The whole difference between construction and creation is exactly this: that a thing constructed can only be loved after it is constructed; but a thing created is loved before it exists.

Charles Dickens
A creative person sees the invisible, believes the incredible, and receives the impossible.
Texas A&M University was founded in 1876 as the Land Grant College for the State of Texas to provide leadership and expertise in the transition from the Agrarian Age to the emerging Industrial Age.
Texas A&M has succeeded in this mission beyond anyone’s imagination. Now A&M must provide new expertise and leadership to involve the entire university in guiding the “State of Texas’ transition into the Knowledge Age and beyond.
“There is no use trying,” said Alice. One can’t believe impossible things.” “I daresay you haven’t had much practice,” said the Queen. “When I was your age, I always did it for half an hour a day. Why, sometimes I’ve believed as many as six impossible things before breakfast.”-Lewis Carroll
Seventeenth century educational reformer John Amos Comenius described schools as “the slaughterhouses of the mind.”
Charles Dickens referred to school methodologies as “childhood with its beauty gone, and only its helplessness remaining.”
Many highly successful persons were behavioral problems in school!
If you were bouncing off the walls and colored outside the lines in school, you probably were drugged!
The University remains a Medevil Institution!
“Schools waste 2/3’s of the talent in society! Universities sterilize the other 1/3!”

Edward DeBono
“I am alarmed at the tendency of higher educational institutions to credential rather than educate!”

Jane Jacobs
“Education is all about rationing prestige in most universities. It has nothing to do with seeking knowledge.”

McKenzie Wark
The University will be the least prepared to prepare you for a world of change!
If universities aren’t responding to future needs, are they prepared to go out of business?
Teachers complaints about students and advancing technology!

John L. Morrison
1703 Complaints

Students can no longer prepare bark to calculate problems. They rely instead on expensive slate. What will they do when the slate breaks.

John L. Morrison
1815 Complaints

Students depend too much on paper instead of slate. What will they do when we run out of paper.

John L. Morrison
1917 Complaints

Students depend too much on ink. They can’t sharpen a pencil with a knife anymore.

National Association of Teachers
John L. Morrison
1928 Complaints

Students depend too much on store bought ink. They don’t know how to make their own. What happens when they run out?

Rural American Teachers Association
John L. Morrison
1955 Complaints

Teachers refuse to accept papers written with ballpoint pens. A fountain pen is the only acceptable instrument!
1960 Complaints

Take away students’ slide rules and they no longer have the skills to solve a problem!
1980 Complaints

Can students even function today without a calculator?
2000 Complaints
Students are totally dependent on their computers. What will they do when there is a blackout?
2004

Big Brother on Board

School buses are installing biometric scans. Fingerprints are required to enter the bus and it indicates to the driver the student’s identity and stop.
Surveillance cams are being installed inside and outside the buses. The cams give school officials information on misbehavior and drivers who whiz by when the bus is stopped.
Buses are being equipped with a GPS Tracker to monitor buses and an emergency button to indicate terrorists and notifies police of the exact location of the bus.
2004 Complaints

Cellphones and palm devices must be banned from quizzes. Students are cheating through instant messaging and photographing tests with their cellphones to send to friends.
2020 Complaints

How can I tell which students are intelligent and which ones have been implanted with chips? Will they be able to function when the chips go bad?
2020

Textbooks are automatically updated daily in their electronic books and information that students must unlearn has been underscored. Assignments may change daily as new information makes old assignments obsolete!
A $400 iPod today has 40 gigabytes of memory. Moore’s Law says that by 2024, it will have 20 petabytes of storage. (20 million gigabytes)
Today’s iPod can store 20,000 books. In ten years your iPod might be able to hold 20 million books which will be more than are in Harvard University’s collection.
If you want the pictures and diagrams in those books you will have to wait an additional 3 years. By then you will be able to carry around the complete text for all the volumes in the Library of Congress.

