Overcoming the Pratfalls of Program Assessment

Kevin Huggins & Christa Chewar
Electrical Engineering & Computer Science
United States Military Academy
• Idea Assessment Process Characteristics
• Our Assessment Process
• Pratfalls
• Discussion
• Conclusion
**Required Attributes:**
- Support data collection to evaluate performance indicators
- Drive continuous improvement through outcome assessment
- Document our “feedback loop”

**Desired Attributes:**

- An assessment process **should:**
  - Help identify areas of excellence and areas of concern
  - Foster increased communication and awareness among faculty
  - Inspire continuous critical review and revision of teaching goals

- An assessment process **should not:**
  - Impose undue work
  - Prescribe or dictate classroom activities
  - Invoke defensive reactions
Our Assessment Strategy

- Assessing Objectives & Outcomes
  - Adopt ABET/CAC outcomes
  - Identify: *What do we really care about?* --Performance Indicators!
  - Select Steering Committee

- Organizing the work
  - Relate Performance Indicators to Outcomes
  - Identify learning levels
  - Group courses by learning level (Course Groups)

- Measuring Performance Indicators
  - Course Directors claim support for Performance Indicators
  - Oversight: Course Monitoring Teams (CMT) for Course Groups
  - 2-yr assessment cycle
• Unbiased, independent data review
• Mentoring committee
• Conference paper reviewer
• Partnered, self-reflection
5.1 Solve a problem by integrating COTS hardware and software systems
5.2 Diagnose the cause of an unexpected result
5.3 Solve a problem using the specification of an unfamiliar software package
5.4 Develop a plausible explanation of observed system behavior
5.5 Solve a problem using unfamiliar syntax and semantics
5.6 Integrate COTS hardware and software systems

Scaffolding

- Facilitates focus on formative and summative levels of thematic mastery
- Spreads assessment focus across the program, rather than just on capstone events
Sample Assessment Timeline

**Course Director (CD)**
- Draft Course Proposal
- Course Proposal

**Course Monitoring Team (CMT)**
- Committee Proposal Review

**CMT + Prog Director + CDs**
- Provide instructions for data collection
- Compile Support Evidence

**Semester Begins**
- Collect Evaluation Data
- Partial Course Summary

**Semester Ends**
- Course Proposal
- Provide instructions for compilation
- Full Course Summary

**3 wks post**
- Committee Summary Review
- Performance Indicator Evaluation
- Semester Data Collection Review
- x4

**Performance Indicator Input**

**Steering Committee**
- Annual Outcomes Review
- (Summer)

**Legend**
- Meeting
- Archived Report
- Informal Report
- Activity
Committee Proposal Review (CPR):
- CMT + Program Director reviews all Course Proposals (1-3) for upcoming semester
- Consider applicable performance indicator guidance from CS Steering Committee
- Course Directors attend and receive feedback

Committee Summary Review (CSR):
- CMT + Program Director reviews Course Summaries from previous semester
- Course Directors attend and receive feedback
- Support claims & evidence are synthesized as the Performance Indicator Evaluations, sent to Assessment Lead

Semester Data Collection Review:
- Prepared by Assessment Lead, synthesizes the 4 Performance Indicator Evaluations, sent to CS Steering Committee

Annual Outcomes Review:
- CS Steering Committee reviews the two Semester Data Collection Reviews from each academic year
- Provide performance indicator guidance to CMTs for upcoming academic year
Through the Course Summary and Proposal Process Course Directors:
• Claim to support outcomes in their group
• Identify indicators embedded in their course
• Gather data based on embedded indicators
• Compile data to show support for claim

Outcome Monitor Team:
• Monitors course proposals to ensure coverage of outcomes
• Evaluates support of each outcome in each course summary
• Reports state of monitored outcomes to steering committee
Monitoring Computer Science Outcomes

CS Steering Committee

Outcome Achievement Reports

Constituent Faculty

Course Proposal and Summary Process

Foundation Course Directors

Intermediate Core Course Directors

Advanced Course Directors

Integrative Course Directors
Pratfall #1: Feeding a Zero-Defects Mentality

• Description
  – High visibility to showcase program
  – Desire to appear perfect from every angle

• Symptoms
  – Never any problems documented in program
  – A ‘perfect show’ when showing the program
  – Leader defensive postures

• Strategies
  – Communicate that program/courses is not perfect
  – PD value quality course evaluation
Pratfall #2: Over-Assessing

• Description
  – More assessment is better mentality
  – Key nuggets lost in sea of data

• Symptoms
  – Course directors claim to support excessive PIs
  – Multiple courses collecting data on same PI
  – Excessive planned collection events in a course for a single PI

• Strategies
  – Spread PIs among different courses
  – Course monitoring team
• Description
  – Senior faculty sense restriction on academic freedom
  – Assessment is viewed as overly prescriptive

• Symptoms
  – Seasoned instructors non-supportive
  – Evaluation events not aligned with the actual course
  – Students frustrated by perceived unfair grading
  – Lack of change in courses

• Strategies
  – Solicit and apply faculty input to PI mappings
  – Course directors select PIs to support
Pratfall #4: Perceiving Low Return on Investment (ROI)

• Description
  – Faculty unconvinced of assessment benefits

• Symptoms
  – Assessment program looses steam over time
  – Faculty not administering assessment program devote less time
  – Increase complaints about assessment activities

• Strategies
  – Tie assessment to junior faculty mentoring
  – Use assessment as opportunity for increased responsibility
  – Provides opportunities to familiarize with other parts of curriculum
• Description
  – Seen as process to ensure faculty teach the same things, the same way
  – Consistency produces a better program (on paper).
• Symptoms
  – Program is a well-oiled assessment machine
  – No desire for change because ‘we already got it right’ after the previous ABET visit
  – There is also very little change in the curriculum
  – Feeling of disconnectedness with constituents or external colleagues
  – Students perceive program’s relevancy as low
• Strategies
  – Maintain strong, active ties with constituents
  – Seriously consider advisory board recommendation
  – External reviews of capstone events
Pratfall #6: Not Seeing the Forest through the Trees

• Description
  – Program leaders overwhelmed by quantity of data
  – Not able to detect need for programmatic changes

• Symptoms
  – Many recommendations and observations
  – Few programmatic changes

• Strategies
  – Remove PD from CMT-level actions
  – Programmatic changes are made with a separate committee of stakeholders that focus solely on a program perspective