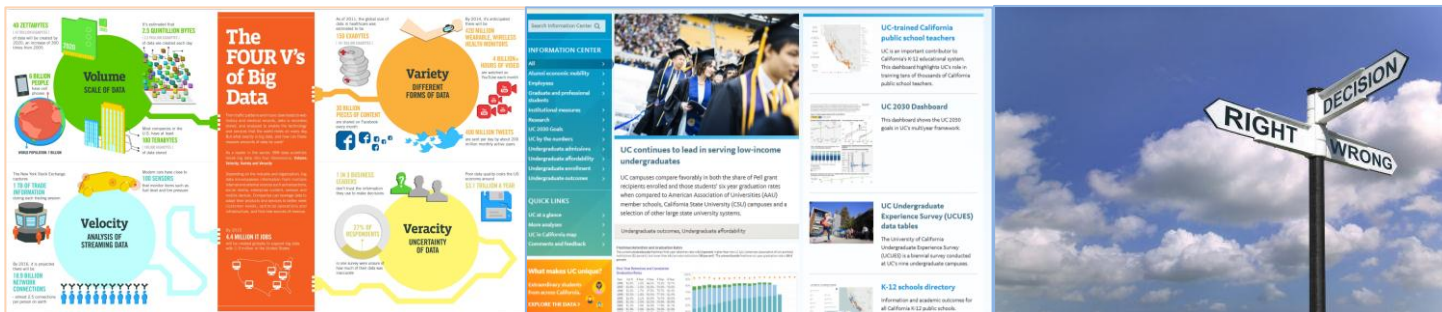# From Data to Action:
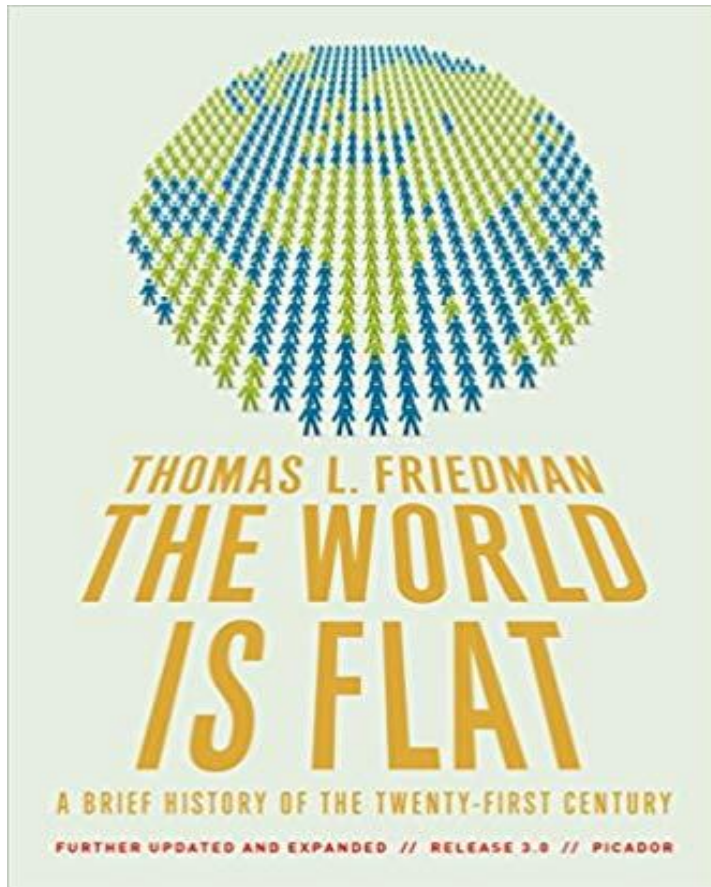## IR's Role in Transformational Change in Higher Education

Chang, Tongshan
Institutional Research & Academic Planning
The University of California Office of the President

Taiwan • September 26, 2019

Key topics……

1. Transformational change—what is it?

2. Challenges facing higher education—why do we need transformational change?

3. Institutional research—how does it support transformational change?

Everything is changing; the world is even flat.

"Friedman is right that there have been dramatic changes in the global economy, in the global landscape; in some directions, the world is much flatter than it has ever been, with those in various parts of the world being more connected than they have ever been, but the world is not flat ... Not only is the world not flat: in many ways, it has been getting less flat."

--Nobel Prize-winning economist Joseph Stiglitz

Change management vs. transformational change

1. *Developmental change: improve what we are currently doing,* e.g., changing admissions policy, increasing enrollment, motivating student participation, improving faculty diversity, etc.

2. *Transitional change: replace "what is" with something new, e.g.,* restructuring administrative units, merging programs, creating new programs, developing new service initiatives and activities.

3. *Transformational change*: need to do everything together on a portfolio of initiatives which are interdependent or intersecting, e.g., how changing admissions policy would affect enrollment, student engagement, faculty diversity, restructuring of administrative units, program merge, new service initiatives, etc.

