

Education for Norfolk's Future

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When the Tyson's packing plant closed early this year, Norfolk and surrounding communities lost some of the rarest assets in the American economy. A generation ago, factories and packing plants offered well-paid jobs for millions of college graduates, and even dropouts, who could have found no other route into the middle class. Today, many of those jobs have disappeared, and the remainder are following rapidly. The 1,650 jobs that vanished from the Norfolk area were among them. They will not be replaced.

With rare exceptions, today's economy produces only two kinds of employment. Most are unskilled retail and service jobs, flipping burgers or greeting the customers at Wal-Mart; they pay little more than the minimum wage and offer no health care or other benefits. It is barely possible for a two-earner couple to survive at this end of the labor market; no one can hope to build a comfortable, secure life from this kind of work. The other jobs are much better paid, and most of them offer at least some benefits; they provide a comfortable middle-class living for an average family. Unfortunately, they require a college degree, and often specific technical training. Mere high school graduates need not apply.

For many companies, this is a key factor in deciding where to locate their operations. Companies with well-paid, satisfying jobs to fill are far more likely to move into a community that offers a well educated, trained or trainable workforce than into a comparable area that does not. Thus, the effectiveness of the school system can make the difference between prosperity and lasting poverty for the community.

Coming out on the right side of this dividing line grows more difficult every year. To build a secure economic future for their people, a community's schools must equip students with the skills and background knowledge required for success in college or technical training. This includes not only proficiency in reading and writing and more math than most high school students ever learn, but skills in critical thinking and independent information gathering, especially on the Internet. And schools must deliver this education in an era of tight budgets, teacher shortages, federal mandates that are not always well conceived, and too many other obstacles.

Relatively few school systems meet these challenges successfully. Only 30 percent of high school students go on to receive a college degree, while 20 percent—and 40 to 50 percent in some minority communities—drop out of school before graduation. Even in the most successful school systems, the extreme

competition found in today's global economy constitutes a mandate for improvement.

Several years ago, Forecasting International set out to learn how our schools could better prepare students for a world increasingly dominated by technology. In a study of 300 school reform programs, Forecasting International found that the most successful ones shared some common elements. Either they had adopted the most effective teaching practices, or they had found ways to address demands that other schools had neglected. We believe that these findings offer Norfolk a variety of ways to improve its schools and build a more secure economic future for its residents. Here are some of the most important.

Clicks, Not Bricks

The most basic element of a good education is access to knowledge. In today's increasingly wired society, that increasingly requires the use of computers, the Internet, and other modern information technologies. In theory, at least, most schools today are wired learning centers that can tap into information anywhere in the world. Teachers are becoming mentors and catalysts whose job is not to lecture, but to help students learn to collect, evaluate, analyze, and synthesize information. For computer-literate teachers, much of this can be accomplished online. This offers important benefits, because online instruction is both effective and much less costly than teaching in person.

Given these advantages, it is time to get rid of the "edifice complex" and shift as much teaching as possible to the Internet. For example, students can "attend" lecture classes over the Internet and gather in a classroom only periodically for laboratory work, social interaction, and other functions enhanced by meeting face-to-face. This would dramatically reduce school costs while maintaining high educational performance. It also would reduce transportation costs and save long bus trips for students in far-flung rural districts. Most building budgets would be better invested on computer networks and hardware for students who do not already have their own computers than on new basal texts, which often are outdated by the time they are published.

This is not unknown territory. The public schools in Blacksburg, Virginia, have been fully wired for more than 15 years. Many schools (i.e., in Fairfax County, Virginia) are piloting online summer school programs. Measures as simple as supporting classrooms from websites maintained by individual instructors, or providing students with an online forum for writing revision, provide excellent starting points for schools just beginning to explore the use of instructional technology in the 21st century. These techniques are well developed at many colleges and some high schools. It is time for other high schools to follow their lead.

The New Ability Grouping is Individualized Instruction

Most schools have eliminated homogeneous grouping by ability level for good reason, but they did so at a cost. “One for all, and all for one” learning and “teaching to the middle” guarantees that the fastest learners will be perpetually bored, while the slowest will continually struggle. Deliver instruction to one group, and the other is inevitably lost.

Individualizing instruction is more sophisticated, more effective, and with proper training and implementation no more labor intensive. All students learn the same material, but students arrive via different routes. Student-centered instruction rooted in student choice and collaborative learning provides intrinsic motivation to learn, prepares students for the real-world application of their learning, and serves this end. In the end, everyone has mastered the essentials (standards defined by individual schools and school systems, rather than at the national level), a result that too many schools can only envy after two decades of reform efforts.

Promote for Achievement

Social promotion is clearly a bad idea, which sends students into the world unprepared to survive in the modern economy. None of the successful schools we studied still practices it. Yet the alternative mandated by the No Child Left Behind Act, a combination of national educational standards and high-stakes testing, has brought with it more problems than remedies. Many school systems have all but given up on enrichment, instead “teaching to the test” in order to make sure that their performance meets the letter of Federal standards, if not the needs of their students. Funds have been poorly allocated to support standardization, rather than improving education for all. And students have been taught to memorize a discrete body of knowledge rather than to acquire the critical thinking skills necessary for gathering, evaluating, and communicating information.

The answer is to provide the full range of resources to every student who needs them: high-intensity summer classes, tutoring, remedial classes after hours, and English-as-a-second-language for all who need it. Unfortunately, these all require money that cash-strapped educational systems find increasingly difficult to provide.

One example is Head Start, arguably the most successful program ever devised for equipping students to enter grammar school prepared to learn. For some 40 years, Head Start has been among the most important tools for eliminating social promotion. It also is among the most endangered. Even as the program’s costs rise, its inflation-adjusted budget has been cut each year since 2003. Even then, Head Start was able to serve only 20 percent of the children eligible for the program. The number of openings funded by Federal budgets has declined by nearly 20,000 children per year since then.

