

Preparing Students for the Future
by Actually *Teaching* Them
about the Future



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Anticipation 2015
Trento IT
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Driving Questions

1. Why does strategic foresight appear at this time in history?
2. Why is it the preferred approach to the future today?
3. What is strategic foresight anyway?
4. What do educators say?
5. Are there ways of addressing their concerns?
6. *Discussion -- Questions, objections, suggestions*



We teach the future as we do the past.

The Invention of History

As We Know IT



Herodotus
The Histories
 450s – 420s B.C.

Thucydides
The History of the Peloponnesian War
 431 B.C.



We teach the future as we do the past.

But why now?

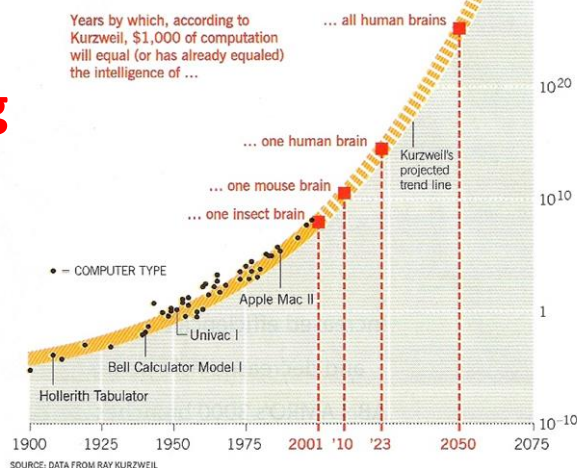
Accelerating
 change

THE KURZWEIL CURVE

Moore's Law is just the beginning: The power of technology will keep growing exponentially, says Kurzweil. By 2050, you'll be able to buy a device with the computational capacity of all mankind for the price of a nice refrigerator today.

Computer performance

Plotted by number of calculations per second per \$1,000

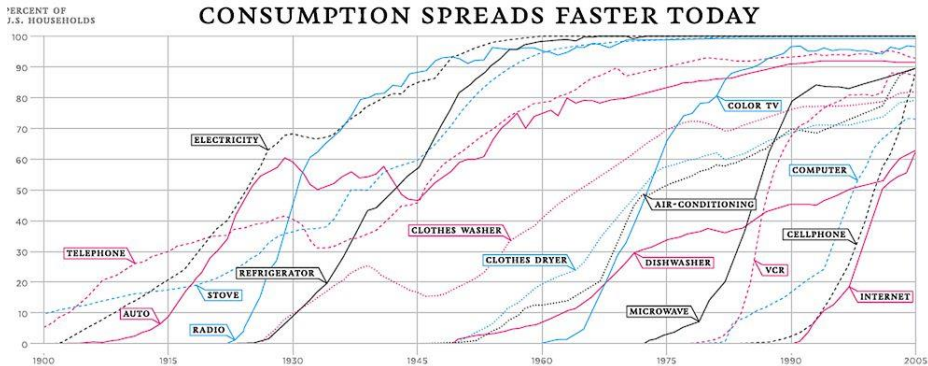


SOURCE: DATA FROM RAY KURZWEIL



We teach the future as we do the past.

Accelerating rate of change



Time to 50% adoption

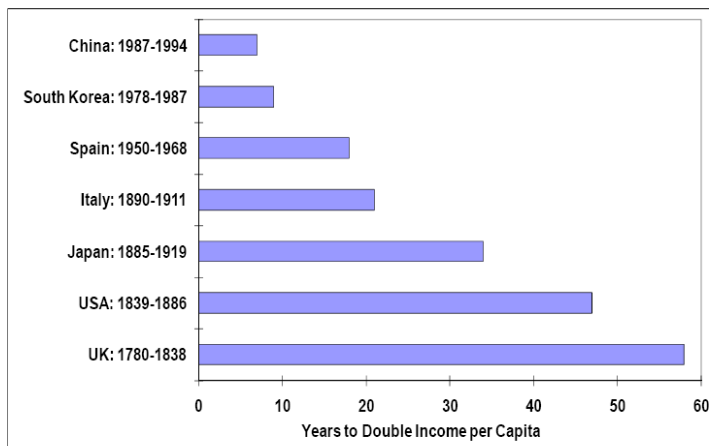
- Telephone = 45 yrs
- Internet = 10 yrs



We teach the future as we do the past.

Increasing Rate of Globalization

Development is faster and faster

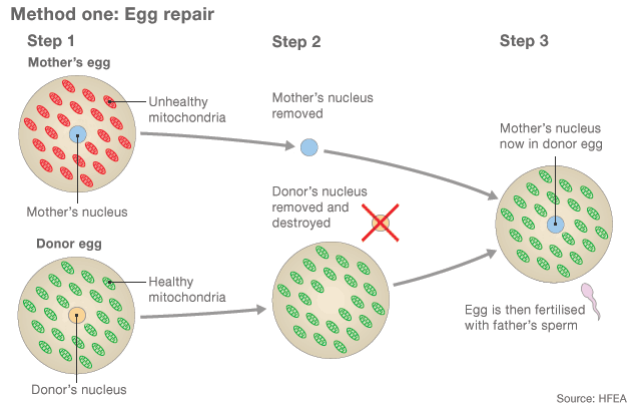


Jose Cordeiro, *Thinking about the Unthinkable*, Olomouc University, 2010

We teach the future as we do the past.