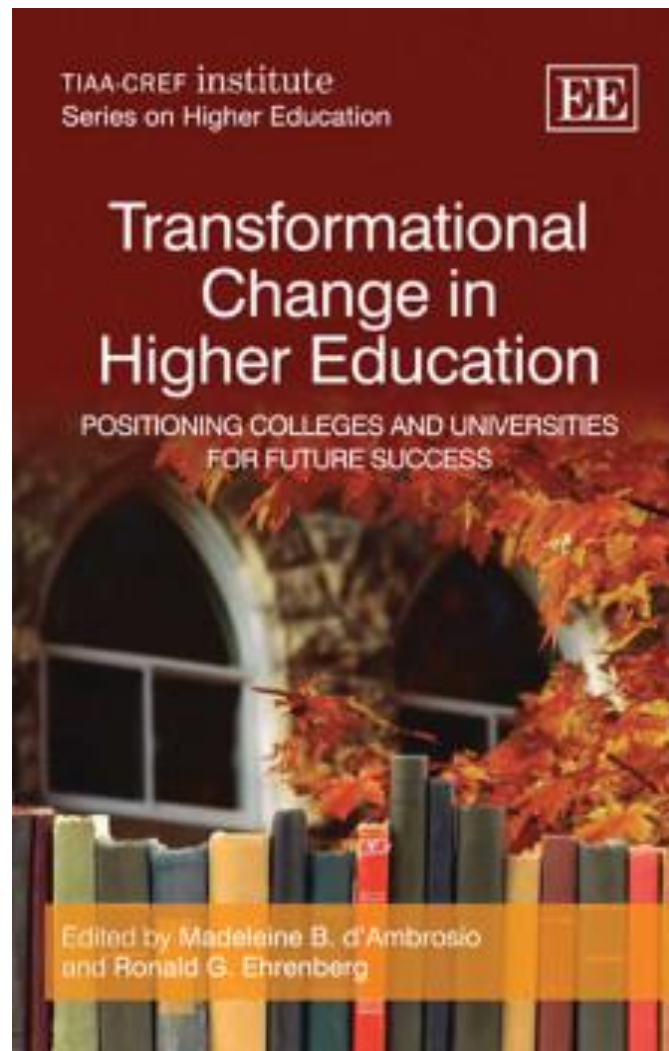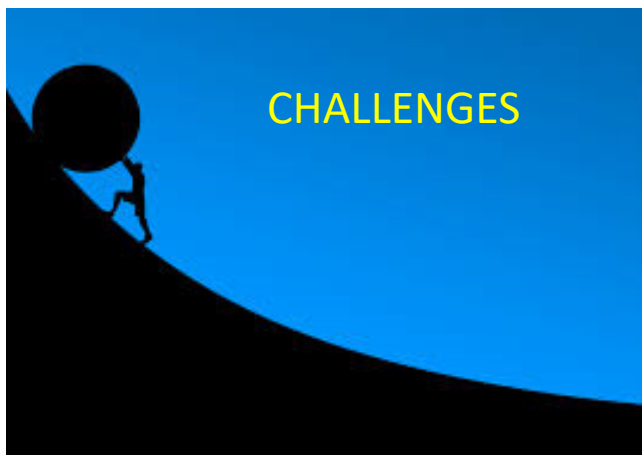# Transformation: approach, philosophy, methodology

-- By Robert Gass

1. *Be holistic: deriving its power by attending equally to heart & minds*
2. *Involve breakthroughs: in paradigms, beliefs, and behavior*
3. *Be about "Being the Change"*: a strong focus on what's happening right now, and must "be the change" right now by initiating an inclusive process of change
4. *Emphasize the positive*: grounded in the power of a positive vision and focusing on what we want to create
5. *Balance control with letting go*: less an attempt to dominate life, and much more a dance of dynamic interaction with life around us
6. *Rely on collaboration*: a high level of commitment and skill in collaboration because of its systemic and interdisciplinary nature
7. *Happen at all levels*: work with individuals, organizations, coalitions, networks, social change movements, and society

Why do we need transformational change?

"For 300-plus years, we evaluated the quality by the square footage of the library or what exclusivity it has. The quality of the consumer experience has not been part of the equation."