In order to prepare students for future success, Norfolk schools will have to compensate for the many obstacles placed in their path by Federal mandates and budget cuts. They must find some way to support Head Start or to replace it with equivalent local programs, then provide a rich choice of classes throughout the students’ time in the system. If Norfolk chooses to recruit a lobbyist to represent its interests in Washington, protecting necessary school programs could be one of his most important and time-consuming chores.

Unfortunately, providing a robust, comprehensive education for Norfolk children—the kind of education that will equip them to live a rewarding life in a high-tech economy—may require greater changes of policy in Washington than the current administration is willing to make.

High-Tech Vocational Education

If 30 percent of today’s high school students go on to college and 20 percent drop out before graduation, the other half must enter the workforce with a high school diploma. Few have the skills required to earn a good living in a high-tech economy. This situation is getting worse, rather than better.

Providing job skills for students not headed to college is the role of vocational education. Providing those skills in a high-tech economy calls for a new kind of vocational education suited for tomorrow’s medical technicians, computer programmers and repairmen, and other technology specialists. Students today require the kind of preparation that once came to them only on the job, and later through magnet schools. The Fairfax County (Virginia) Academy program is a model for schools that wish to graduate students who are qualified to enter or apprentice in the specialized workforce and maintain the infrastructure needed by all other business and service industries. Through this program, students attend academic classes for part of the school day and travel to other county schools that specialize in a broad range of professional fields (computer science, communications, auto technology, etc.) to gain professional skills and often certification.

In any form, high-tech vocational education is another crucial educational resource that is blocked or endangered by today’s draconian budget cuts. Again, this is one area in which Norfolk schools will have to seek support from the community’s representatives in Washington and Lincoln.

Lifelong Learning

It used to be that a career was for life. Once a carpenter, always a carpenter; once a chemist, always a chemist. Today, almost anyone’s job—even their entire industry—could be redefined or replaced by new technology. Thus today’s students will pursue an average of five entirely different occupations during their working lives. The only

way to survive in such an economy is through constant retraining.

This marks a sea change in American education. All the basic curriculum remains essential for every student. Yet added to it is the most fundamental skillset of all: learning to learn. If students do not understand by the time they leave high school that learning is a lifelong necessity, and have the ability to do it on their own, it will not matter what else they know. In the end, they will fail.

The need for lifelong learning also means that school systems face still more demands on their time and resources. Teens uncertain about going to college will train to earn a living. Adults will spend their evenings in class, preparing for their next careers. Teachers will study during nights and weekends to keep their subject knowledge and pedagogy current. Constant learning will become a way of life for all who wish to succeed. For 21st century schools, it will become a new mandate.

Pay for Performance

Teachers loathe the idea. Skeptics say it undermines the cohesion and team spirit that turns a group of individual teachers into an effective school. Educational academics have turned it into one more meaningless credential. Yet at Forecasting International we believe that merit pay, done correctly, can be one of the most effective ways to improve school performance.

It is true that various forms of merit pay have been tried in the past, usually with little success. For example, many Oregon communities experimented with it in the 1970s, and nearly all abandoned the plan by the 1980s. It proved costly and ineffective.

However, most such plans have been ill-conceived. For example, when K-12 teachers gain certification from the National Board for Professional Teaching Standards (NBPTS), they receive incentive pay of up to \$7,500 per year. By November 2005, more than 47,500 teachers had passed through this program. Yet four studies in as many years found that improvements in student achievement that could be attributed to NBPTS certification were so small they could hardly be measured. In one study of North Carolina teachers, the most effective 10 percent of uncertified teachers produced student achievement gains 10 to 20 times larger than those seen in classes taught by NBPTS-certified teachers. In this case, it seems that the NBPTS program offers merit pay for a fairly useless credential, not for more effective instruction.

In fact, it appears that pedagogical instruction beyond basic teaching methods and classroom management is largely wasted. (We exclude courses in teaching methods required for special-ed classes and similar challenges, of course.) Something else is clearly needed.

Two possibilities come to mind:

One, perhaps the more important, is to evaluate how effectively each teacher promotes student achievement. This has always been a difficult task, but in

recent years value-added assessment appears to have met the challenge. By providing a fair, effective measure of how much student performance improves under a given teacher, this technique can direct extra rewards to those teachers who show true merit, according to the only standard that matters, the performance of their students.

The other is to require that teachers actually know their subject. Some years ago, a group of 146 high-school math teachers in Houston volunteered to work after hours tutoring lagging students. These were in many ways the best of Houston's math teachers, the ones who cared enough to add extra hours of work to their overburdened schedules, without extra pay, for the sole benefit of their students. However, before beginning work, they decided to take the final exam for their classes, so that they could identify areas in which they themselves were weak and bone up so that they could better serve their students. *Fewer than half of them passed!* We hate to think how well their less motivated colleagues would have done.

It simply is not possible to teach effectively a subject one has not cared to learn. All the pedagogical training in the world will not help.

So offer merit pay for two achievements, and two only. Offer it for subject knowledge. And offer it for classroom performance, as demonstrated by value-added assessment—that is, by improvements in student knowledge and skill. Under no circumstances give it for having attained a credential whose value cannot be demonstrated in the classroom.

Thus far, the best example of an effective merit system we have found is the Teacher Advancement Program pioneered by the Milken Family Foundation. By late 2005, some 2,000 teachers in ten states had passed through the program. Effective teachers receive promotions from one level of pay and prestige to another, from career to mentor to master teacher. Although teachers are evaluated in several different ways, the critical factor is value-added assessment. Teachers whose efforts make a difference for their students get rewarded, and those who make the greatest difference get the biggest rewards. As a result, studies in Arizona and South Carolina have found that two-thirds of TAP schools turn in better student achievement than comparable institutions outside the program.