Rodney Brooks, director of MIT’s Computer science and AI Lab
2023 Complaints

They have implanted the Library of Congress in their heads. What are we supposed to teach them now?
2025 Complaints

MIT has refined an internet implant in the brain. How will that effect ACT and GRE scores?
2030 Complaints
How can you tell which students are natural humans and which are enhanced genetically and/or through A.I.?
Bill Gates' brother-in-law just funded an institute dedicated to mapping the mind.

www.brainatlas.org
The government has proposed to fund mind mapping to control memory and eliminate criminal intent.
The mind mapping scientists want to monitor and understand brain functions. They want the ability to alter the brain to change the nature of the individual.
2030 Complaints of Students
Teachers can read my mind now! They even know what I think about them! I have to hide the latest knowledge uploaded in my brain!
Brain technology is, before genetics, going to tell us things about people that they really consider to be private.

Paul Root Wolpe, Chief of Bioethics, NASA
When will you need a firewall for your brain?
Man’s mind, once stretched by a new idea, never regains its original dimensions.

Oliver Wendell Holmes, Jr.
“Most people believe that there is something intangible or spiritual about the way that minds work that can never be captured in silicon circuitry…The mere mention of machines that are conscious, have feelings, or could have rights usually generates such heat and emotion as to preclude rational debate.”

Thomas Georges
Enhancing neuronal function with microdevices could allow us to explore undiscovered realms of consciousness and perception, including new colors, new emotions and enhanced senses.

William Holmes
Scientists are working on sensors that will enhance each of the five senses. Do you want night vision?
The US Food and Drug Administration approved a brain implant designed to allow paralyzed patients to interact with a PC.

Erika Jonietz, Technology Review, Nov. 2004
Emerging biotechnologies will be incorporated into our bodies much as pharmaceuticals are within ten years.
With bioinstrumentation, I can sit at my computer, answer the phone, type on my computer and be connected to my colleague in the office next door through brain impulses alone.

Paul Root Wolpe, Chief of Bioethics, NASA
A permanently-on communications “cloud” would be a vast network connecting millions of different computing devices from mainframes to tiny sensors that will permit us to speak to, share information with or send messages to, anyone around the world without having to log in or out.

London Financial Times, September 27, 2004
How will the communications “cloud” enhance interspecies communications? In the home, city, country or world?
If mind enhancing chips become available, the rich could afford them and possibly widen the gap between natural intelligence and super intelligence!
Scientific Imperative-
If it can be done, it will be done!
Science today moves faster than our moral understanding.
2030 Complaints

How can we base our admissions on standardized tests when the majority of the applicants have implants?
As we continue to experiment with implants in the human and mix animate and inanimate, what is the proportional mix that will give a robot personhood/citizenship?
Birds do it, bees do it, but could machines do it? New computer simulations suggest that the answer is yes.
2040 Complaints

They have given me a mixed class of humans, hybrids and transhumanists. How do I deal with the various learning styles?
2040 Complaints

University administration has ruled against discrimination of transhumanists and any beings with AI implants.
If you want to make enemies, try to change something.

Woodrow Wilson
The Supreme Court has ruled we must recognize marriage between robots and humans if the robots have 51% human components.
2040 Complaints
I’m now a knowledge facilitator, information technologist and creativity psychologist. There are no longer jobs defined as “classical teachers”! The Smithsonian has a building dedicated to the history of teaching.
The university of tomorrow will not resemble the university of today.
There are two ways to live your life. One is as though nothing is a miracle. The other is as though everything is a miracle.

Albert Einstein
“The fixed person for the fixed duties, who in older societies was such a Godsend, in the future will be a public danger.”

Alfred North Whitehead
How many of our university curriculums (or professors) focus on an idealized past... that may be eroding in the present as we speak... and may not even exist in the near future...?
Can society afford for the core curriculum at most universities to change as little in the next 30 years as it has in the last 30 years?
Will any curriculums in any university in the top ten in the US in 2020 even resemble the curriculums of today’s top ten universities?
Will any top ten university in the US today still be in the top ten by 2020?
The leading universities of the world in 2020 may be global consortiums that bear little resemblance to the universities of today.
Does the present education system retard the ability for students to create knowledge for the future?
“The quality of our thinking will determine the quality of our future.”
Edward DeBono
The top tier universities must emphasize future theory and planning as part of their core curriculum!
The future belongs to people who see possibilities before they become obvious.

Ted Levitt
My interest is in the future since I’m going to spend the rest of my life there.

Charles Kettering
2030

Top tier universities must emphasize critical thinking and creativity at the core of education!

