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Mapping Industry Standards in Undergraduate Business Education

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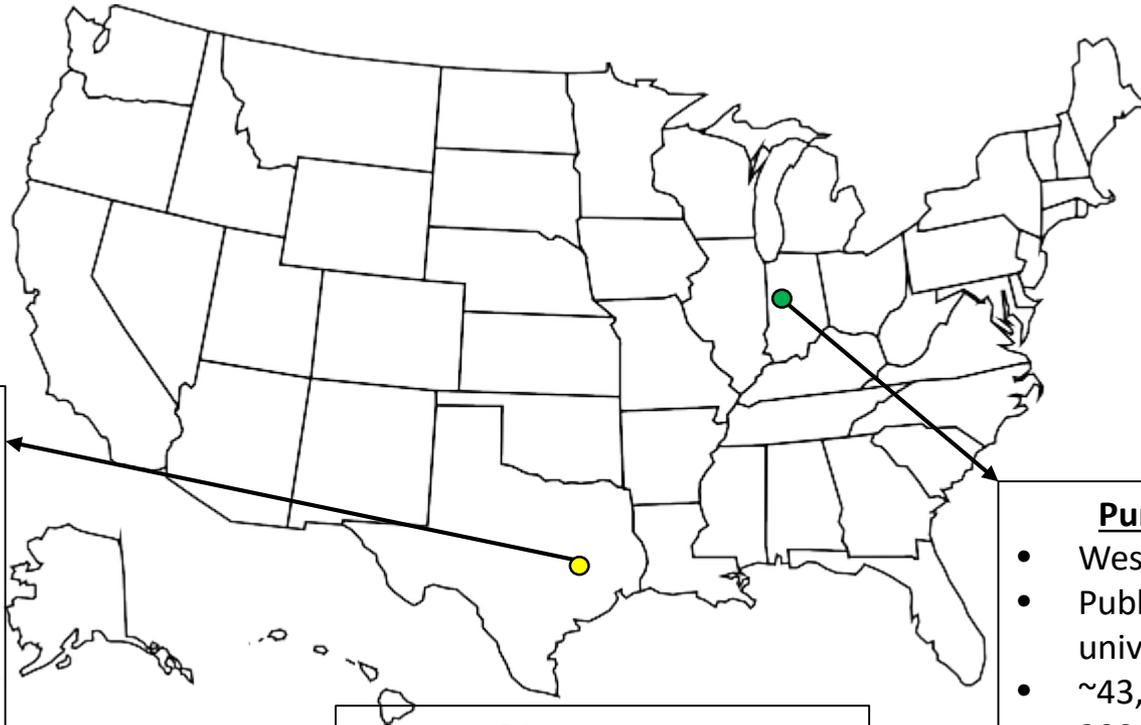
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About our institutions...



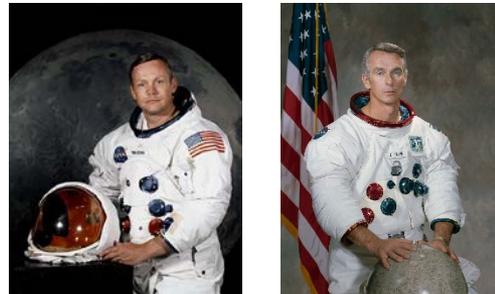
Texas A&M

- College Station, TX
- Public research university, established 1876
- ~70,000 students
- >130 undergraduate programs; >260 graduate programs

Purdue University

- West Lafayette, IN
- Public research university, founded 1869
- ~43,000 students
- 200 undergraduate programs; >80 graduate programs

24 astronauts



Our Business Schools

Purdue

- Krannert School of Management
- Enrollment: 3,164 (2,450 undergraduate, 714 graduate)
- #24 US News & World Report *Overall Best Undergraduate Program*
- 7 undergraduate programs
- 7 specialized master's programs
- 4 MBA program options
- 3 Ph.D. Programs (Economics, Management, & Organizational Behavior - with multiple options to specialize)

Texas A&M

- Mays Business School
- Enrollment: 6,041 (4,858 undergraduate, 1,138 graduate)
- #31 US News & World Report *Overall Best Undergraduate Program*
- 7 undergraduate programs
- 7 specialized master's programs
- 3 MBA program options
- Ph.D Program in Business Administration (multiple options to specialize)

Study Background

“A **standard** is a document that provides requirements, specifications, guidelines or characteristics that can be used consistently to ensure that materials, products, processes and services are fit for their purpose.”

– International Organization for Standardization (ISO)

Impact on Business



93%

Sources:

- Thompson, D. C., 2011. A guide to standards (Rev. 3rd e). Portsmouth, NH: Standards Engineering Society.
- Okun-Kozlowicki, J. "Standards and Regulations: Measuring the Link to Goods Trade"; https://www.trade.gov/td/osip/documents/osip_standards_trade_full_paper_2016.pdf; 2016

Industry Standards in Education

- In Engineering & Engineering Technology Curricula
 - Required by ABET (Accreditation Board for Engineering and Technology) accreditation criteria
 - Survey – ~30% of ET faculty respondents don't teach standards; ~50% reported “lack of expertise on the application of standards” (Khan, Karim, & McClain 2013)
- In Business Curricula
 - No specific language in AACSB guidelines
 - General business knowledge area – “systems and processes in organizations, including planning and design, production/operations, supply chains, marketing, and distribution”

Source:

- Khan, A. S., A. Karim and J. A. McClain, 2013, “The State of the Use of Standards in Engineering and Technology Education”. ASEE Annual Conference & Exposition. <https://peer.asee.org/22618>

Research Questions

- Are industry standards being taught in undergraduate business management curricula? If so, in which types of courses?
- What opportunities are there to integrate (or further integrate) industry standards into undergraduate business management courses?

Literature Review

- Little traditional literature published on integrating standards into business curricula
- National Institute of Standards and Technology (NIST)
- International examples



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DE GENÈVE**

Methods

Curriculum mapping of undergraduate management programs to a list of pre-established terms related to standards

PURDUE
UNIVERSITY®



38 syllabi, 26 courses



49 syllabi, 36 courses

Results

Only 8% of courses included standards language in the syllabus (5/62)

Institution	Course Title	Syllabus Language That Includes Standards
Purdue	Competitive Strategy	"competition for standards and multi-sided platforms;" "the art of standards wars"
Purdue	Technology Strategy	"standard battles & design dominance"
Purdue	Manufacturing Strategy	A case questions is: "what is the process employed at Nypro to identify and standardize important innovations?"
Purdue	International Management	"global standardization"
Texas A&M	Introductory Accounting	"accounting standards"

Results – potential curriculum areas for standards integration

Business &
Management
Strategy

Business Law

Ethics & Social
Responsibility

Human
Resources

Information
Systems

International/
Global

Marketing

Process /
Product
Development

Project
Management

Results

50% of courses were found to have the **potential** for the integration of standards based on language in the syllabi (31/62);

Purdue – 14 & Texas A&M - 17

Discussion

- Based on reviewing syllabi, appears to be little current integration into undergraduate management curricula at two large, highly ranked research institutions
- Openness and flexibility of the AACSB accreditation guidelines
- Similar to many engineering faculty, business faculty may not feel they have the expertise to meaningfully integrate standards content into curricula

Examples of Potential Integration

- Business law – concepts of mandatory and voluntary standards
- Human Resources
 - ISO 30405 (Human resource management - guidelines on recruitment)
 - ISO/TR 30406 (Human resource management -- Sustainable employability management for organizations)
- Marketing - standards can be used to promote how products meet or exceed standards

Librarians can help

- Librarians develop & manage standards collections for academic institutions
- Several studies have discussed how librarians teach about standards in engineering and technology – why not business?
- Standards are \$\$ -- librarians can also highlight low-cost and freely available options for obtaining standards

Study Limitations

- Lacks inter-rater reliability
- Only focused on course syllabi
- Only evaluated academic programs at two institutions – cannot be widely generalized
- Does not consider student co-curricular activities (e.g., internships, club activities, competitions)

Conclusion & Next Steps

- Standards are important for business success and it's important to consider how they may best be integrated into undergraduate curricula to prepare graduates for the workplace.
- This is a pilot study that highlights the need for future work in this area.

Thank you!

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Study accepted for publication:

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