We do not wish to push the Teacher Advancement Program specifically. Yet it offers one good example of how merit pay can be made to work: Assess student achievement. Reward those teachers whose students show the greatest progress. It's a concept whose time came a long time ago, and it needs to be put into practice.

More Trends for Education

Although Forecasting International is a leader in trend analysis, and in fact devised many of the forecasting methods now in common use, we are far from the only forecasters mining this territory. In a book entitled *Sixteen*

Trends: Their Profound Impact on our Future (Educational Research Service, 2006), Gary Marx focused on the trends he considered most significant for the future of education. The trends were:

Trend 1: We're not as young as we used to be!

For the first time in history, the elderly in the developed nations will outnumber the young.

Trend 2: Highly diverse ... and looking good.

Shortly after 2050, non-Hispanic whites will become merely the largest minority in a nation of minorities.

Trend 3: Knowledge! It's the engine of the new economy.

In a high-tech world, knowledge workers and "creatives" are at a premium; knowledge and relationships—"intellectual capital" and "social capital"—are their most important assets.

Trend 4: Convergence and miniaturization ... less is becoming more.

As technology shrinks, the pace of communication increases; so does the rate of advancement or decline.

Trend 5: The future is already here.

Today's young people are tomorrow's leaders. The Millennial Generation will demand solutions to social problems and injustices, while their children will try to cut the losses and consolidate the gains made in the last four generations.

Trend 6: Let's get personal.

The movement toward standards and high-stakes testing will inspire a reaction that demands individualized education from a system committed to lifelong learning.

Trend 7: Assignment—put ideas together!

Releasing human ingenuity will be the first responsibility for both schools and society.

Trend 8: Every day, in every way, we're getting better and better.

Continuous improvement will replace quick fixes and defense of the status quo.

Trend 9: Let's try to do the right thing.

Widespread ethical choices will continue to emerge from scientific discoveries and societal realities.

Trend 10: The Earth is our home. Treat it well.

Only global education can defend us against the dangers of natural catastrophe, environmental neglect, and human conflict.

Trend 11: I want it my way!

Reasoned discussion will replace political and religious polarization—but only slowly.

Trend 12: We're all in this together.

International education, including diplomatic skills, will become essential in a time of growing interdependence.

Trend 13: Give me a break!

Under the pressures of high-tech society, people will grow less concerned about personal accomplishment and more about finding personal meaning in their lives.

Trend 14: Poverty makes us all poor.

Americans will gradually come to understand that sustained poverty is debilitating and unsettling, not only for the poor but for society at large.

Trend 15: What am I gonna do?

As technology replaces yesterday's jobs and creates new opportunities, society must figure out how to prepare people for careers that may not yet exist.

Trend 16: Educators ... apply here!

All these trends, plus demographic changes, will increase the need for education and will help to raise the demand for skilled teachers. By 2012, the U.S. will need 15.2 percent more elementary school teachers, 18.2 percent more high school teachers, 9 percent more secondary vocational teachers, 36 percent more preschool teachers, and 38.1 percent more college teachers.

We offer these trends as food for thought. Those forecasts that anticipate demographic or technological changes can be considered almost certain to prove accurate in the years ahead. Those that depend on significant changes of individual attitudes, ethical insights, or political behavior—for example, trends 9 through 14—may be less so.

Although all of these trends will be significant, to one degree or another, for Norfolk education, one in particular stands out in light of recent data. Norfolk is already feeling the effects of trend 2, the growing diversity of the American population. If its residents are like their neighbors in the rest of Nebraska, they may not be well prepared for this change.

According to the 11th annual Nebraska Rural Poll, reported in early August, less than one-third of Nebraskans now seem particularly welcoming toward newcomers to their communities. The remainder are either ambivalent or indifferent, or they specifically doubt that immigrants improve the quality of life there.

"You'd think we'd be really interested in recognizing the contributions that newcomers might be able to make and that we'd seek them out and make sure that they have that opportunity," commented University of

Nebraska sociologist Randy Cantrell, who carried out the study. “We seem to be missing out on this group as a potential resource in the community.”

Cantrell speculates that his findings may in part reflect the tight schedules of rural people with long commutes to work and social activities; they just don’t have time to worry about how immigrants will fare in the community. However, others may view newcomers with suspicion as urban problems such as drug abuse infiltrate rural areas. Simple xenophobia also may explain some of the negative feelings toward immigrants.

To the extent that this is true, it represents a future problem for Nebraska school systems. Our nation’s schools and libraries are the most important institutions through which immigrants become assimilated into their new communities. It is in the schools that they learn English, absorb local customs and attitudes, and over two or three generations become largely indistinguishable from their neighbors. To carry out their role in this process, school systems need resources such as adequate programs for English as a second language. Those resources must be paid for with tax dollars, most of which come from local budgets. In too many communities throughout the country, voters have proved unwilling to support their schools adequately, particularly when doing so meant raising their own tax bills to benefit the children of others. As immigrants make up more and more of the Norfolk school population, local leaders may find it even more difficult to fund school programs beyond the traditional “three Rs.” They will have to overcome this resistance if Norfolk is to provide a prosperous and secure future for its people.

Despite these and other concerns, we at Forecasting International remain cautiously optimistic about the future of our schools. In any poll, American voters—the people who must pay for our schools—consistently cite education as the highest priority in our national life. Thus, today’s experiments in cut-rate education will not survive longer than it takes to recognize their failure. If technology brings new challenges for our schools, it also provides many of the means to make education more effective.