Carol D'Amico, Executive VP of National Engagement and Philanthropy, USA Funds

CHALLENGES

TIAA-CREF institute
Series on Higher Education

EE

Transformational Change in Higher Education

POSITIONING COLLEGES AND UNIVERSITIES FOR FUTURE SUCCESS

Edited by Madeleine B. d'Ambrosio and Ronald G. Ehrenberg

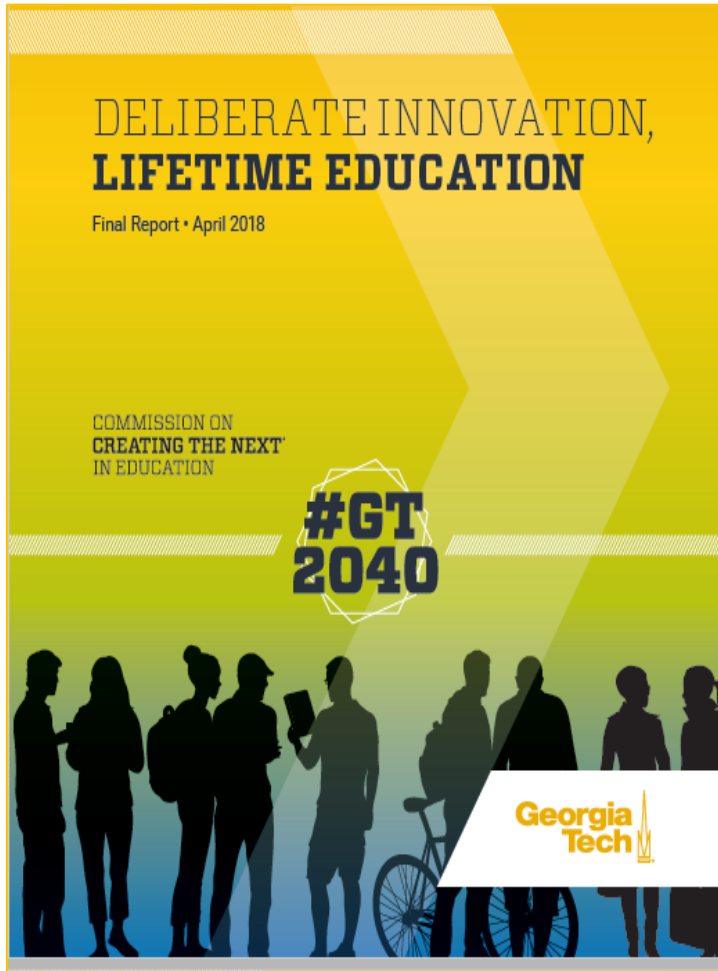# Challenges facing higher education (a shortened list)

1. *Access:* providing universal post secondary access to all students

2. *Financial constraints*: a major concern to administrators of higher education in the United States and many other countries

3. *Costs and affordability:* increased shifting of costs to students, and the growth in merit-based aid, not in need-based aid

4. *Diversity:* diversity of students, faculty, administration and staff in higher education is far behind that of the population in terms of race/ethnicity, gender, geographic location, socioeconomic status, etc.

5. *Greater expectations from students and employers*: students and employers expect skills for life and work much beyond knowledge students learn from a cluster of courses, or a major.

6. *Liberal education:* losing the sight of the traditional mission educating effective citizens and preparing students for life

7. *Accountability:* educating students well and offering higher "value-added" opportunities, increasing the value of degree

What should higher education do to address these challenges?

- Innovation
- Creativity
- Modification
- Ideas
- Strategies
- Development
- Improvement
- Rebuilding
- Evolution
- Refinement
- Renewal
- Advancement
- Transformation

Deliberate innovation, lifetime education at Georgia Tech

#GT2040

The #GT2040 project was launched with an interactive exhibit entitled "Creating Georgia Tech which invited faculty, staff, students, parents, alumni, and others to imagine themselves on the first day of class in the year 2040 and answer the questions:

Who are you?
Where are you?
What are you doing?

Hundreds of participants shared their ideas, left photographs, uploaded videos, and participated in online polls.
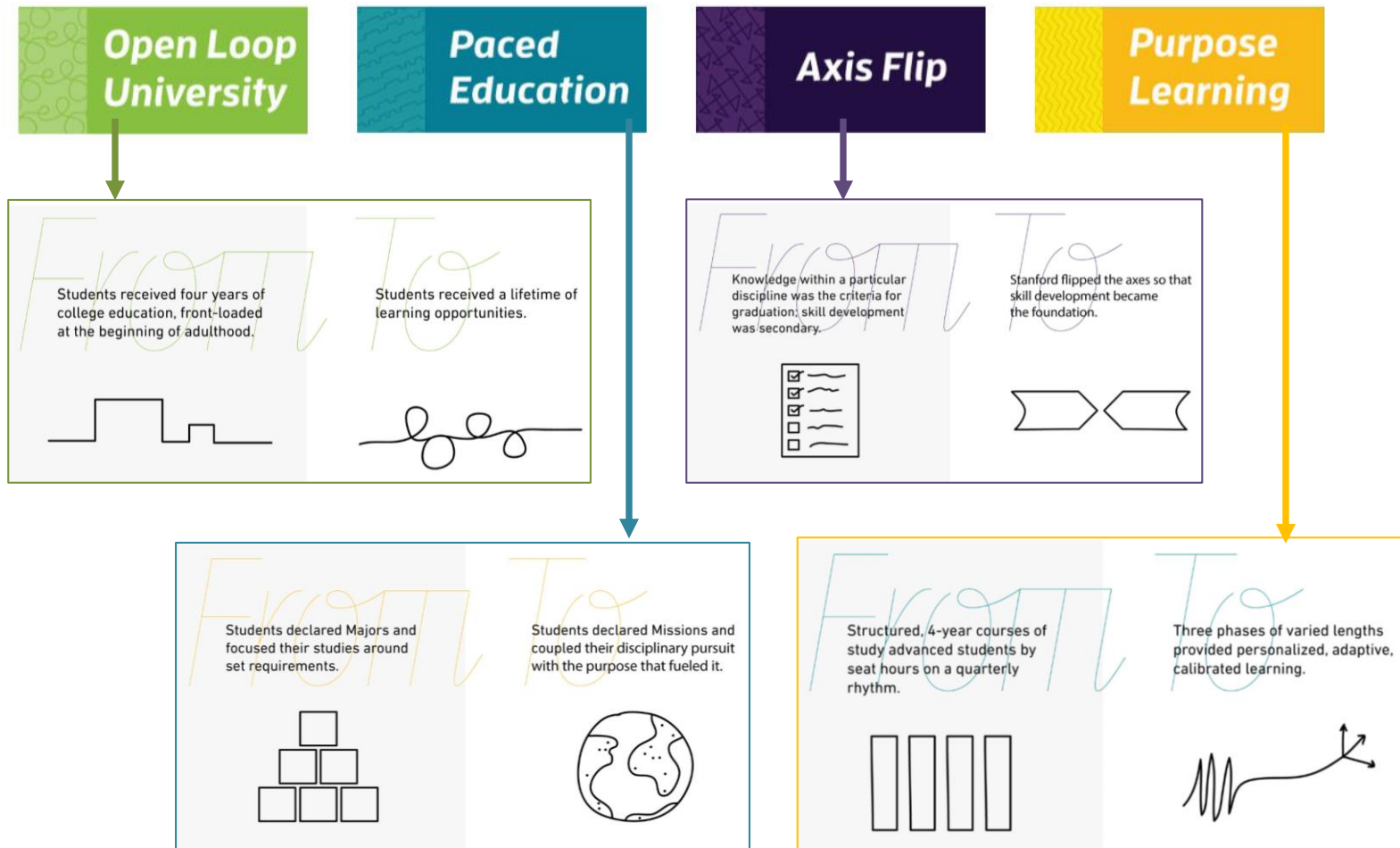
The #GT2040 project told us today's students expect that Georgia Tech will become more diverse, more tied to the urban landscape of Atlanta, and more imaginative in the use of technology used or learning. Participants did not expect to be tied to classrooms, and

