, especially in the areas of mathematics and science. As previously noted:

- Only 36% of North Carolina's eighth-grade students have taken Algebra I, Geometry or Algebra II as compared with the US average of 41%. The top state has a rate of 56%.
- Last year, 63,697 North Carolina students took mathematics courses beyond Algebra II, but only 10,267 students were enrolled in physics. By comparison, 102,545 students were enrolled in required biology courses.

The committee also recommends that the state replicate best practices in mathematics and science in other states and other countries and place a far greater emphasis on teaching problem-solving skills in lieu of covering greater quantities of material. A potentially productive first step in that process would be to do an in-depth comparison of North Carolina's approach to teaching mathematics and science with that of a high performing science and mathematics nation like Singapore. Studies of mathematics and science courses of study in the United States label the typical US course of study "a mile wide and an inch deep." In contrast, other countries that excel in international performance tests, focus on far less material; rather, they are focused on the ability of young people to successfully apply knowledge to problem solving.

RECOMMENDATION

Address the teacher quality issue on a variety of fronts

The increasingly difficult challenge of finding qualified mathematics and science teachers was underscored by this year's survey of school districts, which found that four of the five most difficult teaching positions to fill were high school and middle school mathematics and science teachers, with high school mathematics being ranked the number one most difficult job to fill by 97 of the state's 115 school systems. Unfortunately, the problem is likely to be greater in the future than it is today.

The root of the problem is twofold. First, North Carolina's 47 colleges and universities that have professional development departments simply do not produce enough teachers to adequately meet the demand. Of the 11-12,000 new teacher needed annually, only slightly more than 2,200 new teachers are coming out of North Carolina colleges.

Second, in North Carolina and elsewhere, mathematics and science majors are in demand in both the public and private sectors. When looking at salaries, benefits and potential career advancement, teaching pales in comparison to other opportunities for mathematics and science majors weighing the pros and cons of different occupations.

The committee recommends that the state greatly expand the practice of providing differentiated pay for mathematics and science teachers. Today's single salary schedule for teachers is based on years of service and degrees; it does not take into account supply/demand issues. Differentiated pay offers schools, especially hard-to-staff schools, a tool that can enable them to better attract and retain qualified teachers. The state has begun to provide a limited number of hard-to-staff schools the resources needed to offer differentiated pay to mathematics/science teachers, and there is a potentially promising pilot project underway in Guilford County that is designed to greatly enhance rewards for effective mathematics teachers, but the practice will need to be greatly expanded before it will make a widespread impact.

The committee also recommends that teacher preparation programs increase both the quality and quantity of teacher preparation in the areas of mathematics and science. Further, such preparation should not only be for mathematics/science majors preparing to teach at the middle and high school levels, but for elementary teachers as well.

In addition to more of a mathematics/science focus in teacher preparation programs, the committee recommends that the state place a priority on developing high quality training material in the area of mathematics/science. Such training should be mandatory for schools in which students are at low performance levels in mathematics or science, offered at no cost to practitioners and easily accessible. The virtual high school could be used to make high quality mathematics/science available to teachers anywhere in the state.

RECOMMENDATION

Communicate the urgency of improving the state's capacity in mathematics and science to educators, parents and students.

While leaders in the business community and in the public policy arena are more and more convinced that the nation must address the need for a major focus on STEM-related areas (ie, Science, Technology, Engineering & Mathematics), that conviction is not necessarily shared by educators, parents and students.

There is an urgent need to convey to these groups the urgency of adapting to the changing global economy, the necessity of preparing more young people to move into STEM-related fields and the economic and social implications of failing to do so. The message of this type of communications campaign is not that the "sky is falling," but that there is a massive economic and education transformation occurring and we need to ensure that our children are able to take advantage of it.

The committee recommends that the State Board of Education, the Community College Board, and the UNC Board of Governors, working with other business and educational organizations, launch a sustained communications campaign aimed at building a consensus around the need to take immediate and drastic steps to improve the quality of mathematics/science instruction across the state, while building grassroots support for the 21st Century Schools goals of the State Board of Education.

THE CHARGE TO COMMITTEE TWO:

How could North Carolina become a national leader in creating a curriculum that would better prepare young people to work and thrive in an increasingly global environment?

As Committee Two began its work, it first determined to assess how receptive North Carolina would be at this time to injecting more of a global focus into the school curriculum.

