

Sixteen Trends...That Will Profoundly Impact Our Future

Gary Marx, President, Center for Public Outreach

(Note: The symbol → indicates a substantial trend leading from one condition to the next, while ↔ indicates a trend that can be expected to develop or continue based on evidence and the reality that certain existing conditions are very likely unsustainable. In some cases, a tug is evident between current and future conditions.)

- **In many developed nations, the old will substantially outnumber the young. In many developing or underdeveloped nations, the young will substantially outnumber the old.**
Worldwide: (Developed World: Younger → Older. Underdeveloped World: Older → Younger)
- **Growing numbers of people and nations will discover that if they manage their diversity well, it will enrich them. If they don't manage their diversity well, it will divide them.**
Worldwide: (Diversity = Division ↔ Diversity = Enrichment)
- **Social and intellectual capital will become economic drivers, intensifying competition for well educated people.**
(Industrial Age → Global Knowledge/Information Age)
- **Standards and high stakes tests will fuel a demand for personalization in education systems that will be increasingly committed to lifelong human development.**
(Standardization → Personalization)
- **The Millennial Generation will insist on solutions to accumulated problems and injustices, while an emerging Generation E will call for equilibrium.**
(GIs, Silents, Boomers, Xers → Millennials, Generation E, with variations among nations and regions)
- **Continuous improvement and collaboration will replace quick fixes and defense of the status quo.**
(Quick Fixes/Status Quo → Continuous Improvement)
- **Technology will increase the speed of communication and the pace of advancement or decline.**
(Atoms → Bits) (Micro → Macro → Nano → Subatomic)
- **Release of human ingenuity will become a primary responsibility of education and society.**
(Information Acquisition → Knowledge Creation and Breakthrough Thinking)
- **Pressure will grow for society to prepare people for jobs and careers that may not currently exist.**
(Career Preparation ↔ Career Adaptability)
- **Competition will increase to attract and keep qualified educators.**
(High Demand → Even Higher Demand)
- **Scientific discoveries and societal realities will force widespread ethical choices.**
(Pragmatic/Expedient → Ethical)
- **Common opportunities and threats will intensify a worldwide demand for planetary security.**
(Personal Security/Self Interest ↔ Planetary Security)
(Common Threats ↔ Common Opportunities)
- **Understanding will grow that sustained poverty is expensive, debilitating, and unsettling.**
(Sustained Poverty ↔ Opportunity and Hope)
- **Polarization and narrowness will bend toward reasoned discussion, evidence, and consideration of varying points of view.**
(Narrowness ↔ Open Mindedness)
- **As nations vie for understanding and respect in an interdependent world, international learning, including diplomatic skills, will become basic.** (Sub-Trend: To earn respect in an interdependent world, nations will be expected to demonstrate their reliability and tolerance.)
(Isolationist Independence ↔ Interdependence)
- **Greater numbers of people will seek personal meaning in their lives in response to an intense, high tech, always on, fast-moving society.**
(Personal Accomplishment ↔ Personal Meaning)

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Notes
Sixteen Trends
Their Profound Impact on Our Future

What are the implications of these trends:

How we operate our schools and school systems...and for school business officials?

- 1.
- 2.
- 3.
- 4.
- 5.
- 6.
- 7.
- 8.
- 9.
- 10.
- 11.
- 12.
- 13.
- 14.
- 15.

Thinking about the trends and the implications you've identified, develop three statements, one sentence each, indicating what business officials at schools and/or colleges and their education systems might consider doing to deal with all or some of these trends.

- 1.
- 2.
- 3.

(Source: Gary Marx, President, Center for Public Outreach, Vienna, Virginia, USA)

Notes
Sixteen Trends
Their Profound Impact on Our Future

What are the implications of these trends:

For what students need to know and be able to do...their academic knowledge, skills, behaviors, and attitudes?

- 1.
- 2.
- 3.
- 4.
- 5.
- 6.
- 7.
- 8.
- 9.
- 10.
- 11.
- 12.
- 13.
- 14.
- 15.

