Using Project Management Principles to Enhance Online Project-based Learning

Shahron Williams van Rooij, PhD, C.D.E.P., PMP¹
Assistant Professor, Instructional Technology Program
George Mason University
E-mail: swilliae@gmu.edu; URL: http://it.gse.gmu.edu

Background/Context

One of the challenges of project-based learning is determining how much structure to apply to the course project. On the one hand, a key feature of project-based learning is learner control of the process, affording team members the opportunity to design, develop and execute their own vision of what both project process and product should be. On the other hand, it is the instructor’s job to provide the appropriate amount of scaffolding to motivate learners, reduce task complexity, provide structure and reduce learner frustration (McLoughlin & Luca, 2002). An additional layer of complexity is added when the class is totally online and project teams are virtual teams. However, there is little evidence about the effectiveness of the project management methodology in providing the conceptual and procedural scaffolds (Kao, Lehman & Cennamo, 1996) that would enable enhance online project-based learning processes and outcomes.

Research Questions and Methods

The purpose of this research was to assess the extent to which processes and procedures from the discipline of Project Management facilitate intra-team communication, project outcomes and the overall project team experience. Specifically, the study compares the project experience in two online graduate Instructional Technology course sections that addressed identical content but in which one used tools and templates from the Product Management Body of Knowledge (PMBOK) while the other used different scaffolding tools to support the team projects. The research questions and associated methods were:

¹ Copyright Shahron Williams van Rooij 2007. This work is the intellectual property of the author. Permission is granted for this material to be shared for non-commercial, educational purposes, provided that this copyright statement appears on the reproduced materials and notice is given that the copying is by permission of the author. To disseminate otherwise or to republish requires written permission from the author.
<table>
<thead>
<tr>
<th>Question</th>
<th>Method</th>
</tr>
</thead>
<tbody>
<tr>
<td>• What similarities/differences in team interactions take place over the analysis, design, development, implementation and evaluation phases of the project for teams using project management methodology and those not using that methodology?</td>
<td>• Content analysis of team discussion boards</td>
</tr>
<tr>
<td></td>
<td>• Mapping of discussion themes to project lifecycle</td>
</tr>
<tr>
<td>• Do teams using project management produce higher quality products than teams not using that methodology?</td>
<td>• Scoring of project products using pre-published Rubric</td>
</tr>
<tr>
<td></td>
<td>• ANOVA of project product scores</td>
</tr>
<tr>
<td>• Do teams using the methodology have a more positive team experience than those not?</td>
<td>• Student Assessment of Learning Gains (SALG) surveys</td>
</tr>
<tr>
<td></td>
<td>• ANOVA of SALG survey scores</td>
</tr>
</tbody>
</table>

**Preliminary Findings**

- Finalizing Charter/Scope requires more “thinking” time than discussion
- Maximum discussion volume surrounding Work Breakdown Structure (WBS)
- Tone of messages “business-like”; message content focused
- SALG scores average greater than 3.75 out of 5.0 on all attributes **except** Helpfulness of *WebCT Chat Room to Project Experience and Helpfulness in Defining Team Roles/Responsibilities*

**Next Steps**

- Completion of control testing
- Test-control comparative analysis

**References**