As much as any state in the nation, North Carolina has felt the impact of the global economy, and it has been a mixed blessing. On one hand, North Carolina's manufacturing workforce has been on the bleeding edge of the changes, losing over 250,000 manufacturing jobs in the last 15 years. On the other hand, many of North Carolina's leading businesses are on the cutting edge of the change and are benefiting from global expansion.

Because the impact of the global economy has been so strong, one of the historical obstacles to creating a global focus in North Carolina schools may be lessened. That obstacle is tradition and the very real potential for resistance to changing the way things have always been done in schools. Former textile and furniture workers who have seen their plants closed understand that it is a new day and that what is happening in China or Mexico has a direct impact on North Carolina. Families with men and women serving in Iraq and Afghanistan don't need to be reminded that the United States is not insulated from cultural and historical clashes.

Instead of being confronted with public opposition to change, the major opposition to creating more of a global focus within the state's schools is likely to come from the educators who must make the changes. The primary challenge may well prove to be convincing educators that international education is not simply a fad or an "add-on" that will divert time away from basics.

Since the advent of statewide testing and accountability, and especially since passage of the federal government's No Child Left Behind legislation, schools have focused more and more time on those things that are tested. An unintended consequence of the accountability movement is that courses in areas like art, music, geography and foreign languages have been marginalized in favor of more time on tested-subjects like mathematics and science.

The impact on foreign languages has been especially acute. In the mid-eighties, Department of Public Instruction records show that North Carolina was a national leader in foreign language instruction. At that time, 70% of North Carolina's elementary students were taking foreign language coursework. Today the number is down to 28%.

The committee determined that for global education to take root in the state, it would be essential for the State Board of Education to make it clear that their goal of creating a 21st Century educational opportunity for young people envisions global education as an integral part of North Carolina's vision for education.

On further study, the committee grew to realize that compounding the difficulty of giving schools a more international focus is the fact that very few teachers or school administrators have been trained on how to incorporate global education into their curriculums. In fact, surveys of deans of North Carolina Schools of Education are quick to point out that their faculties also lack background on international issues.

While the potential for resistance to change and the challenge posed by the lack of teacher preparation are formidable obstacles, the committee identified significant factors that support increased global education.

- Governor Easley has established North Carolina in the World, an initiative aimed at making the state a leader in working with other countries and in preparing young people to function effectively in an international world. That initiative, coordinated by the Center for International Understanding, provides a vehicle that can devote time and energy to the task of giving state schools an international focus.
- Second, the state Board of Education's 21st Century mission statement and goals make global education a priority.
- Third, more and more elected officials, educators and business leaders have had international experiences in recent years that have let them see first hand the need to build the capacity of North Carolina and its young people to succeed in an increasingly global economy.

- Fourth, organizations such as WorldView and the Center for International Understanding are creating networks of schools that have already incorporated global education into their programs.
- Last, some Schools of Education, like UNC Wilmington are engaged in programs designed to make them leaders in preparing educators to incorporate elements of global education in their teaching. Others, such as Elon University and UNC Asheville, have incorporated international experiences into their teacher preparation programs.

These factors provide building blocks that could enable the state to thoughtfully take steps to make North Carolina a leader in incorporating global education into the state's educational system.

RECOMMENDATION

Envisioning Schools With a More Global Focus

Groups like the Asia Society and the Goldman Sachs Foundation have identified best practices in schools that are pioneers in making their programs more global in nature. While the schools vary widely in terms of their student make-up, communities served and approaches, there are common denominators in school programs recognized for their leadership. They include:

1) **A focus on foreign language instruction.** Not only do these schools offer a broad range of foreign language courses, they enable students to take multi-year language courses that lead to proficiency. Their course offerings go beyond French and Spanish and increasingly include languages, like Chinese, that will become increasingly important in the years ahead.
2) **Connectivity through technology.** Most of these schools use technology to connect their students with students in other countries. They encourage learning/research projects that have students in the United States working with students in another country.
3) **Connectivity through exchanges.** Most of the schools have exchange programs that result in students and faculty members going to other countries and that welcome students and teachers from other countries.
4) **Using resources other than traditional textbooks.** Most of these schools use a rich variety of teaching tools. The internet is the central resource. But schools also reach out to people within their communities who have roots in other countries. They draw on ethnic organizations that have a wealth of knowledge about other countries.
5) **Global education is woven throughout the curriculum.** While most of these schools offer specific coursework in cultural understanding, the majority of them attempt to weave global education into their curriculum. A study of the threat of avian flu, for example, also results in a study of geography, wind patterns, migratory birds, nutrition and health issues and much more.
6) **Planning is continuous.** Most of these schools are breaking new ground when it comes to teaching approaches and developing curriculum. Subsequently, a major emphasis is placed on providing adequate time and resources to enable teachers to receive training and to work and plan together.
7) **Student performance is high.** Regardless of the demographics of their student population, these award-winning schools had high student performance in basic subjects that form the foundation for their states' accountability plans.
8) **The international focus is supported by parents and policymakers.** Finally, most successful schools were started after a strong consensus was built around the need for a focus on international issues. Since the schools depart in many ways from "schools as we know them," they need to have strong support from elected officials, school officials, parents and their communities.