Twenty years from now, Norfolk teachers and administrators may look back on the early 21st century as one of the most trying periods that their schools have ever survived. But they will also remember it as the time when they learned to give all their students an education suited to the modern, high-tech world.

Ten Trends for the Future of Education

1. THE ECONOMY OF THE DEVELOPED WORLD WILL CONTINUE TO GROW FOR AT LEAST THE NEXT THREE YEARS. ANY INTERRUPTIONS WILL BE RELATIVELY MILD.

- Unfortunately, in the United States one of those interruptions may be about to begin. After a brief recession following the 9/11 terrorist attacks, the American economy has been growing continuously for more than five years, through mid-2006. Today it is showing serious signs of weakness. The GDP grew by 4.1 percent in the third quarter of 2005 and by 1.1 percent in the fourth quarter. Growth has slowed in 2006, but remains around 2 percent annually.
- Consumer spending continues to rise, but its rate of increase has fallen from 0.9 percent in November and December 2005 to an average of slightly less than 0.2 percent in the first half of 2006.
- Disposable personal income has risen almost continuously since the recovery began, but not by enough to outpace inflation.
- The Conference Board’s Index of Leading dipped by 0.1 points in July; it has declined in four of the last six months.
- Durable goods orders, a predictor of long-term economic growth, scored a solid 3.5 percent growth in June, but were off by –2.5 percent in July as worries about the economy began to spread.
- Real estate once was extraordinarily resilient. Those days are past. New home sales tallied a rate of 1.07 million annually in July 2006, off from 1.12 million in June and down 21.6 percent from a year earlier. At the same time, the median price of new homes sold was \$230,000, down 1.6 percent from June and 10.5 percent from the year earlier. The supply of new homes available for purchase rose to a record 137,000 in June, up one-third from June 2005. All this is bad news because home construction accounted for 3 million jobs in 2005 and 10 percent of all new jobs created that year.
- Consumer inflation has begun to climb for the first time in several years. Prices were up 3.8 percent in the first half of 2006, and 2.2 percent even if the price of food and energy are omitted.
- Despite all this bad news, the economy created 111,000 new private-sector jobs in August and 128,000 in all. Even this was a bit disappointing, however. New job figures had averaged 206,000 through March of this year; since April, they have averaged only 119,000.
- Nonetheless, any downturn should be short-lived. America’s major export markets are in relatively good shape. The economies of China and India are still booming, and those of Europe are in better condition than they have been for many years. Even Japan has been showing mild growth for the first time in years. These markets will help to buffer any weakness in the American domestic economy.
- In the longer run, say by 2010, new oil refineries in Saudi Arabia and several other countries will come on

line, bringing the price of petroleum back down to around \$40 per barrel. This will relieve one major weight on the American economy.

Implications

- The current weakness of the American economy will recover into solid growth within two years.
- However, the Federal budget deficit and the continuing cost of the war in Iraq will make it difficult to take on many new domestic initiatives for several years.

Implications for Norfolk Education

- Virtually all Federal mandates in the future will be unfunded. These will mainly affect Special Education, an area in which change will continue to be mandated but with no supporting Federal dollars.
- Local taxpayers will have to absorb still more of the educational budget, as contributions from the state and Federal levels continue to decline.
- Recent school budget cuts are likely to be followed by further reductions.
- Performance deadlines under the “No Child Left Behind” program are likely to be extended repeated in the future until Congress or a new administration comprehensively revamps the program. Improved performance and smaller budgets are mutually exclusive.
- The shrinking budget for Head Start and other programs fatally undermine efforts to improve performance later in children’s school careers.
- Five years from now, unless Bush administration tax cuts are rescinded, the growing Federal budget deficit could begin to inhibit economic growth. This eventually could make it difficult or impossible to hold state and local taxes at the levels required to maintain even school programs stripped to mere basics.

2. AMERICA’S POPULATION IS GROWING AND CHANGING RAPIDLY.

- Until recently, the U.S. Census Bureau estimated that the population would reach nearly 283 million by July 1, 2003 and 325 million in 2020.
- For 2001, the report expected 18.9 million Americans under age 5 and 78.9 million under age 20. It forecast that in 2020 there still would be only 22 million children under age 5 and 85.7 million under age 20.
- The U.S. birth rate is so low, according to the Centers for Disease Control and Prevention, that the population could actually decline. In 2002, it was 13.9 per 1,000 persons, down 17 percent since 1990, to an all-time low.
- Despite this, by September 2006 there were 299 million Americans, and the population was expected to grow to 335.8 million in 2020.
- This difference is made up by just one group. Latinos are now the largest minority in the United States, 39.9

million as of mid-2005. Their population expanded by no less than 76 percent between 1990 and 2003. This extraordinary growth is due to high birth rates as well as immigration. At 2.5 births per woman per lifetime, Latinos are one on only two groups whose fertility is much above the replacement level of 2.1 the other group is evangelical Christians

- Over all, the elderly are the fastest-growing segment of the population. In 2001, 35 million Americans were age 65 or older. By 2020, that number will leap to at least 53.7 million.
- The number of retirement-age Americans in the future is likely to be even larger than anticipated, because advances in geriatric medicine will add years to our life expectancy, even for those now in middle age.

Implications

- Rapid population growth will reinforce American dominance of the global economy as the European Union fall to third place, behind the U.S. and China.
- Current minority groups will make up an ever larger part of the American population. By 2050, Caucasians will comprise less than half of the population.
- According to most forecasts, there soon will be only two working-age Americans to support each Social Security recipient, down from nearly seven when Social Security was established. Immigration and the remarkably high Latino birth rate may delay this “contributor deficit,” but they will be offset by medical advances that will keep many Baby Boomers alive and well long into their 80s.

