

Name of Principle Investigator: Douglas Summerville

Project Title: Developing a Technology Platform to Support Blended-Online Learning

1. Please consider the original timeline and deliverable targets. How is your project progressing compared with the original estimates?

The project is on schedule for completion by June 30th, 2014; with more than half of the project's core goals met. One of the three main deliverables, a set of software geared towards rapid marking of in-class work, has been fully completed, piloted, and integrated into our local campus infrastructure.

As the project has progressed, we've decided to effect several minor schedule changes, which should allow us to more efficiently pursue our end result. Based on some of our experiences working full-time with a graduate student over the winter break, we've decided to move our target completion date to June 30th, adjusted from our initial projection of May 31st. This adjustment will allow us to work with a single graduate student full-time during the weeks after classes end, rather than incurring the overhead of hiring and training a second graduate student, and will allow us to evaluate the utility of our modifications via use in online summer courses.

Based on feedback regarding the needs of the local campus faculty, we've also modified the order in which we're completing the online and offline assessment grant deliverables. As our conversations with local faculty members have indicated a more immediate need for customized offline assessment, we've concentrated our immediate focus on that area.

2. How is spending progressing when compared with the original budget estimates?

Current other-than-personnel spending (OTPS) is progressing in line with our original estimates: all hardware costs have been expended; and all remaining OTPS funds are allocated to cover travel costs related to the CIT conference, as documented in our budget narrative.

Personnel spending thus far has largely been funded by the local campus' matching funds; which have only recently been fully expended. As no local-campus matching funds remain, remaining personnel spending will be charged to our grant account; our current estimation of remaining expenditures is close to inline with our original budget estimate.

3. Please provide feedback regarding your experience with the project execution. In particular, any issues or roadblocks you've encountered that may have been unexpected.

Overall, the project has been proceeding smoothly; significant experience with the requisite development methods and platforms have afforded us a fairly good knowledge of what to expect. As a result, we've encountered very few technical roadblocks; though we have encountered a few minor hindrances when working with the Moodle open-source community.

A fair amount of subtlety is required when trying to ensure the long-term longevity of a project via open-source partnerships, as it's easy for a team to develop a technical vision that differs from the visions of open-source community members. One of our goals has been to produce deliverables which are well-integrated with existing assets from the Moodle learning environment, and which could be supported and expanded in the future by open-source developers. In many development cases, this goal entails modifications and improvements to Moodle's open-source core. In a few, rare cases, implementation of our new features has required the development of a technical consensus from individuals across Moodle's international development community; a process which can take amount to days or weeks of discussion and code exchange before an individual implementation can be finalized.

4. What are your positive observations or pleasant surprises about your team's interaction or project process that might would be helpful to other PI's?

As our project entails significant contributions to an existing open-source project, we're able to leverage a great deal of existing infrastructure---including communications and organization systems, code standards, and development procedures. As a result, we've been able to easily communicate our developments with the community; and have had the opportunity to receive constant community feedback, especially as we've made and suggested modifications to the core Moodle open-source platforms. Communicating via this open infrastructure has allowed us to implicitly involve members of the open-source community---furthering our project's goal of fostering open-source partnerships.

For other PIs working with or creating open-source software, we strongly suggest examining the tools and existing infrastructures developed by open-source projects with similar goals, as they can provide a basis for developing interaction methods that work well across large distances. As an example, Moodle's existing infrastructure and procedures allow its developers to work across timezones and continents--- similar (and potentially more advanced) systems will likely exist for many other open-source projects.

5. Please describe any challenges you've encountered working with your project team that you've found solutions for that might be helpful to other PI's.

An unfortunate downside to working with a large-scale open-source model is an increase in the overall procedure---and thus length of time--- required to make any significant change to the existing base. In some cases, questions of implementation methodology can require long periods of discussion; which can impede the rapid development and testing of new features.

In our development work, we've been able to mitigate these procedural overheads by adopting a “dual development” methodology, in which we commit our primary development efforts towards a local “fork” codebase, and merge our changes into the open-source core once community consensus has been reached. In some cases, this requires redevelopment of small pieces of interfacing code to ensure our newly-developed code is fully compatible with the core once community consensus has been reached, but avoids the significant overhead involved in stalled development.