Responses indicate that Georgia Tech will become more diverse, more imaginative in the use of technology, and learning is not tied to classrooms, traditional majors, but studying the challenges facing the world.

Design a future—Stanford's 2025 project

An exploration of undergraduate experiences in the future

Open Loop University

Students received four years of college education, front-loaded at the beginning of adulthood.

Students received a lifetime of learning opportunities.

Paced Education

Students declared Majors and focused their studies around set requirements.

Students declared Missions and coupled their disciplinary pursuit with the purpose that fueled it.

Axis Flip

Knowledge within a particular discipline was the criteria for graduation; skill development was secondary.

Stanford flipped the axes so that skill development became the foundation.

Purpose Learning

Structured, 4-year courses of study advanced students by seat hours on a quarterly rhythm.

Three phases of varied lengths provided personalized, adaptive, calibrated learning.

Berkeley offers doctoral students the opportunity to create an interdisciplinary major of their own design

What can we learn from successful transformational change?

Top five greatest factors in success of IBM's transformational change

Assigning the right employees to implement the project

88%

The need to appropriate adequate resources from the start

85%

Gathering data for metrics during the process

82%

Accurate timely feedback from employees executing the program

80%

Forming the right executive team to oversee the project

78%

From data to action (wisdom): a perspective of the role of institutional research