Implications for Norfolk Education

- The number of school-age children will be significantly higher than planners anticipated for much of the next two decades.
- There will continue to be a shortage of qualified teachers, particularly in Special Education and Teaching English to Speakers of Other Languages (TESOL/ESOL).
- State and local budgets for education will be more hard-pressed than anticipated, particularly in the high-growth states of the South and West, and in northern cities such as New York and Chicago, which traditionally receive large numbers of immigrants. This will make it extremely difficult to build and staff new schools, a problem that will grow worse as Federal budget deficits continue to balloon.
- This is another reason to replace bricks with clicks in a curriculum delivered at least in part over the Internet.

3. THE GROWTH OF TECHNOLOGY IS CREATING A MORE AFFLUENT, HOMOGENEOUS, AND KNOWLEDGE-DEPENDENT SOCIETY.

- In all fields, the previous state of the art is being replaced by still newer technology at an ever faster rate.
- Roughly 80 percent of all scientists, engineers, and physicians who have ever lived are alive today—and trading ideas in real time on the Internet.
- Half of what college students learn in their freshman year about the cutting edge of science and technology is obsolete, revised, or taken for granted by their senior year.
- The so-called “digital divide” is gradually disappearing. One recent poll found that half of white households in the U.S. owned computers. So did 43 percent of black households, and their numbers were growing rapidly. The percentage of Latino households owning computers is lower, but their rate of computer ownership was expanding as well. While the divide still exists (especially in rural areas), it is shrinking progressively.
- The Internet makes it possible for small businesses throughout the world to compete for market share on an even footing with industry leaders.
- By 2010, real-time translation systems will make it possible to speak into a telephone in any of eight or nine major world languages and be heard at the other end in any of the others.
- Technology also is bringing new medical advances almost daily. The Human Genome project already has spun off new treatments for heart disease, cancer, AIDS, and many other disorders. Drugs designed by computer modeling are more effective and produce fewer side effects than their predecessors. And tissue transplants now promise radical new treatments for diabetes, Parkinson’s disease, perhaps Alzheimer’s, and many other refractory diseases.
- Memory-enhancing drugs should reach clinical use by 2012.

Implications

- New technologies often require more education and training to use them effectively. They also provide endless new opportunities to create businesses and jobs. Corporations with over 300 employees already recognize this need and have begun to provide time and compensation for training, considering it an investment rather than an expense.
- Knowledge workers are generally paid better than other workers. Their proliferation is raising overall prosperity.
- For a good career in almost any field, computer competence is mandatory. Even entry-level jobs and formerly unskilled positions require a growing level of education. For many workers, training is one of the most desirable benefits a job can offer.
- Technology makes industries more productive, which should continue to make developed lands even

wealthier. However, it also replaces human workers, slowing the recovery of job growth.

- By 2008, half of all knowledge workers (22 percent of the labor force) will opt for “flextime, flexplace” arrangements, which allow them to work at home, communicating with the office via computer networks.

Implications for Norfolk Education

- Schools will need to provide resources (both time and money) so that faculties can upgrade their skills and knowledge. They will need to begin to consider this as an investment rather than an expense in order to recruit and retain the best educators in their classrooms.
- Demand for computer and Internet training at the junior-high and high-school levels can only grow.
- Technology also raises the importance of information gathering and interpretation, critical thinking, and problem-solving skills. Students who do not learn these skills in school will be unprepared for success in college or a career after graduation. High stakes testing and similar offshoots of the standards movement work in direct opposition to this, requiring instead rote learning of a discrete body of knowledge. The jury is still out on the long-term effects of this.
- Computers and the Internet also make it possible for students to do more in-depth research in all their classes, as their time and talents allow. Research needs to be a curricular strand in all, rather than some, schools and subject areas.
- Teachers who still are not comfortable with computers and related technology can no longer do their jobs effectively. Those with a higher comfort level need ongoing training to upgrade their skills as technology rapidly advances.
- Sharing of classroom resources over the Internet, online lectures, international exchanges over the Net, and other high-tech educational methods will be a growing part of the curriculum.
- Television is a major (and often under-utilized) asset, especially in the early grades. Throughout the world schools use *Sesame Street*, *The Learning Company*, and other American educational programs as teaching resources, with local-language captions added and teachers acting as moderators and guides. It is time for American schools to follow their lead. Visual/aural learners stand to benefit enormously, and all students need continual refinement of their media literacy. They cannot be expected to critically evaluate the visual texts in which they are immersed unless this becomes an integral component of their classroom experience. Abandoning this kind of enrichment to prepare for high stakes testing raises major educational concerns and is ill advised.
- As technology makes some jobs obsolete and creates new ones, many workers will have to spend part of their time training for their next career. Public schools

will be asked to provide some of this training after the normal school day is done.

- Teachers also need to adopt life-long learning, both in their subject specialties and in pedagogical practice. Science and technology in particular are experiencing rapid change, and teachers who rely on textbooks for their curriculum guarantee that their lesson plans will be obsolete.
- Schools, libraries, and community centers may also evolve into general-purpose Net-access facilities, where students can gather to study online and adults can telecommute to remote jobs, reducing rush-hour traffic. This would be a very effective use of resources.
- Foreign languages may be “de-emphasized” as well, because students increasingly can communicate in English anywhere in the world. Of the world’s 193 countries, 142 now teach English as a second language by the third grade. This is somewhat problematic; foreign language study helps students to understand the grammatical structures of their native languages and builds cross-cultural awareness. However, as technology replaces the need for multi-lingual employees in the business world, it will become a lower priority for public schooling.