Those are the elements of schools that have been identified as leaders in the area of international education. It is important to note that North Carolina has a handful of schools that mirror all, or most, of the elements of these schools. However, at the moment only a small minority of North Carolina's schools are in this category. The challenge for the committee and the state is to develop approaches that will bring best global education practices into schools across the state.

RECOMMENDATION

Create an Expanding Network of Global School Pilot Projects

The committee believes that interjecting global education into the schools of North Carolina is not as simple as requiring a course in something like "global awareness." While there is always a temptation to simply require change, a top-down directive to internationalize schools is unlikely to result in real, or lasting, change.

Instead, the committee recommends that the state establish a competitive grant program aimed at K-12 schools and schools of education at colleges and universities. The grants would go to schools and colleges that advance educationally sound and creative ways to interject international curriculum into their programs. In the case of K-12 schools, the goal would be to introduce international components into the school program; in the case of teacher preparation schools, it would be to incorporate coursework and experiences to better prepare teachers to incorporate global elements into their teaching.

Key to the competitive grant program would be a requirement that grant recipients have as a goal establishing an international partnership program between North Carolina and international schools in one of a limited number of countries. Countries would be chosen for participation either because they hold the potential to be economic partners for North Carolina, or because there are pre-existing working relationships with North Carolina. China, India and Denmark would be examples of countries that fit both categories.

The committee recommends that 30 grants per year be awarded to K-12 schools and that 2 grants per year be awarded to college/university schools of education. By sustaining the program for a four-year period of time, there could be at least one school with an international focus in each of the state's 115 school systems, and 8 international teacher preparation programs could be established.

To accelerate the creation of schools with an international focus, the committee recommends that businesses, especially those owned by corporations located in other countries, and the New Schools Project be enlisted to support the establishment of internationally-themed schools at a faster rate than would be possible through the 30-school-per-year grant program proposed above. The Gates Foundation has already supported the planning costs for a limited number of internationally-themed high schools. Potentially, foreign-owned businesses located in North Carolina could sponsor the establishment of additional schools and work with them to establish strategic partnerships in the country where their corporate owners are located.

To support such a network, the committee recommends the expansion of ncintheworld.org, an international resource center recently started at Learn NC. The expanded on-line resource center would include links to best practice sites across the country and the world, to teaching resources such as *National Geographic* and to other practitioners around North Carolina that are focused on international education. In addition to creating an on-line resource center, the committee recommends that Learn NC be given up to two positions to maintain and grow the center, and to provide technical support to schools. Additional support to the network should be provided by the state to the Center for International Understanding which would be charged with coordinating and facilitating exchanges and connections between schools in North Carolina and abroad.

Additionally, the committee recommends that schools receiving competitive awards be brought together at least twice a year for networking, training and sharing. Further, the committee recommends that groups as such WorldView or the Center for International Understanding that have experience in creating and supporting networks be provided resources to coordinate the follow-up and networking activities. The current funding for coordination of the North Carolina in the World initiative should be made recurring and increase over time.

As the five-year cost projections on the next page illustrate, the investment needed to create a network of schools with an international focus in all of the state's 115 school systems and in 12 of the state's college or university Schools of Education is very modest when compared to the over $6 billion annual investment in K-12 education.