*If you know yourself and the enemy,
you will win battles all the time.*

---- The Art of War

Build an integrated data system

Data Integration is the combination of technical and business processes used to combine **data** from disparate sources into meaningful and valuable information
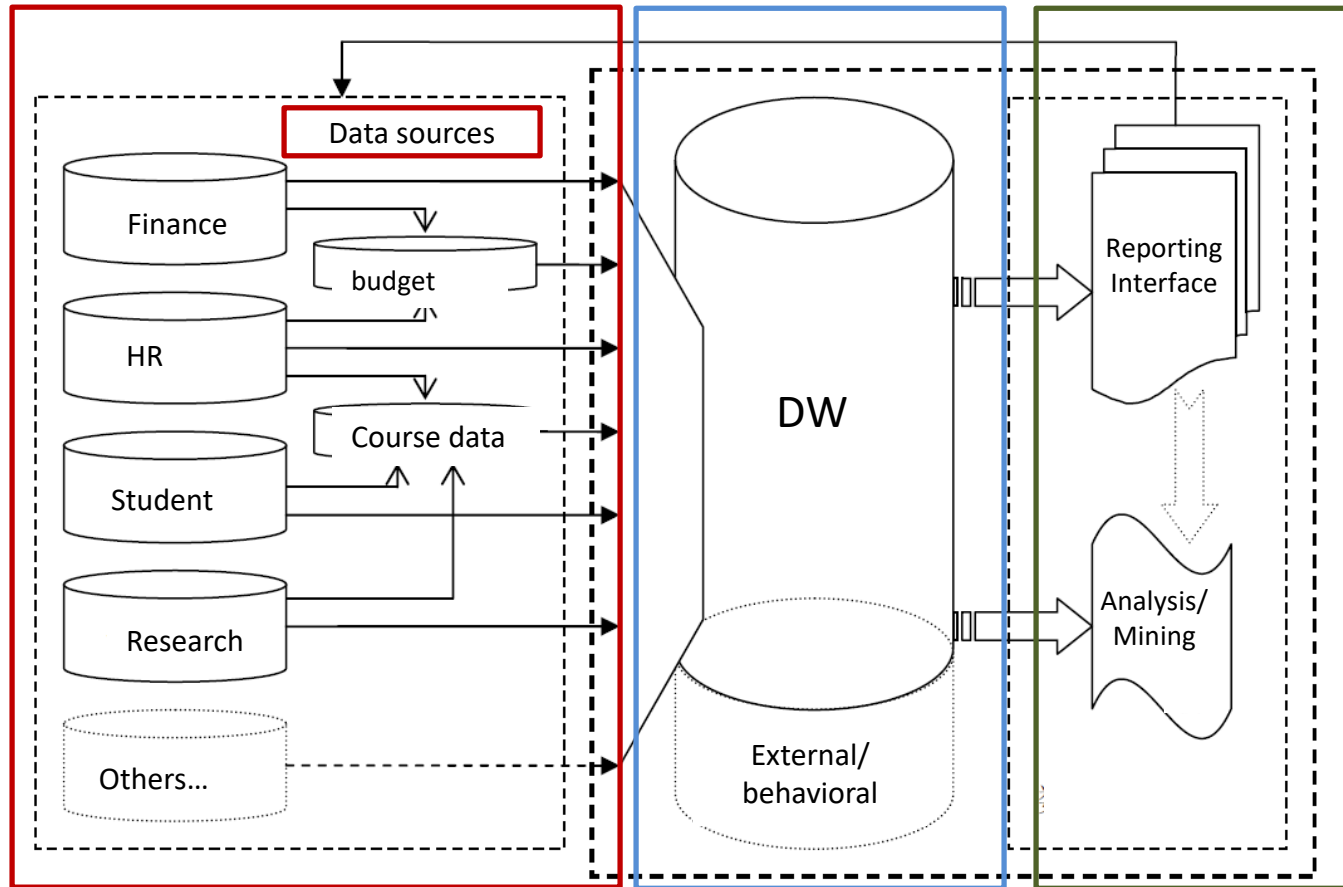
—BM Analytics

Institutional data type in higher education

- Operational data

- External data

} **administrative**

- Survey data

- Learning analytics/adaptive Learning

- Data from social media

} **behavioral**

Integrated data system and reporting platform

Data for pipeline analysis on student success

Pre-college

- High school courses
- Educational opportunities
- Participation in extracurricular activities
- College entrance exam scores
- Family background
- School background
- Student characteristics
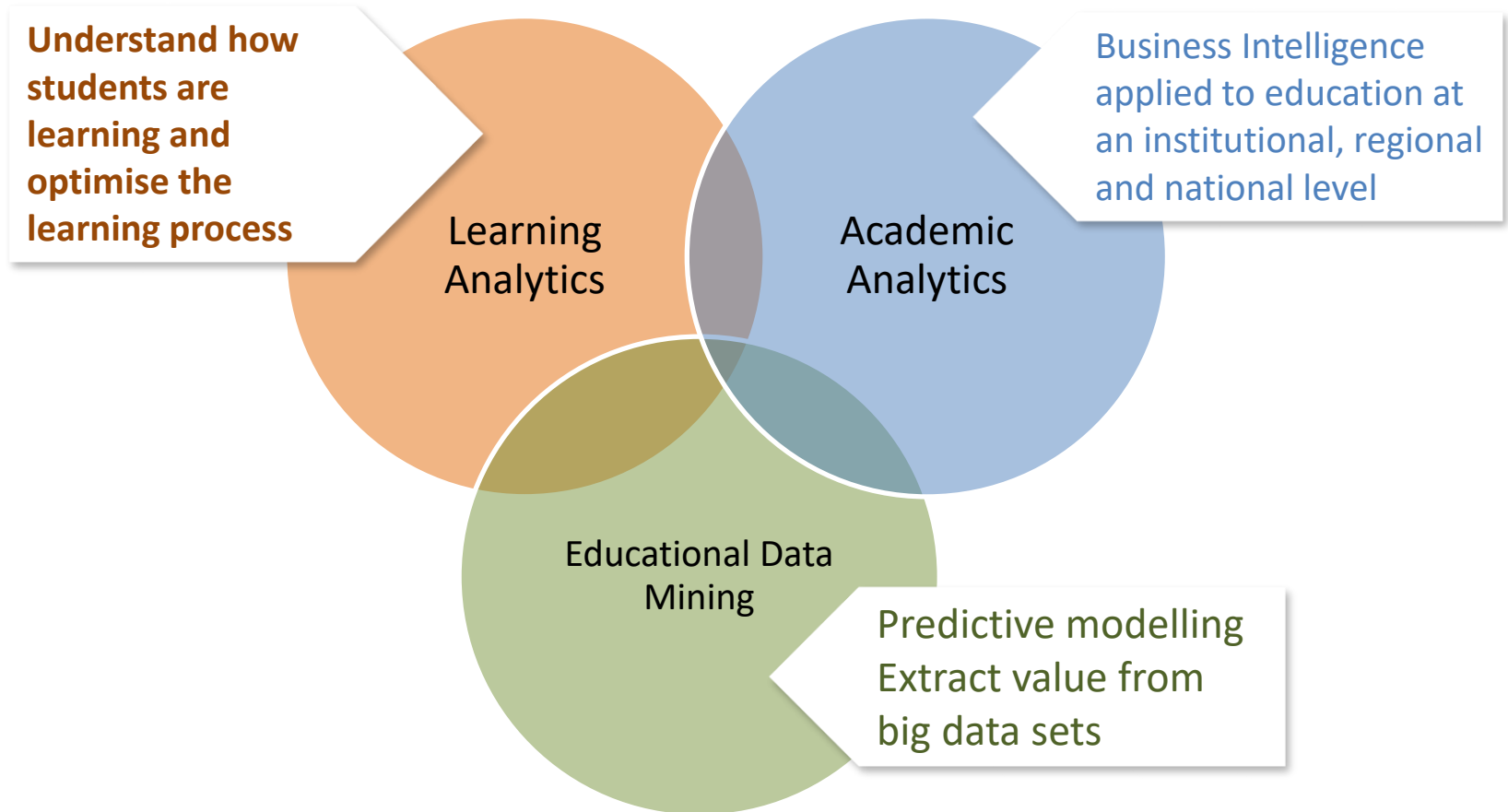- Application
- …