Thinking about the trends and the implications you've identified, develop three statements, one sentence each, indicating specific adjustments schools might consider making in what they teach their students.

- 1.
- 2.
- 3.

(Source: Gary Marx, President, Center for Public Outreach, Vienna, Virginia, USA)

Notes
Sixteen Trends
Their Profound Impact on Our Future

What are the implications of these trends:

For economic growth and development and quality of life in our community?

- 1.
- 2.
- 3.
- 4.
- 5.
- 6.
- 7.
- 8.
- 9.
- 10.
- 11.
- 12.
- 13.
- 14.
- 15.

Develop three statements, one sentence each, indicating what schools might do, considering the trends and implications you've identified.

- 1.
- 2.
- 3.

(Source: Gary Marx, President, Center for Public Outreach, Vienna, Virginia, USA)

Notes
Sixteen Trends
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Considering implications of the trends, identify three things we should consider doing or emphasizing now.

Emphasis 1:

What will this emphasis mean for:

Teachers:

Administrators:

Support Staff:

Parents and Community:

Emphasis 2:

What will this emphasis mean for:

Teachers:

Administrators:

Support Staff:

Parents and Community:

Emphasis 3:

What will this emphasis mean for:

Teachers:

Administrators:

Support Staff:

Parents and Community:

**Sixteen Trends...
Their Profound Impact
on Our Future**

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Rising to New Heights

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**School Business Officials
Central to Educational Success**

- *Essential members of the leadership team who make better student achievement possible.*
- *Connections reaching from deep inside the system and into the broader community.*
- *Sources of knowledge, guidance, and leadership.*
- *Enablers who can guide the system in figuring out how to accomplish what needs to be done.*
- *Key communicators.*
- *A foundation for trust.*

Gary Marx, President, Center for Public Outreach

**Why should we care?
We're educators!**

- Are we of this world?
- Are we separate from it?
- Are we flexible enough to meet the needs of a fast-changing world?

Our challenge today is to get re-connected with forces impacting the world...including our own community.

**Education at all levels is, or
should be, connected to the
advancement of civil society,
the economy, and our quality
of life.**

Isolation is not an option.

Consider the political, economic, social, technological, environmental, and demographic context in which we function.

Gary Marx, President, Center for Public Outreach

Think about...

The Implications of These Trends for...

- For pursuing how we run our schools and school system and for school business officials.
- What students need to know and be able to do...their academic knowledge, skills, attitudes, and behaviors.
- Economic growth and development and quality of life in our communities.

*Not necessary to have notes on or to remember everything we talk about.
Serving not as a prophet but as an observer, as a witness.
This is not a prescription for curriculum. It is the context in which we function.*

Trend

**For the first time in history, the
old will outnumber the young.**

Younger → Older

Worldwide: In developed nations, the old will substantially outnumber the young. In underdeveloped nations, the young will substantially outnumber the old.
Older → Younger, Younger → Older

Facts

Life Expectancy↑

- In 1789, the average *life expectancy* in the U.S. was 35. In 2005, it was 77.8, and is expected to reach 80.5 by 2025. (Obesity and related health problems could intervene.)

Average Age↑

- In 1800, the *average age* in the U.S. was 16 years. In 2000, it reached 35.7 years and is expected to reach 38 years in 2050.

U.S. Census Bureau, Nat'l. Center for Health Statistics, AARP, Agequake

21st Century Implications Aging

- Attracting and keeping new generations of people to work in the system. Getting them ready to serve in a fast-changing world.
- Recruiting and retaining older citizens as educators and as other workers.
- Expanding adult education courses and other opportunities for lifelong learning. Keeping school facilities open even longer.
- Dealing with continuing transportation, access, and safety issues for older citizens.
- Getting experienced people to build a connection between what's taught and how it can be applied.
- Balancing political demands of young and old. Convincing older citizens that resources are needed.

Trend

Majorities will become minorities, creating ongoing challenges for social cohesion.

Majority/Minority → Minority/Minority

Worldwide: Growing numbers of people and nations will discover that if we manage our diversity well, it will enrich us. If we don't manage it well, it will divide us.