Big Decisions Ahead

Manipulating the germ line



We teach the future as we do the past.

From then...



William G. Bell, 1915
www.unionleader.com

...To now



If only we had eyes behind our head!
www.technologos.fr



We teach the future as we do the past.



www.transworldexpedition.com

When we drive in the fog,
do we look more closely or
turn away?



We teach the future as we do the past.

Three objections

1. We do not have time to teach the future because it is not required by any organization or curriculum standard, including AP and IB.
2. The future is unpredictable so we cannot we know, much less teach, something that has not happened yet.
3. We were not taught the future so we do not know how to teach it.



We teach the future as we do the past.

1. We do not have the time

The future does not take any more time than anything else!

- **History** – flow, change over time, time series, patterns, uncertainties, contingencies, alternative histories, historical images of the future, historical analogy
- **Literature**, language –future tense, subjunctive mood, science fiction, the three questions for fictional conditions and characters
- **Mathematics** – time series, extrapolation, probability, preference ranking, criteria weighting
- **Physical science** – time series, extrapolation, technological applications, social consequences, public issues
- **Social science** – social change, time series, cultural concepts of time, national and global awareness



We teach the future as we do the past.

2. The future is unpredictable

- | | |
|---------------|------------------------------------|
| ❑ Airlines | ❑ The energy crisis |
| ❑ Automobiles | ❑ The PC |
| ❑ Film | ❑ The collapse of the Soviet Union |
| ❑ Health care | ❑ The invasion of Kuwait |
| ❑ Military | ❑ The World Wide Web |
| ❑ Music | ❑ Y2K |
| ❑ Newspapers | ❑ The Tech Bubble |
| ❑ Publishing | ❑ 9-11 |
| ❑ Retail | ❑ The Financial Crisis |
| ❑ Telephones | |
| ❑ Television | |



We teach the future as we do the past.

Traditional Forecasting

Techniques

- Econometrics
- Commentators
Genius forecasters

Uncertainties

- Parametric uncertainty
- Alternatives, but still looking for the “right” answer

***What if there is no “answer”
or multiple answers?
Not one future,
but multiple futures?***



We teach the future as we do the past.

The Actual Future

When more than one future is plausible, which one is correct? But why not use all three?

– The Expected Future

- Where we are headed
- The future if everything continues as it has
- The result of conditions and trends (momentum)

– The Alternative Futures

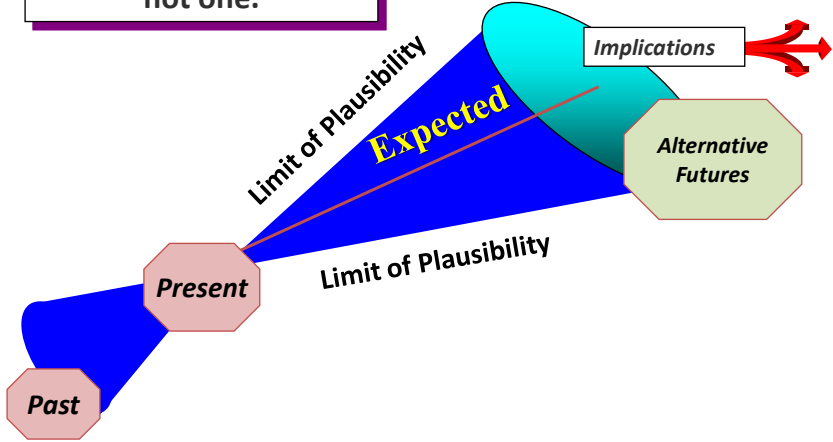
- What might happen instead
- The set of plausible futures if something less likely or unexpected happens
- The result of events and issues (contingencies)



We teach the future as we do the past.

The Cone of Plausibility

The Future is many, not one.



Sources of Change

Anticipate
Research

Influence
Strategy



...but within limits

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– The Alternative Futures

- What might happen instead
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– The Preferred Future(s)

- What we want to happen
- Either the expected or any of the alternative futures that is preferable

