

Using Evidence from Capstone Projects for General Education Assessment and Curriculum Improvement

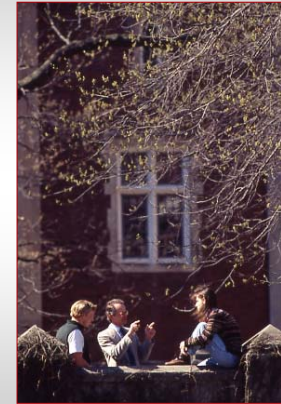
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The WPI Plan

- **A Faculty-Led Revolution (1970)**
 - No required courses (then)
 - Three degree-required projects (still)
 - Focus on outcomes and abilities
 - 7-week terms, non-punitive grading
- **The Vision: “Technological humanists”**
 - Developing a broad perspective
 - Integrating theory and practice
 - Addressing societal needs
 - Considering the impacts of technology
 - Understanding and working with others



A Framework for General Education at WPI

1. Areas of Inquiry and Knowledge
2. Intellectual and Practical Skills
3. Application through Integrative Projects
4. Personal Responsibilities for Lifelong Learning



WPI

Integrative Projects at WPI



- Year 1: Great Problems Seminar, 6 CH (pilot)
- Year 2: Humanities and Arts Inquiry Seminar or Practicum, 3 CH
- **Year 3: Interactive Qualifying Project, 9 CH**
- Year 4: Major Qualifying Project, 9 CH

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A Culture of Evidence

- All faculty involved in project advising
- Most students graduate with accredited majors (ABET, AACSB)
- Faculty-approved learning outcomes at course, program, and campus levels
- Undergraduate Outcomes Assessment Committee (UOAC)



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Interactive Qualifying Project (IQP)

- Three course equivalent *society-technology project*
- Third year, multidisciplinary teams and advisors
- Developing sustainable solutions to problems in social context
- 60% completed off-campus; 40% overseas



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Learning Outcomes of the IQP

- Research skills and information literacy
- Critical thinking
- Open-ended problem solving
- Evidence-based writing
- Ethical awareness
- Effective teamwork



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Assessing the IQP

- Periodic program reviews of written reports
- Faculty reviewers trained and calibrated
- Learning outcomes evaluated using rubrics
- Data analyzed, conclusions and actions identified



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Example Rubric: *Ability to Use Conflicting Information Critically*

- Rating 5: Excellent - The project report highlights conflicting viewpoints from multiple sources that are relevant to the field of inquiry. The students handle these conflicts in an intellectually honest manner giving appropriate recognition to honest disagreements.
- Rating 3: Acceptable - The project report identifies conflicting viewpoints from a limited number of sources.
- Rating 1: Poor - The project report fails to identify conflicting viewpoints or appears to treat conflicting views in a dismissive (not in an intellectually honest) way.

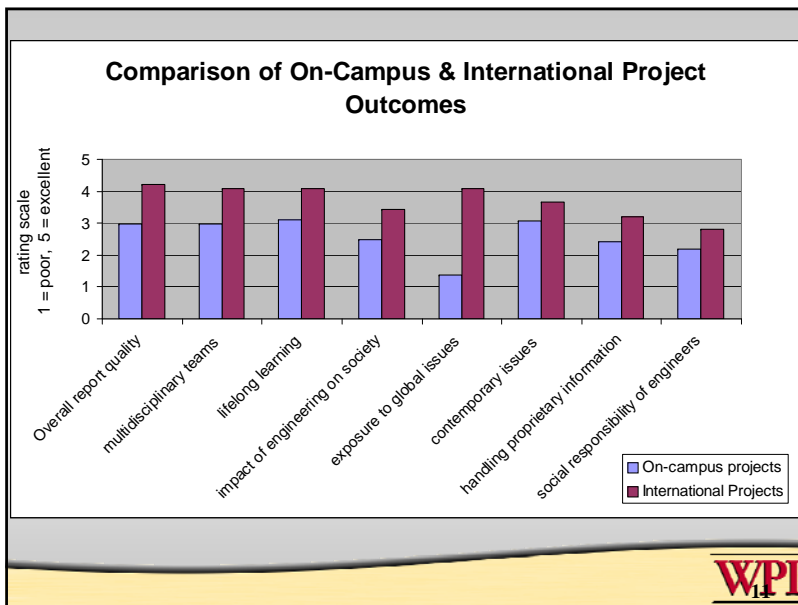
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Using the Evidence

- Improving advising and preparation
- Broader curriculum review
 - Campus wide learning outcomes
 - First Year and General Education reforms
- Accreditation
 - ABET, AACSB, NEASC



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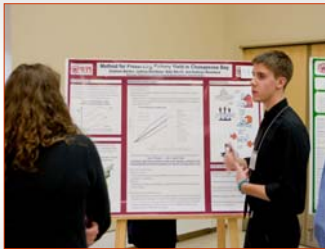
Impact on Curriculum

- IQP Program Enhancement
 - Faculty workshops and seminars
 - On-line advising resources
 - Outreach and mentoring
 - Worcester Community Project Center

- First Year Experience
 - Great Problems Seminar



Current and Future Work



- Formalizing General Education requirements
- Scaling FY seminars to all students
- Expanding off-campus opportunities

www.wpi.edu/Academics/Outcomes/

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