4. EDUCATION AND TRAINING ARE EXPANDING THROUGHOUT SOCIETY.

- According to the National Education Association, more than 2 million new teachers will be needed in the decade ending 2010, both to replace the retiring generation of educators and to take care of growing demand.
- Rapid changes in the job market and work-related technologies require increased training for virtually every worker.
- Automation, international competition, and other fundamental changes in the economy are destroying the few remaining well-paid jobs that do not require advanced training.
- A substantial portion of the labor force will be in job retraining programs at any moment.
- Adult education is expanding. One reason is the need to train for new careers as old ones are displaced or Boomers grow bored with them. The other is the need of healthy, energetic people to keep active during retirement.

Implications

- Both management and employees must get used to the idea of lifelong learning. It is becoming a significant part of working life at all levels.
- State, local, and private agencies will play a greater role in training by offering more internships, apprenticeships, pre-employment training, and adult education.

- As current minority and low-income households buy computers and log onto the Internet, groups now disadvantaged will increasingly be able to engage in online education.

Implications for Norfolk Education

- The time will come when schools must train both children and adults around the clock. The academic day will grow longer. Adults will use much of their remaining free time to prepare for their next jobs.
- Rather than allowing high school seniors to waste valuable time between their acceptance into college and the start of their freshman year, we will need various means of encouraging them to engage in pre-professional, resume-building experience (i.e., independent study, international exchange programs, apprenticeship, internship, certification programs.)
- The best schools may find it increasingly difficult to maintain their superiority as other districts compete for the most capable teachers.
- There is a growing need for professional certification programs for computer technicians and software specialists that meet the standards set by Microsoft, Cisco Systems, and other industry leaders. These companies should be approached for aid in establishing high-tech voc-ed programs at the local level.

5. SOCIETAL VALUES ARE CHANGING RAPIDLY.

- Developed societies will increasingly take their cue from Generations X and Dot-Com, rather than the Baby Boomers who have dominated its thinking for most of four decades. (This is examined in detail in the next trend.)
- This will tend to homogenize certain basic attitudes throughout the world, because Gen Xers and especially Dot-Coms around the globe have more in common with each other than with their parents.
- In the future, both self-reliance and cooperation will be valued—self-reliance because we will no longer be able to fall back on Social Security, pensions, and other benefits; cooperation because group action often is the best way to use scarce resources, such as retirement savings.
- Post-9/11 worry over the threat of future terrorist attacks have led Americans to accept almost without comment security measures that their vaunted love of privacy would once have made intolerable. This continues a long-established tendency in the United States to prefer a greater sense of safety at the cost of greater government surveillance and intervention in their lives.
- Once national security issues lose their immediacy, family issues will again dominate American society, at least through 2010: education, long-term health care,

day care, anti-drug campaigns, and the environment. In most surveys, Americans rate education as one of the top two national priorities.

- Narrow, extremist views of either the left or the right will slowly lose their popularity. Moderate Republicans and conservative Democrats will lead their respective parties.
- Some liberal views will return to the mainstream in the next few years, thanks to the 30-year Hegelian swing in which liberal and conservative philosophies vie for dominance in American society, eventually reaching stable compromises on most issues.
- Some drugs (i.e., marijuana) will eventually be decriminalized. Funds saved from the criminal-justice system will be used for anti-drug education and for the treatment of drug users—a more humane and effective approach to the problem that places emphasis on decreasing demand rather than supply. Voters in California, Alaska, Arizona, Colorado, Hawaii, Nevada, Oregon, and Washington have already legalized the medical use of marijuana.

Implications

- Current accounting reforms are just the leading edge of a wave of stockholder protection laws and regulations that can be expected within the next five years.
- Support for tax-reduction-at-all-costs will be replaced by a demand for efficient and effective use of whatever tax monies are required to accomplish national goals such as quality education.

Implications for Norfolk Education

- Support for test-oriented rote learning of the kind required by the “No Child Left Behind” program will slowly be replaced by an emphasis on the student’s thinking and information skills, as revealed by more sophisticated measures of educational performance.
- The current gutting of Head Start will be re-evaluated by future administrations, and the program will be extended to all students who need it, even at the cost of budget cuts in other areas of education.

6. GENERATIONS X AND DOT-COM WILL HAVE MAJOR EFFECTS IN THE FUTURE.

- Members of Generation X (roughly, the 30-something cohort) and especially of Generation Dot-Com (now in their 20s) have more in common with their peers throughout the world than with their parents’ generation.
- The under-20 cohort is remaining in school longer and taking longer to enter the workforce than before.
- Generation X should be renamed “Generation E,” for entrepreneurial. Throughout the world, they are starting new businesses at an unprecedented rate.
- The Dot-Com generation is proving to be even more business-oriented. Twice as many say they would

prefer to own a business rather than being a top executive. Five times more would prefer to own a business rather than hold a key position in politics or government.

- Many are economically conservative. On average, those who can begin saving much earlier in life than their parents did in order to protect themselves against unexpected adversity. Even Dot-Coms already are buying their own homes to ensure their future security.
- They get information very quickly, from CNN and *USA Today*. Time is everything to them. They are not concerned with in-depth reporting. In his groundbreaking *Gutenberg Elegies*, Sven Birkerts identifies them as information-gatherers who skim texts for facts rather than dwelling on the “soft data” found in context and/or literary text. This represents both a cultural and a paradigmatic shift.