Diversity = Division ↔ Diversity = Enrichment

Facts

Majority to Minority

Total U.S. Population

2000--281.4 million, 71 percent white
2050--420.08 million, 53 percent white
2100--570.9 million, 40 percent white

U.S. Youth, Age Birth to 19

2000--78.4 million, 64 percent white
2050--100.98 million, 46 percent white
2100--144.6 million, 34 percent white

U.S. Census Bureau

Demographics and High School Graduations

- Between 2004-05 and 2014-15 in the U.S., the number of Hispanic public high school graduates is expected to rise 54 percent, Asian 32 percent, Native American 7 percent, Black 3 percent. The number of Non-Hispanic White graduates will decline approximately 11 percent.
- In the U.S., public high school graduations will peak during 2007-08 at just over 3 million. Then, graduations will decline about .7 percent until 2013-14, when they will start to rise again.
- The Northwest and Midwest could have substantial declines of about 1 percent a year through 2021-22.
- The South, Southwest, and West could see significant growth in the number of graduates, from 30 to 40 percent in Florida, Georgia, North Carolina, Texas, Arizona, Nevada, Colorado, Idaho, and Utah.
- The West will have its first "minority-minority" graduating class as a whole by 2010 and the South by 2017.

"Demographic Boom or Bust," Inside Higher Education, March 20, 2008

21st Century Implications Diversity

- Ensuring equal opportunity and achievement for **ALL** students. Raising all boats.
- Seeking **common denominators and consensus**. Constantly **reframing** our identity, curriculum, and teaching to be inclusive.
- Preparing students for life in a diverse world.
- Hearing divergent ideas and voices.
- Attracting excellent teachers as role models.
- Offering professional development that supports inclusion and cultural understanding.
- Assigning excellent teachers to **all** schools.
- Developing an international focus.

Trend
Social and Intellectual Capital will become economic drivers... intensifying competition for well educated people.

Industrial Age →
Global Knowledge/Information Age

Intellectual Capital

“is the intellectual material— knowledge, information, intellectual property, experience— that can be put to use to create wealth. It is collective brainpower.”

Thomas Stewart
Intellectual Capital...The New Wealth of Nations

Education and Income Average Earnings, Adults 18 and Older

- Master's, Professional, Doctorate, \$79,946.
- Bachelor's, \$54,689.
- High School Diploma Only, \$29,448
- Less Than High School Diploma, \$19,915.
- In 2006, 86 percent of all adults 25 or older said they had completed high school. High school graduation rates: women 86 percent, men 85 percent. Bachelor's Degree, men 29 percent, women 27 percent.
- High School Diploma (adults): 91 percent of non-Hispanic whites, 87 percent of Asians, 81 percent blacks, 59 percent Hispanics.
- Minnesota and Alaska, 93 percent of adults 25 or older with high school diploma or higher. District of Columbia, 49 percent with a Bachelor's Degree or higher.

U.S. Census Bureau, Current Population Survey, 2006 Annual Social and Economic (ASEC) Supplement, March 19, 2008, www.census.gov/epst/techdoc/cps/cpsmar06.pdf

21st Century Implications Economics

- Capitalizing on our own intellectual/social capital.
- Developing student and staff teamwork, management, and entrepreneurial skills.
- Preparing people for a new economy, for existing and emerging careers in for-profit and nonprofit sectors.
- Understanding that if we don't provide opportunities in our communities, people will find them elsewhere.
- Building economic literacy, including personal finance. Understanding needs vs. wants, income vs. expenditures, risk, and return on investment.
- Building in flexibility and innovation.
- Staying in touch with forces that shape the economy and civil society.
- Getting beyond the factory model.

Trend
Pressure will grow for society to prepare people for jobs and careers that may not currently exist.

Career Preparation ↔ Career Adaptability

Unemployment rate U.S., 5.1 percent in March 2008; New Hampshire, 4.8 percent, Maine, 4.8 percent, and Vermont, 4.3 percent, in February 2008.

Related Trend
Competition for Qualified Educators will Increase Dramatically

High Demand → Even Higher Demand

Between 2 and 2-1/2 million new teachers will be needed by 2012-2014.

