Bridging the Gap Between Information Systems Education and Information Systems Research: What Can Be Done to Help

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I. The problem: What does it look like?

II. 3 causes of the gap between I.S. education and I.S. research

III. 3 ways to bridge the gap between I.S. education and I.S. research

IV. 3 long-term strategies
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What We Teach

The VCU curriculum

INFO 610: Database Systems
INFO 620: Data Communications
INFO 630: Systems Development
INFO 640: Information Systems Management
+ 6 electives

The West Texas A&M University curriculum (sample courses)

CIDM 6305: Quantitative Analysis in Business
CIDM 6362: Advanced Business Forecasting
CIDM 5310: Business Intelligence & Decision Support Systems
CIDM 6350: Data and Information Management
CIDM 5360: Object-Oriented Analysis and Design
CIDM 6330: Software Engineering and Systems Development
CIDM 6340: Network Management and Information Security
CIDM 6363: Enterprise Process Management
CIDM 6390: Project Management
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What We Do Research On

sample titles:

• Perceived Usefulness, Perceived Ease of Use, and User Acceptance of Information Technology

• Generalizing Generalizability in Information Systems Research

• Computer Self- Efficacy: Development of a Measure and Initial Test

• Message Equivocality, Media Selection, and Manager Performance
I. The problem: What does it look like?

What We Teach

The VCU curriculum

INFO 610 - Database Systems
INFO 620 - Data Communications
INFO 630 - Systems Development
INFO 640 - Information Systems Management
+ 6 electives

The USF curriculum

MSIS 612 - Analysis, Modeling and Design
MSIS 611 - Database
MSIS 620 - Economics for IS Managers
MSIS 625 - IT Policy and Strategy
MSIS 613 - Communications and Networking
MSIS 651 - IT Security
MSIS 624 - Managing Projects and Change
MSIS 647 - Global Information Systems
MSIS 631 - e-Business Technologies
MSIS 648 - Enterprise Information Systems
MSIS 656 - Business Intelligence & Data Warehousing
MSIS 626 - Capstone Project

What We Do Research On

sample titles:

A reverse case in point:
Professor Steven Alter’s work

http://www.stevenalter.com/
I. The problem: What does it look like?

*Harvard Business Review*

“How Business Schools Lost Their Way”

Warren G. Bennis & James O’Toole

“Instead of measuring themselves in terms of the competence of their graduates, or by how well their faculties understand important drivers of business performance, they measure themselves almost solely by the rigor of their scientific research.”

“…physics envy…”

“Today it is possible to find tenured professors of management who have never set foot inside a real business, except as customers.”

“By allowing the scientific research model to drive out all others, business schools are institutionalizing their own irrelevance.”

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II. 3 causes of the gap between I.S. education and I.S. research

Cause #1: Blame the Ford Foundation and the Carnegie Corporation

Cause #2: Blame Science and Statistical Significance

Cause #3: Blame the Tenure-and-Promotion System
II. 3 causes of the gap between I.S. education and I.S. research

Cause #1: Blame the Ford Foundation and the Carnegie Corporation

A report by the Ford Foundation stated (Gordon and Howell, 1959):

*There has been too little pure research...* (p. 382)

*...business research needs to become more analytical, to develop a more solid theoretic underpinning, and to utilize a more sophisticated methodology* (p. 384)

*This in turn requires that the business schools turn to the underlying disciplines such as the behavioral sciences and mathematics and statistics...* (pp. 384–385)

II. 3 causes of the gap between I.S. education and I.S. research

Cause #1: 
Blame the Ford Foundation and the Carnegie Corporation

Also, a report by the Carnegie Corporation stated (Pierson, 1959, p. 313):

...business schools need to concentrate on developing a body of widely applicable generalizations which have been scientifically tested...

...

Both hypothesis forming and hypothesis testing are essential.

...

...very rarely (in 1959) is emphasis placed on developing analytical findings which can be fitted into a general system of principles and tested in a scientific manner.

II. 3 causes of the gap between I.S. education and I.S. research

Cause #2: Blame Science and Statistical Significance

<table>
<thead>
<tr>
<th>Research that describes or explains what exists or has existed</th>
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<th>Research that studies the world of people and their institutions</th>
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Four Research Categories
II. 3 causes of the gap between I.S. education and I.S. research

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<td>physics, astronomy, chemistry, biology, geology</td>
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Four Research Categories

the “real” sciences; the source of physics envy
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Cause #2: Blame Science and Statistical Significance

What’s so important about statistical significance?
An example of an experiment: tossing a coin 100 times.
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What’s so important about statistical significance?
An example of an experiment: tossing a coin 100 times.

