"You learn no matter what happens"

Approaches to harmonizing assessment of situated learning with discipline practice and situational realities

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Outline

1. Overview and Situated Learning
2. BCIT Projects Courses Overview
3. Faculty Supervisors and Evaluation
4. Two Case Studies
5. Discussion Questions
6. Appendix – Supporting Information

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Roundtable Overview

• In the BCIT School of Computing and Academic Studies we run large industry-focused projects courses to provide situated learning
• Students form teams, select projects and work towards goals defined by their industry Clients
• Faculty Supervisors, attached to each team perform the assessments using a standard schema, which can be adapted based on variables in each project
Situated and Experiential Learning

• In situated and experiential learning scenarios student learning opportunities arise in unexpected ways

• Learning objectives, assessment, evaluation, course organization and teaching strategies do not follow traditional models

• Our challenge is to identify and capitalize on these opportunities while harmonizing assessment and evaluation with learning objectives and a changing context
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PROJECTS COURSES OVERVIEW
Learning Outcomes and Challenges

Course Learning Outcomes

• Determine project requirements
• Plan and schedule project work tasks
• Design a system that meets documented requirements
• Implement a system that has been designed
• Test and deliver a working system to an industry client

Challenges and Solutions

• Learning objectives are the same for all students and must be assessed and evaluated fairly despite changing situational realities
• Assessment is based on industry standard artifacts
• Supervisors and the Course Instructor perform the assessments, not the Clients
# Industry Sponsored Student Practicum (ISSP) Projects

## Overview
- We invite industry Clients to submit software development project proposals
- Several times oversubscribed for each of three intakes per year
- 360-degree feedback for assessment, from Supervisor, instructor, Clients, and peers

## Courses
- Students are enrolled in two required Project Practicum courses
- Two formats, 15 week and 5 week terms
- Actual projects from industry that provide situated learning for students about their future industry roles

## Structure
- Students self-organize into teams to select and work on projects
- Teams produce software and documentation
- Each team is paired with a faculty Supervisor for support
- Supervisors do most of the assessment and evaluation
# Course and Project Roles

<table>
<thead>
<tr>
<th>ROLES</th>
<th>DESCRIPTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>Industry Clients</td>
<td>Set project goals</td>
</tr>
<tr>
<td></td>
<td>Provide feedback</td>
</tr>
<tr>
<td>Students</td>
<td>Organize and execute projects</td>
</tr>
<tr>
<td>Faculty Supervisors</td>
<td>Provide guidance and support</td>
</tr>
<tr>
<td></td>
<td>No direct involvement with Clients</td>
</tr>
<tr>
<td></td>
<td>Majority of the assessments</td>
</tr>
<tr>
<td>Course Instructor</td>
<td>Sets course structure</td>
</tr>
<tr>
<td></td>
<td>Final assessment</td>
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</tbody>
</table>

- Clients range from new and small to large and mature
- Projects range widely, e.g., webapps, games, software engineering, etc.
<table>
<thead>
<tr>
<th>Industry Client and Project Variability – Some Examples</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Tiny</strong></td>
</tr>
<tr>
<td>- Hyper-involved, passionate entrepreneurs</td>
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<tr>
<td>- Goals that are not well-defined</td>
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<tr>
<td>- Poor communication skills</td>
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<tr>
<td><strong>Small</strong></td>
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<tr>
<td>- Growing, mid to late stage startups</td>
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<tr>
<td>- Evolving processes and products</td>
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<tr>
<td>- Unavailable contact people</td>
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<tr>
<td><strong>Medium and Large</strong></td>
</tr>
<tr>
<td>- Mid-Sized and large organizations</td>
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<tr>
<td>- Mature processes and established products</td>
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<tr>
<td>- Outsized expectations</td>
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FACULTY SUPERVISORS AND EVALUATION
Standard Structure for Assessment and Evaluation

• Course have a standard structure for evaluation and assessment
• Includes formal milestones and industry-standard documentation types
• Applies to all projects and all teams

• The Faculty Supervisor provides the link between project realities and course requirements
• Turns an internship into a formal, structured learning opportunity
• Helps ensure authenticity
The Faculty Supervisor Roles

<table>
<thead>
<tr>
<th>ROLES</th>
<th>DESCRIPTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>Manager</td>
<td>Maintains accountability; Monitors progress; Not in execution</td>
</tr>
<tr>
<td>Mentor</td>
<td>Provides advice and coaching on courses of action</td>
</tr>
<tr>
<td>Subject Matter</td>
<td>Technical expertise; Management and industry experience</td>
</tr>
<tr>
<td>Expert</td>
<td></td>
</tr>
<tr>
<td>Instructor</td>
<td>Assesses deliverables and assigns marks; Not co-teaching</td>
</tr>
</tbody>
</table>

INDUSTRY CLIENTS ➔ STUDENTS ➔ SUPERVISORS ➔ COURSE INSTRUCTOR
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TWO CASE STUDIES
Case Studies

N.B – these cases are representative scenarios and not examples of actual projects

- Student team formed from disparate parts
- Underestimated complexity of the project
- Engaged Client
- Challenges in team management and interpersonal issues
- Disappointing outcome
- High-functioning team
- Lots of assets in place with engaged Client, Supervisor subject matter expertise alignment
- Low complexity project
- Team set a low bar and did leverage assets to exceed expectations

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DISCUSSION QUESTIONS
Assessment

• From your perspective, what should happen for evaluation of these teams?
• How do we ensure “fair” assessment and evaluations while accepting, expecting and even embracing the variability we have in Clients and their projects, in teams and in Supervisors?
• How could/would these ideas be applied in your own context?
APPENDIX

“You learn no matter what happens”
Kolb and Experiential Learning

• Experience is a source of learning and development (Kolb, 1984)
• Other learning theories (e.g., rationalist, cognitive) give prevalence to “acquisition, manipulation and recall” (p. 20)
• Kolb doesn’t isolate experience from other aspects of learning
• Instead he offers a holistic perspective including abstraction and reflection
Kolb’s Experimental Learning Model (1984)

• The learning process can be divided into four stages
• To learn effectively, learners should spend time in each stage, generally starting from Concrete Experience
Team-Based Learning

• Team-based learning is desirable and necessary in a complex, multidisciplinary, multi-faceted science and technology field like computing

• We allow teams to be form based on student preferences as we believe that this would add cohesiveness

• We allow students to choose their project as we believe that this would add motivation and interest
Essential Principles of Team-Based Learning

Michaelsen, 2003

1. Groups must be properly formed and managed
2. Students must be made accountable for their individual and team work
3. Group assignments must promote learning and team development
4. “Students must have frequent and timely feedback” (p. 28).

Our Observations

5. High level of motivation and interest with respect to the subject matter for each team member
6. The existence of a team member who takes an ad-hoc leader role during the time of the project, who would be respected and followed


School of Computing

Thank you!

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