Innovation is critical to survive the future!
You will see more new knowledge and inventions created in your lifetime than all the discoveries from the beginning of recorded history to the present.
“Curiosity about the future will lead to commitment and the sense of possibility will expand into the excitement of creation.”

Sumantro Ghoshal
Is the fundamental role of education to prepare the young for the future, or to connect them with the past?
Society must make hard choices about what children must know and what is merely useful or interesting to know. Youngsters who fail to acquire critical thinking skills needed to create knowledge risk becoming lifelong failures.
Innovation vs. education

We are taught how to handle problems and new phenomena with fixed mental attitudes based on what past thinkers thought, predetermining our response to problems or situations.

Michael Michalko
Innovation vs. Education

“We are taught what to think instead of how to think. Consequently, we tend to process information the same way over and over again instead of searching for alternatives.”

Michael Michalko
In 1913, Henry Ford developed the production line to maximize factory efficiency and schools eagerly adopted the model to train students who would someday work on those lines.

John Lundt
“The industrial age assembly-line model for education has shaped our schools more than we can imagine producing generations of ‘knowers’, not lifelong-learners, people beautifully prepared for a world that no longer exists.”

Peter Senge
Curriculum writers of the early 1900s referred to students as the raw material and educated adults as the final product.

John Lundt
Education Mantra

The students are empty vessels waiting to be filled with knowledge.
The mind is not a vessel to be filled but a fire to be kindled!

Plutarch
“Despite constantly accelerating social and technological change, the paradigm for education has remained essentially static.”

John Lundt
Age based educational programming will disappear once the factory model of education is abandoned. Students will progress at their own capabilities!
“We need to ensure that we have strong federal investment in the knowledge enablers of the future. The only way the U.S. can maintain its standard of living and quality of life, and then ultimately, our security, is through productivity growth—and that depends on innovation capacity.”

Deborah Wince-Smith Technology Review, April, 2004
“Learn to think anew in order to act anew.”
Abraham Lincoln
“Creativity is the defining feature of economic life. Our lives and society have begun to resonate with a creative ethos. An ethos is defined as the fundamental spirit or character of a culture.”

Richard Florida
“Creativity is the driving fundamental source of economic growth and is resulting in the rise of the new Creative Class.”

Richard Florida
“We now have an economy powered by human creativity. The winners in the long run are those who can create and keep creating.”

Richard Florida
“The Creative Class is dominant in terms of wealth and income, with its members earning nearly twice as much on average as members of the other two classes.”

Richard Florida
“The Information Age is about knowledge creation. It’s not about having the answers; it’s about being open enough with yourself to keep asking questions.”

R. Lengel- Executive MBA Program
“I can’t understand why people are frightened of new ideas. I’m frightened of the old ones.”

John Cage
Business of the Future is to PRODUCE KNOWLEDGE, NOT REPRODUCE KNOWLEDGE!!!
In the 21st Century, you will be competing with the world for any information that can be reproduced.
The person that cannot create and produce knowledge in the 21st Century will be destined to live with the equivalency of a 20th century minimum wage.

Bruce LaDuke
Creativity is the ability to imagine the world as it is not-to make conceptual leaps and refine the raw data of experience into abstract ideas, meaning, and insight.
The faster and more frequent innovation—the faster and more frequent Obsolescence.
With Accelerating Change, developing the creative potential in students will be a priority for them to survive the future!
The person that cannot understand and accept the possibility that their discipline or domain might come to a sudden end will not fare well in the 21st century.
“The man who is too set to change is dead already. The funeral is a mere detail.”

Henry Ford
Do not go where the path may lead, go instead where there is no path and leave a trail.

Ralph Waldo Emerson
Obsolescence forces people to be creative!
There’s nothing permanent except change!
The University is dedicated to memorized knowledge; not thinking skills!
“Knowledge is something that is true or false. Thinking skills can create knowledge.”

Paul Tinari
Faculty are professional knowers!
“Knowledge is the horsepower of a car. Creativity is the skill of driving the car.”

Paul Tinari
“The University is full of knowledgeable faculty with little driving skills!”

Paul Tinari
“What a professor knows is not as important as how they facilitate creative thinking and driving skills in their students.”