If the experimental evidence is around 50 heads, it’s probably a fair coin.
If the experimental evidence is 90 or more heads, the probability it’s a fair coin is very very small.
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*Given the experimental evidence, if the probability that the belief being tested is true is less than 5%, then this probability is called “statistically significant.”*
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Cause #2: Blame Science and Statistical Significance

What’s so important about statistical significance?

Some researchers say that research must be statistical in order to be considered scientific.

However, Neyman and Egon Pearson introduced the idea of a confidence interval only in 1928 and the procedure for hypothesis testing only in 1933.* So, if research must do statistical hypothesis testing and talk about statistical significance in order to be considered scientific, then this would mean that there was no science before 1928!

http://www.oxfordreference.com.proxy.library.vcu.edu/views/ENTRY.html?subview=Main&entry=t106.e2303
II. 3 causes of the gap between I.S. education and I.S. research

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What’s so important about statistical significance?


“It’s science’s dirtiest secret: The ‘scientific method’ of testing hypotheses by statistical analysis stands on a flimsy foundation” … “numerous deep flaws” in null hypothesis significance testing … “statistical techniques for testing hypotheses…have more flaws than Facebook’s privacy policies” … “The problem is not that people use P-values poorly … it is that the vast majority of data analysis is not performed by people properly trained to perform data analysis.”

II. 3 causes of the gap between I.S. education and I.S. research

Cause #3: Blame the Tenure-and-Promotion System

- journal rankings
  
  Financial Times’ 50 Journals
  UT Dallas’ 24 journals
  AIS Senior Scholars’ “Basket of 8”
  Individual business schools’ journal lists

- Excellent research is necessary; excellent teaching is nice.

- what journals want *versus* what the classroom needs
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case in point: an assistant professor’s chances at a certain prestigious business school
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An exceptional exception: \textit{MIS Quarterly Executive}
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III. 3 ways to bridge the gap between I.S. education and I.S. research

Possible Solution #1:
Every business school should run its own business.

Possible Solution #2:
Action Research

Possible Solution #3:
Research Journals Modeled on Law Reviews
Possible Solution #1: Every business school should run its own business.

- ...suggested by Bennis and O’Toole, crediting Edwin Land (co-founder of Polaroid). This would take care of their concern: “Today it is possible to find tenured professors of management who have never set foot inside a real business, except as customers.”

- Participant observation and research case studies have been garnering more and more respectability.


- Field work can preserve the important scientific difference between war stories (first level constructs) and theory (second level constructs)
III. 3 ways to bridge the gap between I.S. education and I.S. research

Possible Solution #2: Action Research

III. 3 ways to bridge the gap between I.S. education and I.S. research

Possible Solution #3:
Research Journals Modeled on Law Reviews

- Some articles authored by practitioners; some by professors; some by both.
- The audience: practitioners *and* professors
- Edited by the top students
- Professors get “credit” for publishing in it
- This would be in addition to, not instead of, traditional business journals.
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Long-term Strategy #1: Mobilize an outside agency again (like the Ford Foundation or Carnegie Corporation).

Why?

• It worked before.

• A jolt from the outside is needed.
IV. 3 long-term strategies

Long-term Strategy #2: Raise a lot of money.

"During the 1960s, the Ford Foundation committed $35 million [over $280 million today] to help schools transition away from a focus on anecdotal data and descriptive analysis to more systematic, social science based approaches” (Final Report of the AACSB International Impact of Research Task Force, 2008, p. 9).

How much would be needed today to help schools expand from social science based approaches to include truly professional and practitioner approaches?
IV. 3 long-term strategies

Long-term Strategy #3: Lobby the AACSB.

The accreditation body for business schools: Association to Advance Collegiate Schools of Business
http://www.aacsb.edu/

“For over a century, AACSB Accreditation has been synonymous with the highest standards in business education, and has been earned by less than 5 percent of the world’s business schools. Today, 810 institutions across 53 countries and territories have earned AACSB Accreditation.”
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