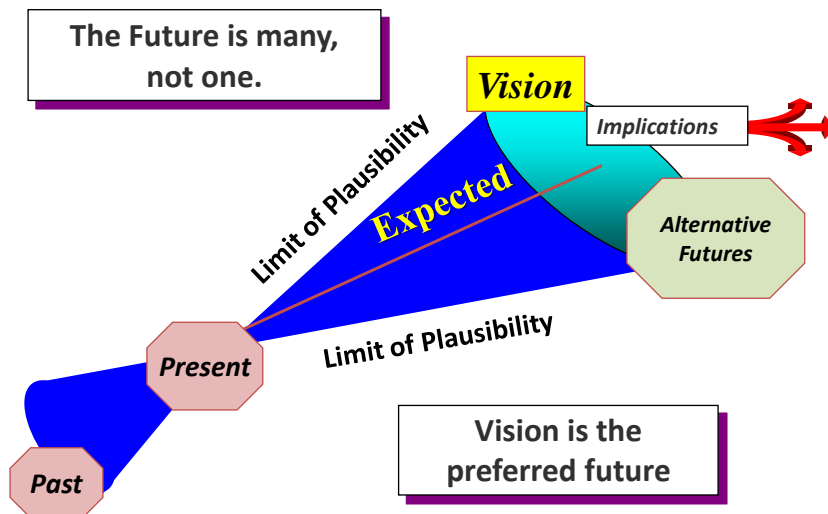


The result of our vision, goals, plans and actions (agency)

We teach the future as we do the past.



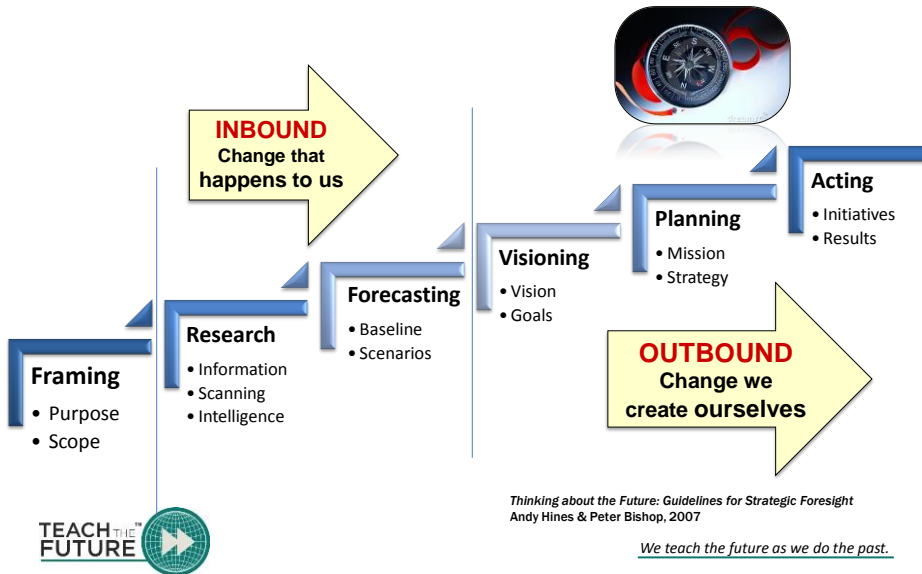
The Cone of Plausibility



Source: Charles Taylor, Army War College

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Foresight Techniques



Foresight in the Classroom

Simple questions

What is happening today? – **Present**

What happened to make it that way? – **Past**

What do you expect to happen? – **Expected** future

What might happen instead? – **Alternative** futures

What do you want to happen? – **Preferred** future(s)



We teach the future as we do the past.

The Language of Predictability

PLAUSIBILITY

Indicative

~~Will~~

~~Must~~

~~Should~~

Subjunctive

May

Might

Could



Present

Future

We teach the future as we do the past.

Outcomes – the bottom line

- **The expected future**
 - Causal reasoning
 - Mathematical extrapolation
 - Critical thinking, identifying assumptions
 - Implications analysis
 - Evaluation
- **The alternative futures**
 - Challenging assumptions
 - Creativity, imagination
 - Causal reasoning from different premises
 - Estimation of plausibility
 - Implication analysis, evaluation
- **The preferred future**
 - Values clarification
 - Preference ranking, criteria weighting
 - Communication, persuasion
 - Planning, organizing



We teach the future as we do the past.

3. We do not know how

- *Teaching about the Future*, Bishop & Hines
- *Anticipate the School You Want*, Shostak
- World Futures Society -- *The Futurist*, Annual Conference
- World Futures Studies Federation – Pedagogical Resources
- *Global Foresight Books, Shaping Tomorrow*
- Organizations -- Future Problem Solving, Global Issues Network, Future Friendly Schools, Facing the Future, Foresight Education, Big History Project's Futures Module
- In-service, professional development



We teach the future as we do the past.

What we have done already

- **Teacher in-services** for school districts in Houston and for American schools around the world
- **Certificate courses** for professionals in Houston and Brussels each year, some of whom are teachers.
- **Articles** about teaching the future.
- ***Teaching about the Future*** that describes the curriculum at the University of Houston.
- A **high school course** last semester on the Future of Houston.
- A non-profit **corporation** and a successful crowd **funding** campaign.
- The development of draft **curriculum materials**.



We teach the future as we do the past.



Your Turn

- Will the futures field support this movement?
- In any case, what should we do next?

www.TeachTheFuture.org

We teach the future as we do the past.

For Additional Information

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