COST PROJECTIONS TO CREATE A STATEWIDE NETWORK OF INTERNATIONALLY-FOCUSED SCHOOLS AND SCHOOLS OF EDUCATION

	Year One	Year Two	Year Three	Year Four	Year Five
30 School Planning/Study Grants ($25,000 each)	$750,000	$750,000	$750,000	$750,000	–
3 Planning/Study Grants for College & University Schools of Education ($25,000 each)	$75,000	$75,000	$75,000	$75,000	–
2nd Year Study/Implementation Grants for schools that received planning grants ($20,000 each)	–	$600,000	$600,000	$600,000	$600,000
2nd Year Study/Implementation Grants for Schools of Education ($20,000 each)	–	$60,000	$60,000	$60,000	$60,000
LEARN NC Resource Center (funding for 2 technical assistance positions; technology support & in-state travel)	$190,000	$199,500	$209,475	$219,949	$230,946
World View (funds to coordinate 2 sharing/ planning/ training conferences bringing together all pilot schools and Schools of Education twice each year; increases reflect an increase of participants each year)	$150,000	$250,000	$350,000	$450,000	$550,000
Center for International Understanding (to coordinate up to 3 study/planning trips to partner countries on an annual basis and to facilitate linking NC schools to partner school in other countries; funding covers travel and 1 coordinator position)	$196,500	$216,150	$237,765	$287,695	$316,465
Yearly Total	**$1,361,500**	**$2,150,650**	**$2,282,240**	**$2,416,490**	**$1,757,411**
GRAND TOTAL					**$9,968,291**

RECOMMENDATION

Emphasize Global Curriculum at the State Level

As reported to the committee by the Asia Society, a national leader in promoting teaching and learning about world regions, cultures and languages, other states are taking steps to increase global content in their schools. Some of the steps could be replicated.

For instance, one state is requiring that senior projects that must be completed prior to graduation be focused on an international subject like global warming or the impact of trade with other countries. North Carolina is making completion of a senior project a pre-graduation requirement, and the committee recommends that serious consideration be given to requiring that the project have an international focus. This would not only ensure that all students are focused on at least one major study of an international issue, it would also insure that teachers were given more exposure to international issues at the same time.

The committee also recommends that, as the state undergoes revisions in its course of study, curriculum committees be charged to increase the focus on international issues in all curriculum areas. This recommendation has the virtue of not adding additional costs to the curriculum revision process; however, it is critical if the state intends to increase student knowledge about the world.

To ensure that teachers are better prepared to incorporate international issues in their teaching, the committee recommends that recertification requirements for teachers be changed to require that a portion of the coursework/professional development be focused on international education. This change would not impose any additional costs to the state; nor would such a change require additional recertification credits for teachers. It would, however, begin building the capacity of teachers to integrate learning about the world into their daily instruction.

The one recommendation that would require a substantial investment is one that the committee believes must be addressed, and addressed with vigor. As noted earlier, the state in the eighties was a leader in foreign language instruction in the elementary grades with nearly 70% of elementary students taking foreign language coursework. Today that number has slipped to 28%. The committee recommends that the State Board of Education set as a goal re-establishing the state's elementary foreign language program to at least the level it was at in the eighties.

With that, the committee focused heavily on the difference between taking two years of a language to satisfy college admission requirements and taking multiple years of a language to achieve proficiency in speaking, writing, reading and understanding a language. In contrast to North Carolina students, students in most countries begin taking a language, typically English, in third grade and take it annually through high school. The committee recommends that the State Board of Education have proficiency as a goal for foreign languages proficiency, not simply exposure. Such a recommendation would require a language focus begun in elementary school and continued through the middle and high school years. Practically speaking, Spanish would be the most logical language for a focus on proficiency. Not only are there more and more Spanish-speaking citizens moving to North Carolina, but it would be far easier for schools to find qualified teachers of Spanish than it would be for other languages.

Further, the committee recommends that the state attempt to expand language offerings far beyond French, Spanish and German and work to see that languages like Chinese and Arabic are offered as well. That may require far more flexibility with teacher certification than is now allowed and, if that is the case, the committee recommends that the state adopt policies that enable schools to take advantage of the growing number of North Carolinians who are "heritage language speakers" and are fluent in native languages from around the world. Further, the North Carolina Virtual Public School could prove to be an indispensable vehicle through which non-traditional languages are made available to schools across the state.

Last, if global education is to be an integral part of the State Board's 21st Century curriculum, the committee believes that the Department of Public Instruction will need additional staffing resources that can build the DPI's capacity in the area of international curriculum, manage competitive grant programs and collaborate with other agencies and organizations to create high-quality networks and resource centers.