Preparing Students for Jobs That Don't Exist....YET!

By the year 2015, more than half, and some even say 80 percent of us will be working at jobs that don't exist yet.

Faith Popcorn, Dictionary of the Future

Emerging Careers

- Artificial Intelligence Technician
- Automotive Fuel Cell Battery Technician
- Computational Linguist
- Information Broker
- Cybrarian (organizing a library growing at more than a million pages a day)
- Leisure Consultant
- Cryonics Technician
- Virtual Set Designer
- Ring Tone Composer
- Green Collar Jobs (renewables, energy efficiency, etc.)
- Tissue Engineer
- Smart-Home Technician
- Medical Diagnostic Imaging Technician

Gary Marx, President, Center for Public Outreach

21st Century Implications Careers

- Creating and filling new positions in building, instructional, and administrative technologies, IEQ, transportation, etc.
- Becoming competitive for talent/resources.
- Helping with career planning.
- Scanning the environment...anticipating development of new careers. Engaging in job creation.
- Shaping education and training programs.
- Becoming a key part of the civil and economic infrastructure.
- Helping the community invent and capitalize on emerging careers.
- Considering emerging fields: nanotech, biotech, development of energy sources.
- Seeing education as a career option.

Trend

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

Quick Fixes/Status Quo →
Continuous Improvement

No matter how good we are today...we need to become even better tomorrow!

21st Century Implications Continuous Improvement

- Giving the status quo a rest.
- Shaping the economy, workforce, education system, and civil society for the future.
- Building understanding of the principles of continuous improvement.
- Aligning the system with student, community, civil society, workforce, and other needs.
- Staying flexible to deal with opportunities.
- Responding to individual needs, interests, talents, and abilities.
- Collaborating/partnering to get the job done.

Country Song Title..."They're only puttin' in a nickel but they want a dollar song."

TREND

**The Millennial Generation will insist on solutions to accumulated problems and injustices.
Generation E will call for equilibrium.**

GIs, Silents, Boomers, Xers → Millennials →
Generation E = Equilibrium

The Generations

- The "G.I. Generation. Born between 1901 and 1924. Generation of Heroes."
- Silent Generation. Born between 1925 and 1945. Smallest generation of the century.
- Baby Boomers. Born between 1946 and 1964. About to retire in massive numbers.
- Generation X. Born between 1965 and 1981. Growing concern about their future.
- Millennials. Born 1982 and 2003. New G.I. Generation.
- Generation E (Equilibrium). Born 2004-

*Every fourth generation tends to repeat itself.
Gary Marx, President, Center for Public Outreach, Vienna, Virginia*

21st Century Implications Generations

- Hiring, training, motivating, and keeping talented people from many generational backgrounds, dealing with their individual expectations, getting them to work together.
- Developing teamwork skills.
- Teaching conflict management skills and how to make change democratically.
- Focusing on employment and quality of life issues that might keep Millennials in our communities.
- Setting up opportunities for greater intergenerational communication.
- Building media literacy skills.
- Expect more quality-conscious students who will want their money's worth from education.
- Maintaining a "mission driven" system.

Trend

Technology will increase the speed of communication and the pace of advancement or decline.

Atoms → Bits

Macro → Micro → Nano →
Subatomic

Some kids have more technology in their bedrooms than we have in our classrooms.

It's not the technology...

...It's what it does to unleash the genius of our students and community and to increase the pace of change that will really make a difference.

Looming Question

Have we become cyborgs?

Gary Marx, President, Center for Public Outreach

21st Century Implications... Technology

- Staying up-to-speed with emerging building, transportation, environmental, instructional, administrative, and other technologies.
- Becoming facilitators/orchestrators of learning. Encouraging self-learning.
- Connecting teachers, students, and communities with each other and with the world through interactive technologies. Cyber-communities.
- Avoiding the temptation to do more quickly and efficiently those things that you probably shouldn't be doing anyway.
- Using new and emerging technologies, developing new generations of technologies—new sources of energy and propulsion.
- Closing the digital divide.