Paul Tinari
We are always taught the known. We are rarely taught about what’s not known or about the unknowable. (or how to produce knowledge)
What would happen if major corporations funded their own school system for employees’ children based on producing and advancing knowledge?
They could hire the best teachers, create an atmosphere of enthusiasm for generating knowledge and build a whole curriculum around knowledge creation!
Companies could be totally free of Federal and State Educational Bureaucracy!
Companies could recruit new employees with the promise that their children would receive a cutting edge education that would prepare them for a century of continuous learning & developing intellectual property.
What sustainable competitive advantage would this type of education system give the companies for retaining employees?
Who could this type of educational entrepreneurial system put out of business?
“The members of the Creative Class exhibit a strong preference for individuality and self-statement. They do not want to conform to organizational or institutional directives and resist traditional group-oriented norms.”

Richard Florida
US professionals must prove their worth by moving up the intellectual-property value ladder. Instead of just completing assignments that are handed to them, employees need to be more inventive and more original in their thinking—often by finding new problems to tackle in the first place.

Nathan Myhrvold, Technology Review, Oct. 2004
Creativity abounds on campuses. In most cases, creativity flourishes in spite of university policies.

Steven Tepper, Chronicle of Higher Education
Creative outbursts throughout history, like the renaissance in Florence, have clustered in those places where artistic, scientific, and technological advancements thrive side by side.

Dean Keith Simonton, author of Genius, Creativity and Leadership
Creativity

- Creative people feed off the energy of others; they excel when challenged and forced to confront and incorporate other perspectives and approaches.
- Creativity flourishes in diverse environments where there are adequate opportunities for cross-cultural exchange.
Creativity

• Creativity is stimulated by interdisciplinary exchange. Many of the most important scientific discoveries in the modern era happened at the borders between disciplines.
• Creativity requires an environment that tolerates and even encourages failure.
• Stephen Tepper, Chronicle of Higher Education
The University of Phoenix is taking charge of information that can be reproduced!

Who is taking charge of producing knowledge?
Mantra:

“Change or Die!”

John Sperling, founder of University of Phoenix
With the development of Phrasealator, students will be able to take distance education courses anywhere in the world with its instant translation.
“Learning should be taken out of the hands of antiquated school systems and put into the hands of learners.”

John Lundt
The illiterate of the future will not be the person who cannot read. It will be the person who does not know how to learn.

Alvin Toffler
The communications and instructional technologies necessary to make education an anytime anywhere activity rather than a place-bound schoolhouse event have been rapidly evolving for several years.

John Lundt
K-12 students can take courses online that may not be available in their school districts.

John Lundt
The emergence of the Internet and the development of distance-learning technology represent a new and effective means of replacing the antiquated school system with a highly efficient and effective means of educating people.

John Lundt
Only one education system in America qualifies for public support, and it is failing. If you choose to pay for education other than the public schools, you are still taxed to support the system you seek to avoid.
The present public education system is a monopoly.
A market driven world of educational opportunities will give learners an unlimited number of educational options that will spark competition and improve performance of learning providers.

John Lundt
Competitive learning enterprises will be forced to perform and be judged on the value of its product. The main benchmark will be the long-term success of the institution’s graduates and their ability to be knowledge creators.
Online learning is a 24/7 activity that can be conducted from any location with an Internet connection. Institutions will abandon the agrarian school calendar and serve the needs of their learners all year long.

John Lundt
Knowledge has been doubling every ten years since 1950. It is now moving into a mode of accelerating change.
“No Child Left Behind!”
What does that mean when we envision the Singularity?
Every Child Left Behind?
What could education do to prepare the youth for the Singularity?
What can you do to facilitate education for an accelerating future?
When I examine myself and my methods of thought, I come to the conclusion that the gift of fantasy has meant more to me than my talent for absorbing positive knowledge.

Albert Einstein
The institutions that do not nurture knowledge creators will become lower tier universities.
The institutions that do not empower their students to participate in creating the future will become lower tier universities.
Institutions that are fixated on rigid curriculums will become lower tier universities.
It is better to fail in originality than to succeed in imitation.