Additional Potential Experimentation

RECOMMENDATION

As noted earlier, one of the primary obstacles to expanding global education into all of North Carolina's schools is the natural inclination of schools to place a priority on those things that are tested, the things that hold schools accountable.

The State Board of Education should consider experimenting with innovative approaches to global education in two places that are less "driven" by testing requirements – afterschool programs and early college programs.

Afterschool programs, often focused on disadvantaged youth, attempt to blend academic support with enrichment activities that motivate and engage young people. The most successful of them have shown that activities normally reserved for top performing students (ie, chess clubs, science fairs, academic competitions, public performances), work equally well with at-risk youth when given the opportunity.

In like fashion, early college programs, while accountable for end-of-course test results, have considerably more freedom to experiment and to inject innovation into their programs.

In considering competitive grants that could lead to breaking new ground in global education, the state board should consider including afterschool and/or early college programs in the process.

RECOMMENDATION

Technology Capacity Issues

As the committee heard, short of exchange programs that give teachers and students an international experience, "the internet is the second-best thing to being there." Nationally, schools that are recognized as leading the global education movement are heavily reliant on technology.

In North Carolina, most schools have a technology infrastructure that will enable young people to use the benefits of the internet, as well as enable them to communicate face-to-face with students in other countries. However, as eNorth Carolina, an organization charged with making North Carolina a leader in the use of technology, has repeatedly pointed out, that is not true in all counties. Schools in geographic areas that lack sufficient bandwidth to take advantage of the educational resources available through technology are disadvantaged in the area of global education. The committee recommends that the General Assembly accelerate the funding of recommendations coming out of the eNorth Carolina studies of educational needs to make the benefits of technology a reality for young people across the state.

RECOMMENDATION

Accessing Community Resources

As the committee's work progressed, participants were struck by the wealth of resources available in the area of international education. Statewide, over 1,100 North Carolina-based companies are owned by overseas companies. Most have employees working in North Carolina who grew up and were educated abroad. Many have North Carolina employees who have traveled abroad to be trained and work with employers elsewhere.

Additionally, there are a growing number of organizations composed of ethnic or religious groups not native to North Carolina. In the Research Triangle, for instance, there are formal organizations bringing together Indian, Chinese, Japanese, Muslim and Mexican newcomers to the state, to name but a few.

These businesses and organizations offer schools an invaluable close-at-hand resource that can enrich the school program.

The committee recommends that the Department of Public Instruction and/or an organization like the Center for International Understanding compile a list of foreign-owned businesses and organizations that network and support newcomers to North Carolina as a resource for schools across the state.

THE CHARGE TO COMMITTEE THREE:

What would need to be done to give North Carolina the capacity to provide high-quality, high-volume professional development to support major initiatives such as making a priority out of improving the quality of science and mathematics instruction or incorporating global content into the curriculum of schools across the state?

The charge to this working committee might sound very straightforward. However, the state of professional development in North Carolina is such that the committee may have had the most difficult task of all of the working groups.

The task is difficult because, as has been documented by four recent examinations of professional development in North Carolina, there is not a comprehensive, systematic approach to building the capacity of teachers; responsibility for professional development is diffused; leadership is missing and the state has yet to make professional development a priority.

The reasons for this state of affairs are well-documented. At one point, the Department of Public Instruction (DPI) compared well to any state in the country when it came to professional development. Former DPI regional offices (now non-existent because of budget cuts) had reading, mathematics and science specialists in the field who concentrated on bringing good-quality training to schools across the state. At DPI, there were subject-area specialists who were available to schools. Any school system, rich or poor, urban or rural, could access professional development in key subject areas.

DPI's capacity in the area professional development ended as a result of a succession of agency cutbacks. Currently, with the exception of providing training support to the state's lowest performing schools, DPI is virtually a non-entity in the arena.

In the meantime, a number of public and private entities were funded by the General Assembly to fill the void. While several are now administratively under the UNC Center for School Leadership Development, the Principals Executive Program to name but one; others have been moved under other jurisdictions. The Teacher Academy remains virtually autonomous but technically is under the State Board of Education, and the Center for the Advancement of Teaching is now under the UNC Board of Governors. Still others, like Schools Attuned, are independent non-profits and not under the jurisdiction of any governmental agency.

While groups like these have capacity, what is missing is a system for marshalling training resources and insuring quality control. If the state were to launch an initiative aimed at dramatically strengthening the teaching of mathematics and science in elementary schools, there is not an administrative mechanism in place up to the task. If the state were to make global education a priority, it would be hard pressed to mount the kind of massive program that would be needed to make such an effort successful.

