Teaching Project Management Principles in an Online Environment

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The nature of Project Management and initial perceptions

Which is the dominant characteristic of Project Management?

• The management of *tasks and techniques* or

• The management of the *people* that perform the tasks.

The former is relatively easy to teach and learn in face-to-face & online modes; skill in the latter may not be so readily transferred outside a face-to-face environment.

Initial Perception: Project Management soft skills cannot be learned as effectively in an online environment as in face-to-face modes.
# Teaching Project Management Principles in an Online Environment

<table>
<thead>
<tr>
<th>Classroom learning</th>
<th>On-line learning</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Advantages</strong></td>
<td><strong>Disadvantages</strong></td>
</tr>
<tr>
<td>- Immediate feedback</td>
<td>- Lack of immediate feedback in asynchronous e-learning</td>
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<td>- Familiar to instructors and students</td>
<td>- Increased preparation time for the instructor</td>
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<td>- Motivates students</td>
<td>- Not comfortable for some people</td>
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<td>- Cultivates a social community</td>
<td>- Potentially more frustration, anxiety, and confusion</td>
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<tr>
<td><strong>Disadvantages</strong></td>
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<tr>
<td>- Instructor-centred</td>
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<tr>
<td>- Time and location constraints</td>
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<tr>
<td>- More expensive to deliver</td>
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The nature of the conflict

The theory of virtually any topic can be taught effectively using online methods. However, the value of the theory is compromised when not supported by competent practice skills.

Tutorials and in-class exercises provide the ‘practice’ element in face-to-face environments. The challenge was how to provide this practice in an online environment where students are dispersed across multiple time zones.

Students choose on-line learning because they seek flexibility; therefore you cannot mandate synchronised learning activities.
Reflective practice

Studying one's own methods to understand what works best

Plan (analyse and predict)
Do (execute)
Study (check)
Act (standardise or improve)

The 'Deming Cycle', adapted from W. Edwards Deming
Student preferences

UNITEC Institute of Technology shifted a Web Design course to online format.

• Students reported it was difficult to work in groups.

• Teachers found that the lack of immediacy and face-to-face interaction made it more difficult to identify and deal with problems in a timely manner.

469 computer students doing Australian degrees in SE Asia.

• Students preferred face-to-face communication for instant feedback and resolution of study problems, as well as for motivation to study.
Real-time vs asynchronous delivery

Online courses can be designed for real-time or asynchronous interaction

• *Real-time* is where all students need to arrive ‘in class’ at the same time.

• *Asynchronous* uses a stand-alone set of lessons that students can work through at their own pace.

Example from UNSW Master of Business and Technology (2005)

• Students were to develop PM skills through a web-based course.

• Strategies included virtual project teams with students from diverse backgrounds working in different time zones.

• The course was ‘extremely successful’, with feedback from students indicating an increase in their knowledge and skills.
Encouraging student participation

The Project Management course underlying this research is based on a ‘constructive alignment’ approach to instruction, in which consistency and logical relations exist between learning objectives, learning and teaching arrangements, and assessment.

Online discussion forum technology is a feature of the course.

• The individualised nature of asynchronous, online learning should, in theory, lead to greater student engagement as students have a greater role in the timing and depth of their learning; however...

• This may in reality encourage lower levels of thinking and discussion than what might occur in physical classroom environments.
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Example discussion forum

Submission Process
by Matthew Broderick - Tuesday, 19 January 2010, 09:22 AM

Can you advise the time frame on the marketing submission to business managers?

Our next meeting will be in two weeks.

Re: Submission Process
by Sandra Bullock - Tuesday, 19 January 2010, 10:39 AM

The marketing submission needs to submitted to the business managers by the end of next month.

That gives us 4 weeks after the meeting to fine tune everything.

Re: Submission Process
by Matthew Broderick - Tuesday, 19 January 2010, 09:43 AM

We need to prepare the financial statement and background research information later this afternoon. Tom Hanks will chair the next meeting.
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Results: Student engagement in learning

Perception that online resources actively engaged students with their understanding of Project Management concepts and principles.
Results: online discussion boards and group reports

Interaction with other students via the discussion forums engaged students in understanding PM concepts and principles.

The group report activity actively engaged students in their understanding of PM concepts and principles.
Quotations from students

• “The tutorial boards helped me to fully understand parts of topics that I was unsure of by having a multitude of answers written differently. It also helped me see topics from different perspectives…”

• “The interactivity made it an enjoyable experience.”

• Less assertive students have the “opportunity to ask questions or bring up topics that they may not otherwise contribute in a classroom environment.”

• The online discussion facility “provided an effective weekly learning platform for me to gather information while engaging in debate and discussion.”
Results: alternative online technologies used by students

- Email
- Discussion forums
- Online chat
- Telephone calls
- Teleconferences
- Video conferences
- Physical meetings

General Communication with Other Students
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Results: alternative online technologies used by students

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- Discussion forums
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- Teleconferences
- Video conferences
- Physical meetings

Legend:
- General Communication with Other Students
- Production of Business Report
Additional online technologies assist students with learning

Email and discussion forums (asynchronous technologies) were provided as part of the course.

Students were asked how additional online technologies, if used, assisted them with their learning.

The uptake of additional technologies was variable, with values up to 71% for teleconferences (a real-time technology) organised by the students independently of the course provisions.
Conclusions

The evidence is that:

- Strategies such as asynchronous participation allow students to engage at their own pace and on their own timetable.

- Assessments that force students to participate in weekly discussion forums and to engage with their peers have been successful.

- Inclusion of opportunities for synchronous delivery for some elements of the course is justified where collaboration is required.

- Students who choose to study online because their work or lifestyle choices obviate regular attendance at specified dates and times, will likely also choose to attend real-time sessions and virtual meetings.
Conclusion

The evidence is that:

• Online courses that have been set up to simply *mirror* the classroom format using technologies such as podcasts and audio streaming to replicate lectures are not likely to be so successful.

• There is recognised value in sharing knowledge and learning with other course participants - a benefit not likely to be readily realised in predominantly lecture-style courses.

• The ongoing use of the ‘group report’ assessment as a facilitator of students’ engagement in their learning of project management practice is generally validated by the students.
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Post-research observations

• 100+ students undertake this course each year.
• Students quickly master the asynchronous online technologies.
• Students are hesitant at first about group work, however express very strong support once they realise how much they have learnt about working in virtual teams.
• The online students achieve (on average) 5% higher grades than on-campus students doing equivalent courses.