Herman Melville
Most education institutions don’t understand that two thirds of all the new jobs available in the world by 2020 have not been invented yet!
Technology is accelerating at an exponential rate and the nations without the creative mind capital to produce new knowledge will be left behind.
The number of a countries’ population engaged in knowledge creation will determine the future economic health of a country.
School systems will have to reverse the existing pedagogy of rote memory to questioning and discovering knowledge.
New curriculums must be developed to achieve optimum behavior in mind capital and knowledge creation.
If by 2020, two thirds of the jobs available in the world haven’t been invented yet, how will young learners cope with change? How will school systems justify their present pedagogy?
The “do nothing” university will not survive!
There is no doubt that creativity is the most important human resource of all. Without creativity, there would be no progress, and we would be forever repeating the same patterns.

Edward DeBono
What combination of degree plans will prepare a student to create the future of the built environment with on site nano-factories?
Educators are training students with past and present knowledge. Will our students be able to create the future?
While the majority of universities proudly reproduce knowledge workers, future progress in the world will depend on the knowledge creators.
The top tier universities today are ranked on how well they train knowledge workers.
“Wilson, what exactly is a ‘knowledge worker,’ and do we have any on staff?”
The rankings of universities or consortiums in the world by 2020 will be based on the numbers and quality of knowledge creators they graduate!
In the 21st Century, the **knowledge worker** is only one aspect of business and is not the most important. The role of **knowledge creator** has not yet been realized or mastered.

Bruce LaDuke
Knowledge workers will comprise the majority of US jobs. This may be compared to the assembly line workers of the Industrial Revolution.

Bruce LaDuke
NON SEQUITOR

By Wiley Miller

THE REAL BEGINNING OF BARRY'S EDUCATION...

WILL RECITE A KILLER DISSERTATION ON CHAUCER FOR A 6-Figure Salary AND A COMPANY CAR.
“While the knowledge worker works with existing knowledge, the knowledge creator works with knowledge that does not yet exist.”

Bruce LaDuke
The knowledge creator deals with the science of generating ideas!

Bruce LaDuke
Interdisciplinary knowledge creators can help to make this single structure seamless by answering questions common to one or more knowledge domains.

Bruce LaDuke
MITs Technology Review lists the movers and shakers under age 35 every year. A large percentage of them have dual degrees. Genetics and Computer Science, Engineering and biology, etc…
The merging of domains is creating the new domains, fields, hybrids and jobs!

Are our universities helping to cross pollinate and create the future?
Creativity involves the ability to synthesize. Einstein captured it nicely when he called his own work “combinatory play.”

Richard Florida
It is important to use your creative thinking skills to build upon the knowledge of others.
Top tier universities will be ranked on how well they facilitate combinatory play between domains!
The US has gone from farm to factory to knowledge work and now from knowledge work to knowledge creation!
“In times of drastic change, it is the learners who inherit the future. The learners usually find themselves equipped to live in a world that no longer exists.”

Eric Hoffer
Creativity is the Global Currency of the new millennium!
Intellectual Property is the Coin of the Realm of the Knowledge Age!
When do you think the first class action law suit against a school system might be launched for not preparing the student for the future?
It is estimated that *all* the knowledge that is known today will comprise only 1% of all the knowledge available by the year 2030!

Pearlman
“No Child Left Behind!”

What does that mean when we envision the present education system and the future?
When do you think the first class action suit will be filed against a school district, university or state for not providing an education that promotes life long skills for producing knowledge?
Will universities of the future have a built-in distance program that constantly updates their graduates for a lifetime of continuous learning?
A degree from a top tier university in the future will include free continuing education courses for a lifetime of knowledge creation.
“Sacred Cows make the best hamburgers!”

Abbie Hoffman
“It was not a 100 times I failed, but I learned a 100 ways something didn’t work.”

Thomas Jefferson
Check out
[www.kevinwarwick.org](http://www.kevinwarwick.org)
He is designing implants to move closer to the concept of Cyborgs!
Check out www.imminst.org
If you are interested in the subject of immortality and the future. Chat room available!
Extropy Institute sees enormous potential in advanced decision making and strategic thinking, coupled with emerging sciences and technologies, to quicken humanity’s resolution of these fundamental problems. We will gradually but firmly change the rules of the game called “being human.”
www.transhumanism.org
Wonder what the future holds for you? Check out this site.
Check out Carl Sagan’s Cosmic Calendar!

http://home.pacific.net.hk/~paulchui/cosmic.html