Four separate studies have been made of the state's capacity to deliver high-quality. One was done by a State Board of Education Task Force. One was conducted by the National Staff Development Council. One was part of the Forum's last Study Group project looking at how the state could respond to the Leandro ruling that found the state not meeting its constitutional obligation to young people. The last was privately funded by the Z. Smith Reynolds Foundation. They all concluded that the state needed to make professional development a priority; they all recommended that the state bring together the governance of the various groups providing professional development. For the most part, their recommendations have resulted in little change.

RECOMMENDATION

The Leandro Ruling and No Child Left Behind Lend Urgency to the Need for Leadership

Three factors make it more important than ever that the state address the issue of professional development. The first is the Leandro ruling that places the responsibility for school improvement directly on the shoulders of the state – the Governor's Office, the State Board of Education, the Department of Public Instruction and the General Assembly.

The second factor is the federal government's No Child Left Behind legislation. A major requirement of the federal

law is that states must provide technical assistance to low-performing schools and school systems. Currently 619 schools are not meeting the No Child Left Behind performance standards in both reading and mathematics.

Both the Leandro ruling and the No Child Left Behind legislation are clear in requiring that the state work to build the capacity of low performing schools. And central to building capacity is training or retraining the current teacher workforce to more effectively build the skills of their students.

The third factor goes beyond legal or federal requirements and speaks directly to the welfare of the 1.4 million young people attending North Carolina's public schools. Study after study concludes that building the capacity of teachers through high-quality professional development is one of the key strategies to building stronger schools and successful students.

There is no doubt that there is a need for a system of professional development. There is no question that the state has the responsibility to create such a system. The Leandro ruling and No Child Left Behind leave no room for delay in the matter. Yet, the state remains without a system of professional development.

Instead, North Carolina has, what one Study Group participant labeled, "random opportunities for professional development." The committee recommends that the State Board of Education charge DPI with creating and implementing a plan that would enable the state to meet its constitutional responsibilities as well as its federally mandated technical assistance duties by building its capacity to coordinate and deliver high-volume, high-quality professional development. Such a plan should build upon and incorporate existing state-funded resources.

The State Board of Education has just approved a departmental reorganization plan that creates a Division of School Innovation and Transformation. A director of professional development will be a member of that Division. The committee recommends that the State Board of Education's and the Governor's budget proposals to the General Assembly place a priority on increasing the DPI's staffing capacity in this area. As the following recommendations will make clear, for the state to develop the capacity to create an effective system of professional development, it will require adequate departmental resources to coordinate such an effort.

In addition to providing DPI with adequate resources to lead and coordinate a program aimed at building the capacity of local schools and school systems, the committee recommends that the State Board of Education seek General Assembly support for piloting a Professional Development Support Site that would bring training resources closer to schools and school systems most at-risk of not meeting the No Child Left Behind standards. Such a pilot, ideally, would be in eastern North Carolina, with the goal of having resources close at hand for systems serving large numbers of disadvantaged young people and, in many cases, for low-wealth systems that may not have the fiscal resources needed to provide ongoing, high-quality staff training.

The committee also recommends that the State Board of Education better use existing resources. Specifically, the Teacher Academy, a well-funded training organization, is now administratively attached to the State Board of Education, but accountable to its own Board of Directors. The committee recommends that the State Board seek legislative action to bring the Academy under the direction of the State Board, in an effort to better align existing state resources to the goal of having the state meet its constitutional and federal responsibilities. Such a move could provide resources necessary to staff a regional pilot Support Site without seeking new state funding.

RECOMMENDATION

Resources Are Less of an Issue Than Leadership & Policies

While resources, or the lack of them, are frequently blamed for a lack of progress, that is not necessarily the case in the matter of professional development. When one adds up all of the local, state and federal dollars spent in 2006 on professional development, schools and school systems had roughly $96 million. When one adds up all the state funds appropriated to the various organizations providing professional development there is $18,150,607 more being spent each year.

While there are well over $100 million of resources available, if one returns to the Committee Three charge, "How could the state launch a high-quality, high-volume training effort if it were to seek to improve the teaching of mathematics or science or incorporate global curriculum into the schools?," the money available is not available to the state – even though court decisions and the federal government hold the state responsible for school performance.