college

- Admissions
- Enrollment destination
- Course registration
- Learning behavior
- Satisfaction
- Adaptive learning
- Financial aid
- Engagement
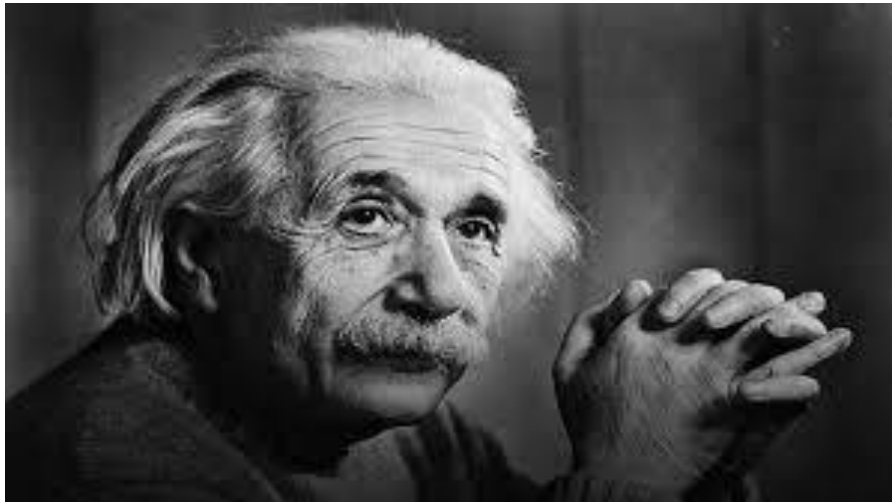- Grade Point Average
- Degree completion
- …

post-graduation

- Post enrollment
- Graduate school enrollment
- Employment
- Job performance
- Salary
- Contributions to the society
- …

Along with other data: budget, finance, faculty, research, facilities, campus climate…

Analysis and assessment in a holistic manner

Understand how students are learning and optimise the learning process

Learning Analytics

Academic Analytics

Business Intelligence applied to education at an institutional, regional and national level

Educational Data Mining

Predictive modelling
Extract value from big data sets

From data to action: a perspective of understanding data relations and the principles