Implications

- Employers will have to adjust virtually all of their policies and practices to the values of these new and different generations.
- Managers will have to find new ways to motivate and reward new-generation employees, and to earn their respect. Generations X and Dot-Com thrive on challenge, opportunity, training—whatever will best prepare them for their next career move.
- For these generations, lifelong learning is nothing new—it’s just the way life is. Employers who can provide diverse, cutting-edge training will have a strong recruiting advantage over competitors who offer fewer opportunities to improve their skills and knowledge base.
- Generations X and Dot-Com are well equipped for work in an increasingly high-tech world, but many have little interest in their employers’ needs and have a powerful urge to do things their own way.
- Gen Xers watched their parents remain loyal to their employers, only to be down-sized out of work. As a result, they have little corporate loyalty. Many will quit their job at even the hint of a better position.
- For many Generation Xers (the post-Baby-Boom generation), work is only a means to an end: money, fun, and leisure.
- The absolute bottom-line orientation of the new generations could drive both corporations and government to new efficiency.
- Because these generations are so small, there will be a shortage of entry-level and low-wage workers in the coming decade.

Implications for Norfolk Education

- Denise Pope Clark (*Doing School*) documents the existence of a new breed of student, born of a culture in which people begin building a resume and working on college qualifications as early as 6th grade. These students lack a sense of the intrinsic motivation of

learning, bearing instead the enormous burden of part-time jobs, extracurricular activities, community service, and maintaining competitive test scores and grade point averages. In order to become lifelong learners, they will need educators who can skillfully weave choice and relevance in their curricula so that students experience both pleasure and academic success during their schooling.

- Generation X and Dot-Com teachers can cope with computers and other arcane hardware with an ease and comfort level their Boomer colleagues can only envy. This will ease the problems of high-tech education in the years to come.
- Their personal attitudes are another matter. Educational systems are as structured and bureaucratic as any segment of society outside the military. They also require long hours, dedication, and a lower pay scale than many less demanding fields. This is not the ideal environment for generations that expect plenty of money and time off to enjoy it. The attrition rate among new teachers will be even worse in the next decade, for a multitude of reasons (among them a lack of professional respect and salaries that do not match their experience and level of education.)

7. YOUNG PEOPLE PLACE INCREASING IMPORTANCE ON ECONOMIC SUCCESS, WHICH THEY HAVE COME TO EXPECT.

- Adolescents and young adults have a limited historical perspective. Throughout the 1990s—effectively, their entire adult lives—Generations X and Dot-Com knew only good economic times, and the current economic downturn seems to them a confusing aberration, rather than a predictable part of the business cycle. Most expect to see hardship on a national level, but they both want and expect prosperity for themselves.
- Generations X and Dot-Com are the most entrepreneurial generations in history.
- This is fortunate, because many existing jobs may be effectively closed to the young, as older Baby Boom workers retain their health and remain in the workforce much later in life than their parents did.
- In the United States especially, most young people have high aspirations, but many lack the means to achieve them. Only one in three high-school graduates receives a college degree. Many of the rest cannot afford the high cost of further schooling.
- Without higher education, expectations may never be met: The real income of high-school graduates has declined steadily for more than 50 years. In addition, more young people report no earnings—up from 7 percent of all 20- to 24-year-old men in 1973 to a relatively constant 12 percent since 1984.

Implications

- This is a global trend, as members of Generations X and Dot-Com tend to share values throughout the world. Gen X and Dot-Com entrepreneurs are largely responsible for the current economic growth in China, where they are becoming a major force in the Communist Party. In India, the younger generations dress and think like their American counterparts, not their parents.
- The continuing presence of Baby Boomers in the workforce could create a generational conflict, as retirement-age employees keep jobs that younger workers feel rightfully belong to them. Taxation to pay the growing cost of Social Security and Medicare could easily degrade the quality of life for younger workers, causing even more resentment. The fact is that both groups are needed: Baby Boomers often bring experience, maturity, judgment, loyalty, work ethic, and corporate memory to the workplace; younger workers often bring energy, greater discretionary time, innovative thinking, and an ease with advancing technology, among other assets. The challenge is in balancing the needs and presence of both.
- If younger workers find their ambitions thwarted, they will create growing pressure for economic and political changes. This will be felt at the local level as well as nationally.

Implications for Norfolk Education

- The emphasis on economic success places growing pressure on local governments to provide high-quality education, so that young people can realistically hope to achieve future prosperity.
- The most critical job skills include traditional curriculum items such as reading, writing, speaking, and basic mathematics; concerns such as critical thinking, reasoning, and problem solving; and new fields of study, such as the use of computers and the Internet. Added to this list are media literacy and a basic understanding of statistics, to help students cope with a society in which journalists, advertisers, marketers, and politicians routinely manipulate information to reach their target audience. However, arguably the most important job skill students need is the self-discipline required to get to work reliably and complete assignments well and on time. No school can be considered successful unless its students master all these skills.
- This trend underlines the need for high-tech vocational programs, to ensure that graduates who are not college-bound are prepared to begin a good career.

8. GROWING ACCEPTANCE OF CULTURAL DIVERSITY, AIDED BY THE UNIFYING EFFECT OF MASS MEDIA, IS PROMOTING THE GROWTH OF A TRULY

INTEGRATED SOCIETY. HOWEVER, THIS IS SUBJECT TO LOCAL INTERRUPTIONS AND REVERSALS.

- Our beliefs and values are shaped by what we see and hear. Throughout the United States, people have long seen the same movies and TV programs.
- Information technologies promote long-distance communication as people hook up with the same commercial databases, computer networks, and above all the Internet.
- Within the United States, regional differences, attitudes, incomes, and lifestyles are blurring to some extent as business carries people from one area to another.
- Inter-marriage also continues to mix cultures geographically, ethnically, socially, and economically.
- The Latino population (and to a lesser extent African-Americans and Asians) are growing faster than the Caucasian population, and consequently are beginning to exert more influence over national agendas.
- However, in many countries there are powerful reactions against similar changes. The growth of the German neo-Nazi movement (in the U.S., groups such as the Aryan Nation) is one obvious example. We see a similar impulse in crimes toward Muslims in the United States after the September 11 terrorist attacks.