Trend

Education will shift from averages to individuals in an education system increasingly devoted to lifelong human development.

Standardization → Personalization

To every action, there is an equal and opposite reaction. Isaac Newton

21st Century Implications Standards/Personalization

- Personalizing/Tailoring education as a key to reaching and exceeding standards.
- Moving toward P-16 and Pre-Kindergarten through Life Education.
- Bringing out individual talents and abilities of students. Cultivating interests and Ingenuity.
- Preparing students for the future, not the past.
- Moving toward performance-based testing.
- Ensuring standards do not limit the curriculum.
- Quantifying the value of a comprehensive education vs. the cost of neglect.
- Seeing education as a prime national/community assets.

Trend

Release of human ingenuity will become a primary responsibility of education and society

Information Acquisition →

Knowledge Creation and Breakthrough Thinking

We will not be able to ride our way into the future. We will need to invent our way into the future. Gary Marx

Developing Enlightened Students... Capable of Creating a Future

- Helping students learn across disciplines.
- Applying what we've learned from cognitive research.
- Building on students' strengths...multiple intelligences, interests, abilities, talents.
- Teaching thinking and reasoning as basic skills.
- Making futures studies a part of education.
- Showing the connection between what we're teaching and its use in the outside world.

Gary Marx, President, Center for Public Outreach, Vienna, Virginia

Knowledge Creation/Breakthrough Thinking Our Challenge

- Create intellectual entrepreneurs... people who are curious and persistent.
- Cultivate ingenuity, imagination, creativity, and inventiveness.
- Move from fragments to relationships and the creation new knowledge, consideration of interdisciplinary industries/careers.
- Help trigger ideas.
- Move from static to dynamic.
- Know that disadvantage might heighten entrepreneurial skills.

Gary Marx, President, Center for Public Outreach, Vienna, Virginia

Trend

Scientific discoveries and societal realities will force widespread ethical choices

Pragmatic/Expedient → Ethical

21st Century Implications Ethics

- Modeling ethical leadership.
- Clarifying the school's role in teaching about ethics...precept and example.
- Expanding civic and character education.
- Including an ethics component in most courses.
- Making critical and creative thinking basic skills.
- Helping students, educators, and communities understand that ethical behavior is essential to legitimacy and survival.
- Making ethics part of reputation management.
- Developing empathy. Abandoning arrogance.

Trend
Common opportunities and threats will intensify a worldwide demand for planetary security.

Personal Security/Self Interest → Planetary Security
 Common Threats ↔ Common Opportunities

Common Opportunities
 For Planetary and Personal Security

- Developing new sources of energy/propulsion.
- Discovering treatments, cures, and prevention strategies for diseases.
- Developing technologies and treaties that will guarantee adequate fresh water.
- Preparing more people for careers in diplomacy.
- Engaging scientists in probing the depths of the atom and the outer reaches of the universe.
- Determining how to help, attract, and use the talents of expanding numbers of environmental refugees.
- Engaging economists in developing theories, policies, and strategies to fit emerging needs.
- Supporting even better education.

Gary Marx, Center for Public Outreach

21st Century Implications
 Planetary and Personal Security

- Balancing economic development and environmental sustainability.
- Considering "green" buildings and operations that are environmentally friendly or suffering public wrath.
- Considering the impact of globalization.
- Decarbonizing. Developing clean energy sources.
- Demanding corporate citizenship & social responsibility.
- Offering futures studies courses and units.
- Stimulating creativity.
- Building media literacy skills.
- Building a deeper understanding of basic human and planetary needs.
- Developing a philosophy of possibility.

Trend

Understanding will grow that sustained poverty is expensive, debilitating, and unsettling.

Sustained Poverty ↔
 Opportunity and Genuine Hope

Poverty makes us all poor.

Poverty and Education

- Achievement gaps: standardized test scores, student grades, dropout rates, college entrance and completion.
- Poor health care and nutrition.
- Fewer learning resources at home.
- Negative stereotyping.
- Placement in lower ability groups.
- Anti-school attitude or value system.
- Test bias.
- Lack of reinforcement/encouragement.