The reason for this is policy made by the General Assembly. Currently, by law, 75% of funds go directly to school buildings, where school principals and School Improvement Teams determine how to use the resources.

STATE FUNDED PROFESSIONAL DEVELOPMENT PROGRAMS

In addition to the $96 million of local, state and federal dollars available for schools to provide professional development, the state funds the following professional development programs.

$755,027	NC Center for School Leadership Dev.
$5,461,329	NC Teacher Academy
$**2,644,937**	NC Model Teacher Ed. Consortium
$**150,099**	Principal Fellows Program
$**3,790,153**	NC Center for the Advancement for Teaching
$**1,492,099**	Principal's Executive Program
$**344,576**	NC Math Science Ed. Network
$**476,501**	NC Teach
$**50,000**	NC Network
$**100,000**	Explornet
$**100,000**	NC Humanities Council
$1,000,000	Teacher Institute Program Communities in Schools
$**250,000**	Principal Executive Program Initiative
$**100,000**	A+
$**500,000**	SAS
$1,000,000	NC Teacher Academy *(training literacy coaches)*
$**670,000**	Math & Science Ed. Network PreCollege Expansion
$**520,908**	School Attuned
$18,650,607	**TOTAL**

The above represents a partial listing of programs that provide professional development for teachers and principals.

Source: DPI, FY 2006 and 2006 Budget Bill

Thus, if the state were to establish as a priority dramatically upgrading performance on mathematics at the elementary school level, it could not focus millions of existing dollars on mathematics training for elementary teachers. Instead, it would have to convince elementary schools that investing in mathematics training would pay dividends.

The committee recommends that this law be changed. As the law now stands, the state's lowest performing schools are expected to determine their training needs. Instead, the committee recommends a policy of "graduated flexibility." Under such a policy a school system or school building that is meeting all of its accountability goals would have full discretion in how it uses its professional development dollars. On the other hand, a school that persisted in registering below standard proficiency scores would be required to use their professional development dollars for training that directly addresses their areas of deficiency. In the case of school systems that are not meeting the No Child Left Behind standards, the DPI would be authorized to design a systemwide training approach that addresses the weaknesses that cause the systems to be below standards.

Recognizing that the North Carolina courts and the federal government both view the state as bearing the final accountability for school performance, the committee further recommends that in school years when the State Board of Education is launching a major initiative, such as a campaign aimed at improving mathematics performance or an effort to overhaul high school curriculums, it may use up to 25% of state professional development dollars to support the initiative. Professional development dollars would continue to flow to school systems, but systems would be required to expend a portion of those dollars for training that would support State Board of Education priorities.

RECOMMENDATION

Determine Training Needs And Identify Training Providers

At the moment, there is a broad consensus that there is a pressing need for high-quality professional development in North Carolina, but there is no way to gauge how widespread the need is, much less to identify the areas of critical need.

Given that the state is responsible for school performance, the committee recommends that the DPI should develop a method through which it can quickly and

efficiently conduct needs assessment surveys of low performing schools and school systems for which DPI is required by federal law to provide technical assistance. Needs assessments could be provided by DPI technical assistance staff members; or the work could be contracted out to organizations and/or colleges that have the capacity to gauge professional development needs. Such assessments should have as a goal identifying training needs that would most directly have a positive impact on school improvement and the findings of the assessments should be incorporated into school system and school building improvement plans.

The following two recommendations were originally made in the Z. Smith Reynolds Professional Development Initiative but warrant being repeated. The Initiative's recommendations stemmed from a representative group that included DPI, the State Board, representatives of the UNC and Community College systems as well as educators from schools across the state.

The committee recommends that DPI catalogue and maintain a comprehensive inventory of professional development providers and make that list easily accessible to school improvement teams, principals and other school officials via the internet. This could be done in collaboration with a group like LEARN NC. Such a listing should provide brief descriptions of the training offered by the provider.

A listing of providers would be a valuable resource to schools, but it would be even more valuable if there were a qualitative rating of the training provided. The committee recommends that DPI explore the feasibility of developing a system through which professional development providers could be rated for quality purposes. Short of that, the committee recommends that, in addition to cataloging training providers, DPI should create a feedback mechanism similar to that available to consumers of products offered by Amazon books or Netflix. That would enable users of providers to share with others brief reviews of the quality of the training provided.