INFORMATION
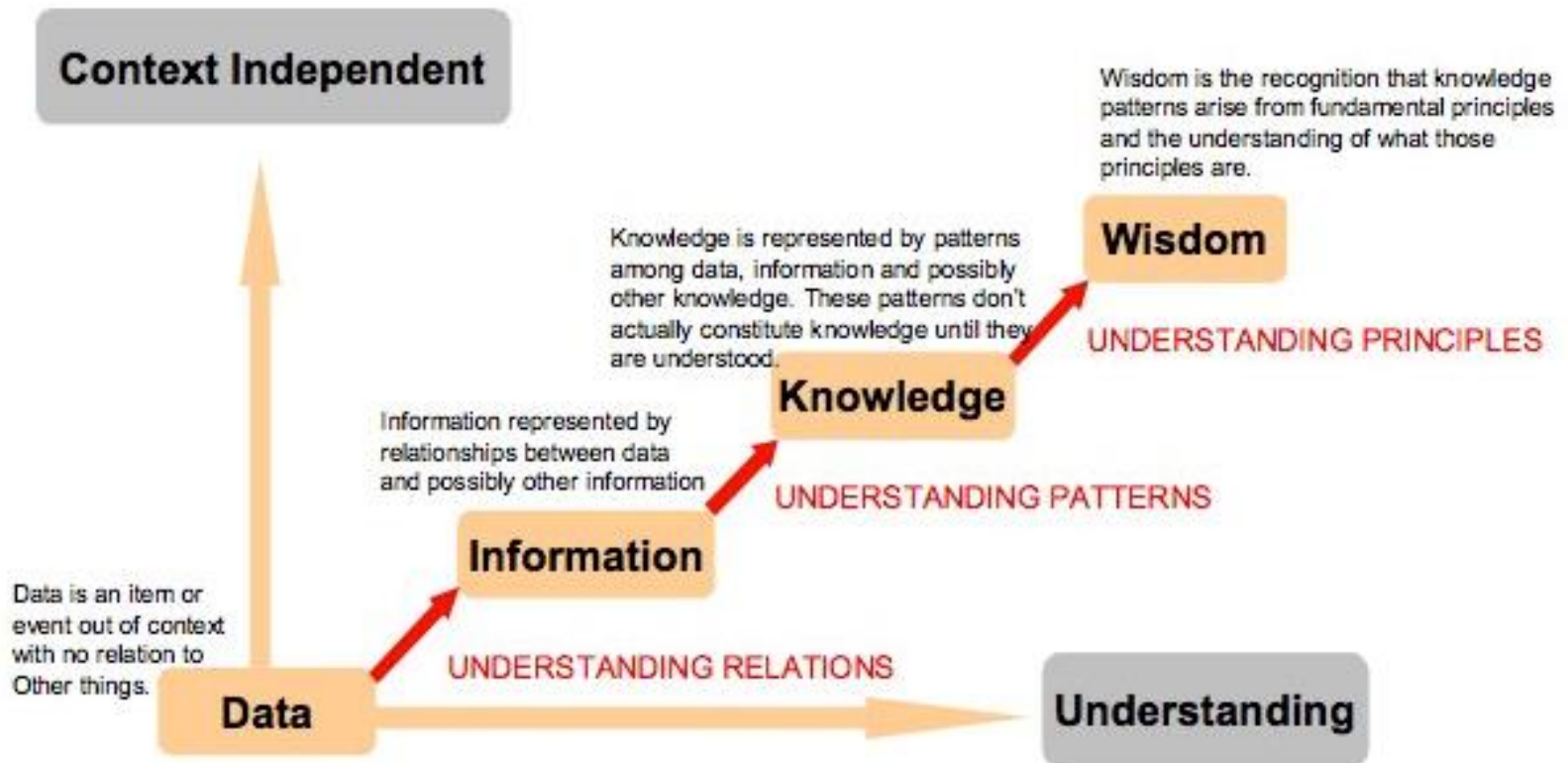
IS

NOT

KNOWLEDGE

From data to action: a perspective of understanding data relations and the principles

Our ability to learn what we need for tomorrow is more important than what we know today.
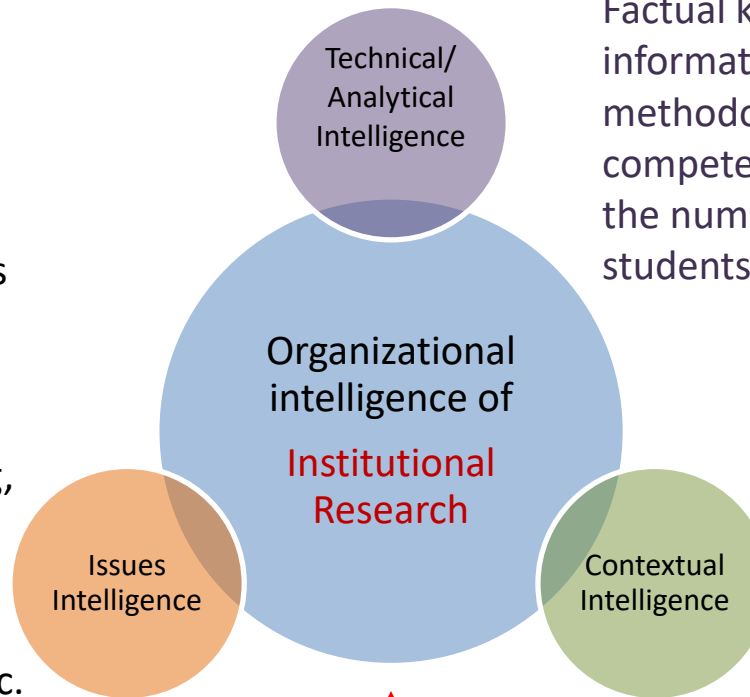
George Siemens
The founding president of the Society for Learning Analytics Research (SoLAR)

From data to action: a perspective of understanding data relations and principles

Enhance organizational intelligences of IR

Technical/ Analytical Intelligence

Factual knowledge or information, and analytical and methodological skills and competencies, e.g., calculating the number of FTE students, students' GAPs, etc.

