Biomodd: A Case Study In Combining Online Learning With On-Site New Media Art Practice

Al Francis D. Librero
University of the Philippines Open University
alfrancis.librero@upou.edu.ph

Diego S. Maranan
University of the Philippines Open University
Simon Fraser University
diegom@sfu.ca

Angelo Vermeulen
Sint-Lucas Visual Arts Ghent
University of the Philippines Open University
angelovermeulen@inbox.com

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Abstract

Biomodd is a new media art project that integrates cross-cultural dialogue, ecology and technology while encouraging innovative collaboration. The project started in 2007 in the United States, and has since spawned multiple versions that have been built both by the people that originally came up with the idea, and by other communities throughout the world. During its run in the Philippines, a team was formed to build an installation that went on display was exhibited in two cities in the Philippines. The UP Open University, in return for its sponsorship, employed the project as a springboard in a course for students to explore and practice new media art. Since Biomodd involved a series of on-site workshops and classroom sessions, the challenge was to find a way to engage students despite their ability to physically attend the workshops. This was addressed through the use of various online applications to accomplish tasks outside the construction of the art installation. Communication was coursed through several avenues, including the university's official learning management system, text messaging, mailing lists, online photo albums, personal blogs and mass media. Through an analysis of the exchanges conducted through these various channels of communication, we show how learners and course facilitators were able to build and sustain a sense of community, as well as connect with external stakeholders who enabled learners to extend their exploration in new media art practice as shaped by their experience of working on Biomodd, thus constituting a highly enriching learning experience.

Key words: new media art practice; collaborative learning; online learning; blended learning; community building

Introduction

A number of issues affect the effectiveness of online learning environments. These issues range from differences in the experience of reading text from a digital display and as printed material, the lack of social interaction possibly leading to a sense of being physically isolated from the rest of the class, to the challenge imposed by how technical know-how can vary

from person to person, or even the occurrence of the digital divide. Futhermore, academic online learning generally still follows pedagogic designs favoring traditional classroom based learning (Peters, Taylor and Doi, 2010). Blended learning techniques were developed to address the issues surrounding online learning.

Blended learning is the combining of online learning with more traditional methods of learning and development (Thorne, 2003). Heinze and Procter (2004) defines the concept as learning facilitated by the effective combination of different modes of delivery, models of teaching and styles of learning, and founded on transparent communication amongst all parties involved with a course. At the UP Open University (UPOU), blended learning involves the use of online tools and systems in conjunction with classroom and laboratory-based face to face sessions.

In this paper, we describe how blended learning shaped the teaching and learning experiences of participants of Biomodd [LBA[2]], a collaborative art project about the symbiosis of nature and technology which was used by the UP Open University as an educational platform in its Bachelor of Arts in Multimedia Studies (BAMS) program.

Biomodd as Learning Platform

Biomodd is a collaborative art project conceived to challenge presumed notions of opposition between nature and technology in different cultures throughout the world. The project started in 2007 during an artist residency of Dr. Angelo Vermeulen at The Aesthetic Technologies Lab at Ohio University, culminating in an interactive, large-scale installation piece. Since then, multiple versions of the installation have been built by the artist, by his collaborators, and by other communities throughout the world. Biomodd art works have been created and exhibited in the United States, the Philippines, Belgium, Slovenia and New Zealand.

Biomodd is collaborative on multiple levels. The project leads work with teams in which every individual is encouraged to add something substantial to the work. Furthermore, the work is recreated in different places throughout the world, each time with different groups of people.

Additionally, Biomodd is predicated on a basic set of themes (Vermeulen and Maranan, 2010):

1. Case modding and hardware hacking – Biomodd's name derives in part from the practice of *case modding*, the creative transformation of computer cases into imaginative structures. Biomodd draws upon the codes and methods of the case modding subculture, transforming multiple, networked computers into an expanded sculpture featuring an ecosystem that lives with the electronics.

2. E-waste and its creative reuse – Old hardware is reused in Biomodd functionally and aesthetically.

3. Digital games and gaming culture – Each Biomodd installation can function as a gaming platform for a fully functional multi-player environment. The games that are employed are either modified open source games or new games developed by team members.

4. Symbiosis between electronic and biological systems – Biomodd aims to bring biological life as physically close to the electronics as possible, and allow them to communicate with each other through meaningful symbiotic relationships.

5. Juxtaposing the local and the global – Biomodd is nomadic. