

STANDARDS ARE EVERYWHERE:

AN INFORMATION LITERACY APPROACH TO STANDARDS EDUCATION

Paul McPherson
Assistant Professor of Practice
School of Engineering Technology
Purdue University

November 2, 2017

OVERVIEW

- Meet the team
- Background
- Project goals
- Current status
- Items left to accomplish

RESEARCH TEAM



Margaret Phillips
*Assistant Professor of
Library Science
Engineering Information
Specialist*
Purdue University Libraries

Michael Fosmire
*Professor of Library Science
Head, Physical Sciences,
Engineering, and
Technology Division*
Purdue University Libraries

Paul McPherson
*Assistant Professor of
Practice
Mechanical Engineering
Technology*
Purdue Polytechnic Institute

BACKGROUND

- Purdue Libraries-MET program partnership
- MET 102 Class Project
 - “everyday objects” standards assignment
- Faculty discomfort
 - 49% of survey respondents reported “lack of faculty expertise” as an impediment to teaching about standards (*Khan, Karim, & McLain, 2013*)

PROJECT GOALS

Develop an Open Standards Education Platform

- Interactive, online modules (4)
- Case study assignments – written, video
- Case study database
- Online Badging

ACCOMPLISHMENTS TO DATE - LESSONS LEARNED

1. Development and deployment of online modules:

http://guides.lib.purdue.edu/NIST_standards

Software Utilized: Articulate

2. Development of Case study database:

<https://apps.lib.purdue.edu/standards/SearchDatabase.php?searchtype=CaseStudy>

3. Development of Badging system – Passport System

BADGING



Issuer:

Purdue University Libraries; Purdue Polytechnic Institute

Organization:

Purdue University

Created by:

Michael J Fosmire, Aug 25 2017

Learning Outcomes

Students who complete this badge will be able to

- Locate and access standards from appropriate sources
- Describe the role of standards in product design
- Classify a standard as either design, performance, or testing (or a combination)

Technical Standards Explorer: Developing Level

☆ Get started

Working through this badge provides a basic introduction to and appreciation of technical standards, which are integral to the development and production of products in our modern economy. Instructional content for this badge is located here: http://guides.lib.purdue.edu/NIST_standards. This badge provides a place for the badge earner to demonstrate their mastery of the content through a document that analyzes two standards on a variety of criteria. This badge shows an developing mastery of understanding and utilizing technical standards. We also provide a **Technical Standards Integrator: Proficient Level** badge that certifies a higher level of expertise working with technical standards.

☆☆ Challenges

● Standards Exploration ▾

EXPLORER EVALUATION

Standards for Everyday Objects - Rubric

Dimension	Weight	Raw Score	Weighted Score
Identify two standards	0.1		0
Summary content:			
Relate to Design/MFG/Testing	0.35		0
Depth of technical content	0.2		0
Identified proper SDO	0.1		0
Sufficient summary of SDO work	0.1		0
Overall project formatting	0.15		0

BADGING CONTINUED



Issuer:

Passport by Purdue

Organization:

Purdue University

Created by:

Michael J Fosmire, Sep 12 2017

Learning Outcomes

Students who complete this badge will be able to

- Locate and access standards from appropriate sources
- Extract pertinent information from a technical standard
- Apply knowledge from a standard to a practical situation
- Compose a formal, structured document using appropriate referencing and citation styles

Technical Standards Integrator: Proficient Level

☆ Get started

Students working through this badge will demonstrate a high level of familiarity with standards and the ability to extract and apply information from those standards to test, improve, or design products. Instructional content from the his badge is located here: http://guides.lib.purdue.edu/NIST_standards.

Students will demonstrate their ability to Integrate information from standards through a case study analysis (see [here](#) for examples).

This badge is an extension of **Technical Standards Explorer: Developing Level**, which we suggest you complete before beginning this badge.

☆☆ Challenges

● Technical Standards Case Study ▾

Case Study Rubric

Criteria	Strong - 3	Average - 2	Weak - 1
Case Study Title	Unique title that adequately describes the holistic content/analysis of the standard	Only highlights portions of the information covered in the case study	Is not reflective of the content discussed in the study or merely uses the title of the standard as the case study title
Provides Information for Database Entry	Provides: Standards Development Organization, Standard Identification Number, Title of Standard, Keywords	Provides: Standards Development Organization, Standard Identification Number, Title of Standard	Does not provide any information
Connecting Technical Content to Item	Clearly presents (in detail) how the technical content contained within the standard relates to the Design, Manufacturing, or Testing/Performance of the item	Presents technical content but lacks sufficient connection to the Design, Manufacturing, or Testing/Performance of the item	Inability for reader to understand how the standard drives the Design, Manufacturing, or Testing/Performance of the item
Use of terminology	Utilizes and connects both technical terminology and layman terms to help the reader clearly understand the importance of the standard	Utilizes both technical terminology and layman terms but difficult for the reader to understand connection between terms and to the item	Does not utilize appropriate terminology to allow the reader to connect content to the item from a layman perspective
Use of sections	Utilizes sections appropriately to break up the case study in a relevant and coherent maner	Utilizes sections, but in a manner that is difficult to understand	Does not utilize sections
Use of Images	Utilizes relevant images based on technical content discussed, images are either original in nature or permission has been obtained for use in study. Images assist reader in understanding	Utilizes relevent images but are not original. Obtained permission for use. Only semi-helpful in understanding content	Does not use any images to assist reader in understanding of content
Citations and References	Case study utilizes primary sources for content and has proper in-text citations	Combination of primary and secondary sources but utilizes appropriate citations throughout document	Does not provide sources or citations

COMMUNICATION OF PROJECT

- ASEE workshop
 - 34 attendees – faculty, librarians, SDO representatives
 - Active learning activities
 - <http://guides.lib.purdue.edu/c.php?g=728958&p=5205697>
- Integration into design course
- Purdue Polytechnic Institute – standards workshop
 - Integrating standards into your curriculum

ITEMS CURRENTLY IN PROGRESS

- Usability Study
 - Identify the ease of using the modules
- “Effect on Learning” study
- Remaining case studies to be edited and uploaded
- Completion of badge system for integration into design course

STILL TO COME

- Summary paper
- Full reflection of project
- Paper for SES