Implications

- Over the next half-century, this trend will help to reduce some of the conflicts and inequities that plagued the twentieth century. However, this is likely to produce a violent backlash among a xenophobic minority of Americans.
- The current freeze in negotiations with Mexico for some sort of “guest worker” status for Mexicans who now migrate illegally to the U.S. Southwest is only temporary. As fears inspired by 9/11 ease, the underlying problems of illegal immigration will recapture Washington’s attention, and talks will begin again.

Implications for Norfolk Education

- The greatest responsibility for coping with foreign-born residents will continue to fall on two public institutions, schools and libraries. Primary concerns for schools include providing all students with a solid grounding in English and finding ways to recruit and reward only the best teachers.
- For a time, hostility toward new immigrants could make it more difficult to obtain adequate funding from long-time residents unwilling to spend the tax dollars needed to educate the foreign-born.
- During this transition period, cultural conflicts may become more common in school and in daily life.
- Individual teachers will need to be familiar with the cultures of their students, both to provide the best possible education and to avoid incidents that can be embarrassing or worse. Teachers will continue to need

pre-service and in-service training that specifically addresses their ability to deliver multicultural and culturally-aware instruction, at all grade levels and in all subject areas.

- Teaching English to Speakers of Other Languages (TESOL/ESOL) becomes not only a necessity for students trying to enter American society, but a tool for preventing cultural conflicts and miscommunications.
- The possibility of conflict among classmates from different cultures raises the importance of training students in interpersonal skills, negotiation, and conflict resolution—abilities that will serve them well in their future careers.

9. THE WORK ETHIC IS VANISHING.

- Tardiness is increasing; sick-leave abuse is common.
- Job security and high pay are not the motivators they once were, because social mobility is high and people seek job fulfillment. Some 48 percent of those responding in a recent Louis Harris poll said they work because it “gives a feeling of real accomplishment.”
- Fifty-five percent of the executives interviewed in the poll say that erosion of the work ethic will have a major negative effect on corporate performance in the future.
- In one survey, 60 percent of college freshmen business students surveyed said they would have been willing to spend three years in jail and have a criminal record if their crime would net them \$5 million. In other polls, two-thirds of American children said they would cheat to pass an important examination; 90 percent of adults admitted that they regularly lie; and 38 percent of the under-30 population said that being corrupt was “essential” in getting ahead.
- Ethics at the top are no better. Enron, WorldCom, Tyco International, Adelphia Cable, and ImClone just begin the list of companies investigated or prosecuted for deceptive accounting practices, looting of corporate assets, and other misdeeds with dire implications for stock values.
- Seeking the root of such problems, a Zogby International poll of college seniors found that 97 percent said that their studies had prepared them to act ethically in the future. However, 73 percent said that professors had taught them that right and wrong are not susceptible to uniform standards, but depend on individual values and cultural norms.

Implications

- The new generation of workers cannot simply be hired and ignored. They must be paid well and made to feel appreciated. Training is crucial. Without the opportunity to learn new skills, young people will quickly find a job that will help them to prepare for the rest of their career.

- As part of worker training, companies may have to give their employees the solid grounding in ethics that some parents and schools have omitted. This may need to be repeated as executives advance to higher levels, using case studies related to their new responsibilities.

Implications for Norfolk Education

- The International Baccalaureate advanced placement program weaves ethics into instruction across its curriculum. This is an important model for all instructional programs. Students must have a forum in which they can engage in ethical inquiry and a supervised exploration of ethical issues before they finish high school. Adolescents and young adults are capable of ethical and decision-making exceeding our expectations, but need for it to be placed in the forefront of their awareness in an environment where they can practice its application.
- Focused on material success, the most capable Gen Xers and Dot-Coms will be even harder to attract to teaching than their Baby Boom predecessors were. This will make it harder to fill classrooms with skilled educators.
- Ironically, the greatest hope of overcoming this problem is a continuing job shortage, which would force new college graduates into fields they would not otherwise consider. Teaching could be a prime beneficiary of a tight labor market. However, even in the worst of likely downturns, Forecasting International expects the unemployment rate to begin dropping again by late 2007 or early 2008.

10. TIME IS BECOMING THE WORLD'S MOST PRECIOUS COMMODITY.

- Computers, electronic communications, the Internet, and other technologies are making national and international economies much more competitive.
- In the United States, workers spend about 10 percent more time on the job than they did a decade ago. European executives and non-unionized workers face the same trend.
- In this high-pressure environment, single workers and two-income couples are increasingly desperate for any product that offers to simplify their lives or grant them a taste of luxury—and they can afford to buy it.

Implications

- Demand for services catering to affluent, highly stressed families can only grow.
- Stress-related problems with employee morale and wellness will continue to grow. Companies must help employees balance their time at work with their family lives and need for leisure.
- Brand names associated with efficient, reliable service are coming to seem even more desirable among Baby

Boomers and senior citizens. Among younger buyers, this is no more than a foot in the door.

- As time for shopping continues to evaporate, Internet and mail-order marketers will have a growing advantage over traditional stores.

Implications for Norfolk Education

- Parents pressed for time will continue to view schools as a kind of day-care program for their children.
- Irritants of any sort, from clogged highways to noisy neighbors, will be considered even less tolerable by residents whose nerves are frayed by the growing pressures of work and daily life. This could eventually create more demand for recreational services, highway construction, and public safety, which will compete with the schools for pinched local budgets.
- Teachers are among the most leisure-deficient groups in society. Schools must find ways to streamline their workloads, so that teachers can spend more time in planning their classes and honing their skills, as well as taking time to recharge.
- One of the best ways to do this may be to expand efforts to recruit volunteer assistants from the Norfolk business and senior communities, whose skills and experience can take some of the burden from overworked teachers.