RECOMMENDATION

Coordinate Professional Development Efforts More Closely with the University System

Frequently school system officials complain that many of the training demands placed on K-12 schools are largely the result of schools bearing the responsibility to provide "remedial" education for graduates of schools of education who have not been adequately prepared in their undergraduate years. This is especially true in areas such as dealing with diverse learning styles and the teaching of science and mathematics in the elementary grades.

As DPI formally assesses the professional development needs of low performing schools, it should catalog those needs that could be met with additional coursework in teacher preparation programs. Once a sufficient amount of needs assessment data has been accumulated, the committee recommends that DPI and the State Board of Education compare professional development needs to program approval standards the State Board sets for college and university Schools of Education. It may well be that changes in the program approval standards could eliminate the need for large, repetitive investments in training dollars once teachers graduate and are on the job.

In the short term, even with additional resources, the training needs for the hundreds of schools not meeting No Child Left Behind standards are such that support will be needed from schools of education. One barrier that inhibits the state from focusing resources where they are needed are the "regional service territories" understandings that prevent one UNC campus from working in the service territory of another UNC campus. The committee believes that when it comes to the state meeting its constitutional and federal educational obligations, artificial service territory boundaries are irrelevant. If one school of education excels in an area like mathematics instruction, its help should be able to be enlisted where needed, not only within a limited "service" area. This is an issue that both the UNC General Administration and the Education Cabinet should address.

Last, to return to the original committee charge that asked how could the state develop the capacity to deliver high quality, high volume professional development, if the state were to embark on a campaign to dramatically improve the quality of science teaching in the elementary grades, of necessity, it would require close working collaboration with UNC's Center for School Leadership. To insure closer alignment of resources to the goals of the State Board and to bring the state into constitutional compliance while meeting federal guidelines, the committee recommends the establishment of a standing committee on teacher development with representation from DPI, the State Board of Education, the Community College System, UNC and the Association of Independent and Private Colleges and Universities that would meet monthly and deliver semi-annual reports to the General Assembly's Education Oversight Committee on progress being made.

CONCLUSION:

Creating Internationally Competitive Schools

That concludes the recommendations of the three committees charged with examining how North Carolina could become competitive with leading schools around the world. In essence, all of the recommendations presented above can be summarized very briefly:

1) Place a priority focus on improving the delivery of instruction in mathematics and science by incorporating the best educational practices from states across the country and from nations around the world.

2) Launch an initiative that will result in schools throughout North Carolina incorporating education about the history, cultures, art and people around the world to better prepare North Carolina's young people to thrive in an increasingly global environment.

3) Take the necessary steps to give North Carolina the capacity to provide high-volume, high-quality professional development that will support the goal of giving all children a 21st Century quality of instruction.

While the basic thrust of this Study Group can be summarized quite easily, it will take will and determination to reach the goal of insuring that all children will succeed in a school environment that aspires to standards higher than any in the state's history.

Fortunately, a number of factors are in place that make this the right time for North Carolina to succeed in reaching new, and higher, levels of educational performance:

- The Governor and the State Board of Education have made North Carolina a pilot project state for the national 21st Century initiative that is designing ways through which states can create higher standards and expectations for all young people. They have also made North Carolina a part of "Project Achieve," an initiative of the National Governor's Association designed to modernize and strengthen school curriculum across the nation.
- The Governor has led the creation of NC in the World, an initiative designed to connect the schools and young people of North Carolina with schools and young people abroad. The initiative is also attempting to marshal the resources of corporations and communities that realize the need for better preparing young people to live and work in a global environment.
- Organizations like the North Carolina Science, Mathematics and Technology Educational Center are working to build public awareness of the need for the state's students to reach much higher level of mastery in STEM-related areas.
- The State Board of Education's recently adopted 21st Century goals lay out an ambitious mission that has the potential to remake the face of public education.
- At the national level, several coalitions of prominent business organizations, including the National Chamber of Commerce and the Business Roundtable, have joined together to create a new advocacy organization to promote a national concentration on bolstering America's capacity in science, mathematics, engineering and technology.

In short, North Carolina is already moving aggressively to reach much higher standards in mathematics and science. North Carolina is already working to be a national leader in international education. And professional development is the building block upon which success in each initiative will depend.

The Forum Study Group offers these recommendations to educational policymakers, educators, business leaders and tax payers in the belief that they can accelerate the positive work underway and contribute to a goal that unites the work of all of those focused on school improvement – to create a North Carolina system of schools that is second to none.

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