Knowledge of major issues or decision areas that face institutions and the people who manage them, e.g., enrollment goal setting, faculty workload analysis, resource allocation, planning, program evaluation, etc.
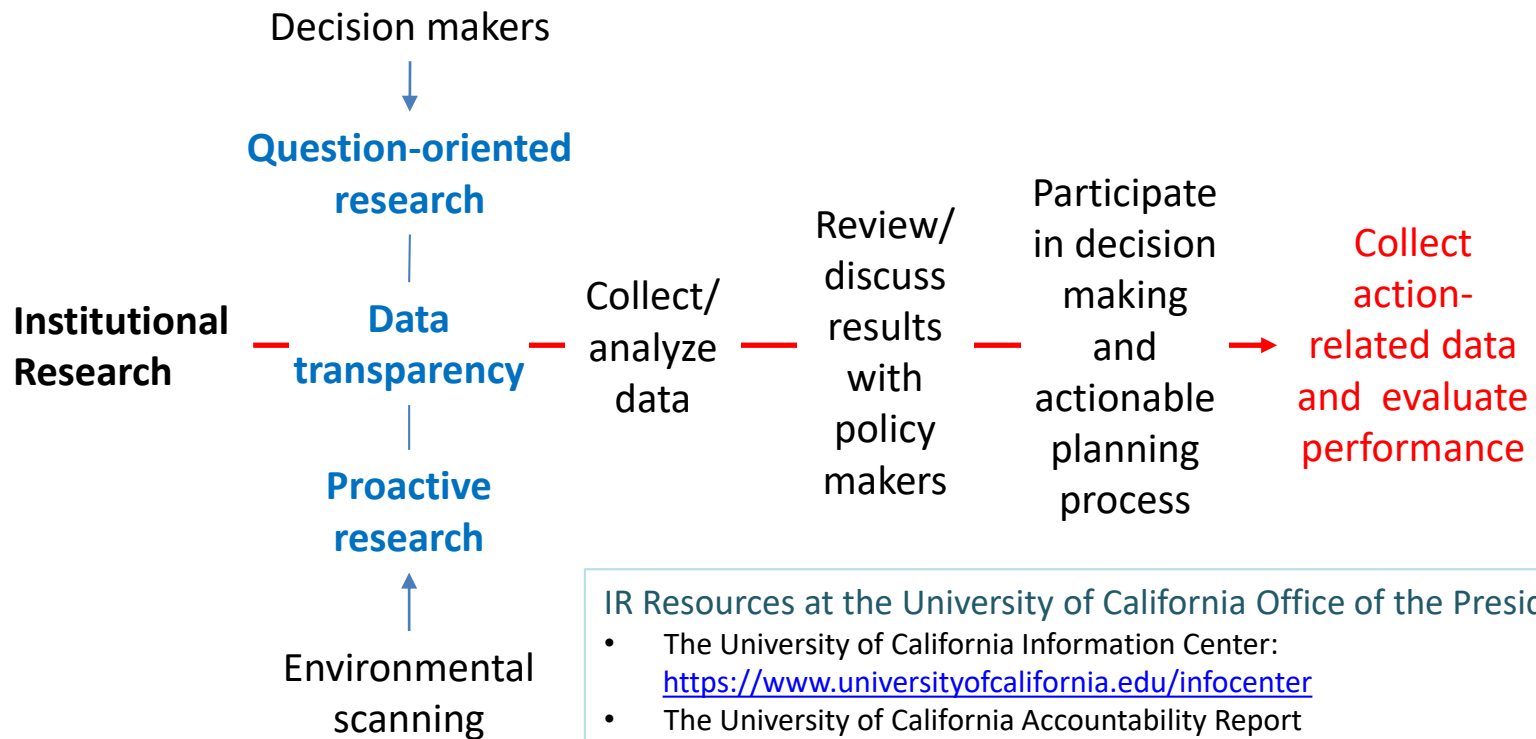
Organizational intelligence of

Institutional Research

Issues Intelligence

Contextual Intelligence

Understanding the culture both of higher education in general and of the particular campus, such as faculty and organizational culture, political structure, decision making process, etc.

environmental scanning

Reference: Patrick Terenzini. On the nature of institutional research and the knowledge and skills it requires

From data to action: a model based on data transparency, question-oriented research and proactive research to support transformational change

Decision makers

↓

Question-oriented research

|

Institutional Research — **Data transparency** — Collect/ analyze data — Review/ discuss results with policy makers — Participate in decision making and actionable planning process → Collect action-related data and evaluate performance

|

Proactive research

↑

Environmental scanning

IR Resources at the University of California Office of the President
- The University of California Information Center:
  https://www.universityofcalifornia.edu/infocenter
- The University of California Accountability Report
  https://accountability.universityofcalifornia.edu/2019/
- Reports and research articles
  https://www.ucop.edu/institutional-research-academic-planning//index.html

A brief summary

1. Higher education needs change, and needs transformational change.

2. Institutional research should and can play an important role in making transformational change in higher education.

3. By design, institutional research can provide analytical support to help better understand ourselves and the situation where we are, and also predict the future state, to some degree.

4. Institutional research should start with developing integrated data infrastructure and reporting platform (or by working with IT), conducting analysis in a holistic manner and getting involved in decision making and actionable strategic planning process to turn data into action.

5. IR is still a service unit, but should provide services based on holistic analysis in a proactive manner.

Thanks!   Questions?

Explore the UC story through data at UC Information Center!
http://www.universityofcalifornia.edu/infocenter