

Designing a self- and peer-assessment method to grade equitably and reduce social loafing in groups

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Introduction

This session describes the design of the materials used to implement a method of collecting self- and peer-assessment data from students working together in long-term group projects. The method was adapted from existing methods (Tucker & Reynolds, 2006) as an effort to increase the accuracy with which credit is awarded to group members for the efforts they contribute to the product.

Context

When tasked with designing and delivering two full-semester courses with intimidating technical content to an audience with little or no related background, the author was apprehensive. Thinking back upon his own introduction to the content, he recalled that some people seemed to grasp the content almost immediately while others struggled, leading him to believe that working in groups would provide learners with support and the differences in their abilities would thrust those at lower levels into the Zone of Proximal Development (Vygotsky, 1978) where learning occurs.

The Problem

In the author's experience, the group work often elicits groans from the students who express concerns about "free riding" or "social loafing," the situation where one or more group members do not contribute their share of effort towards the product (De Vita, 2001). Moreover, in previous classes he found that he

had limited ability to act when approached with such concerns because it was always her word against his with little additional data to work with.

The author wanted a glimpse of what actually went on inside his groups of students.

Design and Development

Having found other methods ineffective, research led to a method of regular self- and peer-assessment employed to combat this problem in architecture design studios (Tucker & Reynolds, 2006). This session describes the extension of such a system to provide formative data to an instructor using group work. Each student in their architecture studio allocated a percentage of the final grade to each member of their team (including themselves).

Employing his experience as an enterprise software developer the author designed and built a web application to capture and present self- and peer assessment data. He also drew upon his study of Human-Computer interaction design for guidance regarding the user experience.

At a minimum, the application had to enable students to allocate group members' contributions once weekly. These reviews must

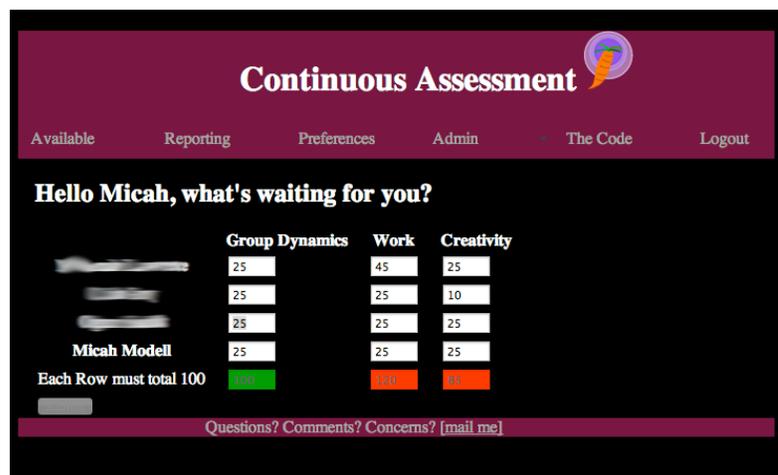


Figure 1: Assessment Page

be kept confidential and students must have confidence in the security of this information if honesty were to be expected. A secondary, but important concern was for the user experience: minimize demands on students with reminders and immediate feedback when possible (see figure 1).

Design Meets Reality

Design continued long after development started: the design and development cycles were not *iterative*, but *simultaneous*. When considering how to present this additional weekly task, the author recognized the formative assessment potential and made data visualization for the instructor's use a priority. This shift was so important that the planned summary calculations for terminal grading were never implemented.

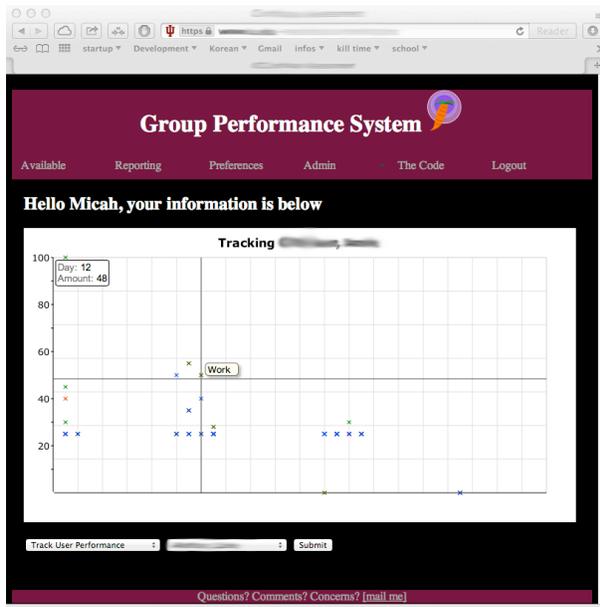


Figure 2: Reporting

Beginning with the recognition that while all students are expected to put in the same *effort*, the type of effort should vary. As a result, the author instituted 3 categories of effort to account for individual strengths and weaknesses.

Discussion

This project provided the author with both a method and a tool for providing a measure of visibility into group work. It also served as a vehicle for considering group work and the difficulties it represents for students. Taking this a step further, it has opened the authors eyes to avenues for research regarding assessment of often overlooked performances and aspects of performance.

References

- De Vita, G. (2001). The use of group work in large and diverse business management classes: some critical issues. *The International Journal of Management Education*. Citeseer. Retrieved from <http://citeseerx.ist.psu.edu/viewdoc/summary?doi=10.1.1.202.6611>
- Tucker, R., & Reynolds, C. (2006). The impact of teaching models, group structures and assessment modes on cooperative learning in the student design studio. *Journal for Education in the Built Environment*, 1(2), 39–56. Retrieved from <http://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.96.4868&rep=rep1&type=pdf>
- Vygotsky, L. S. (1978). *Mind in society*. (M. Cole, S. Scribner, V. John-Steiner, & E. Souberman, Eds.) (p. 159). Harvard University Press.