Gary Marx, President, Center for Public Outreach

21st Century Implications
Poverty

- Building an understanding of the history and consequences of sustained poverty.
- Getting past the isolation of those in poverty and those of wealth. Poverty is everyone's problem.
- Offering education and training programs, counsel, and other help to avoid or overcome poverty.
- Providing opportunities and moral support.

Trend

Polarization and narrowness will bend toward reasoned discussion, evidence, and consideration of varying points of view.

Narrowness ↔ Openmindedness

Those who insist on everything...may end up with nothing.

21st Century Implications

Polarization

- Preparing people to engage in reasoned discussion. Developing a "civic temperament" that encourages dialogue and deliberation.
- Considering not just "our strong feelings" or "personal interest" but also the common good.
- Teaching and using thinking, reasoning, and communication skills.
- As individuals, governments, and institutions, believing that polarization and narrowness can be overcome.
- Mastering the art of working within the marketplace of ideas and making change peacefully and democratically.

Trend

As nations vie for respect in an interdependent world, international learning, including diplomatic skills, will become basic.

Isolationist Independence ↔ Interdependence

Worldwide: To earn respect in an interdependent world, nations will be expected to demonstrate their reliability and tolerance.

International Education

A few basics...

- Diplomatic qualities, skills, and bodies of knowledge: open minds, natural curiosity, patience, courtesy/good manners, sense of tolerance, ability to put themselves in others' shoes.
- Understanding of: economics, history, law, political science, government, civic responsibility, human rights, social skills.

Why should we engage in international studies?
We need to demonstrate our own international competence, and we also need to be adept at electing or appointing those who represent us.
 Gary Marx, President, Center for Public Outreach

21st Century Implications

Interdependence

- International, civic, law-related, and character education, including diplomatic skills, are basic.
- Cosmopolitan, connected, world-wise educators, students, and communities need a grounding in world languages/cultures.
- Society should be prepared to communicate and do business across international boundaries.
- Students should discuss criteria for evaluating members of "a family of nations."
- Professional development and continuing education programs will include a focus on international issues and opportunities.

Top eight nations in responsible competitiveness: Denmark, Finland, Iceland, the U.K., Norway, New Zealand, Australia, and Canada, 2007 (Development with least damage to people and planet. Worldwatch)

Trend

Greater numbers of people will seek personal meaning in their lives in response to an intense, high tech, always on, fast-moving society.

Personal Accomplishment ↔ Personal Meaning

Meaning is much more difficult to acquire than material possessions. Gregg Easterbrook, Progress Paradox

Source: Gary Marx, President, Center for Public Outreach, Vienna, Virginia

21st Century Implications Personal Meaning

- Growing demand for greater work-life balance.
- Attracting more young people and seasoned workers into public service careers.
- Paying more attention to emotional health, emotional intelligence, affective reasoning.
- Building literacy in personal finance and economics.
- Developing more fatigue-related dilemmas.
- Pursuing eco-tourism, cross-generational tourism.
- Growing demand for personal trainers, psychologists, physical therapists, counselors.

"Happiness is when what you think, what you say,
and what you do are in harmony."

Mahatma Gandhi

Challenges for Future-Focused Leaders

- Taking on the strategic futurist role. To be educators, we must also be scholars.
- Playing an entrepreneurial, intellectual leadership role.
- Making futures studies a key part of education.
- Engaging in Parallel Planning.
- Appointing Futures Councils to engage in generative thinking.

Planning for the near-term while, in parallel, generating discussion about trends and the longer-term future.

*In a world of accelerating change, are we
capable of...*

Audacious Goals

- Shaping a 21st century education system capable of preparing students for life in a global knowledge/information age.
- Shaping a 21st century community capable of thriving in a global knowledge/information age.

We know what we are today, but do we know what we want to become?

Source: Gary Marx, President, Center for Public Outreach, Vienna, VA, USA

Our Choice

**We have a choice.
We can simply defend what
we have or create what we
need.**

Gary Marx, President, Center for Public Outreach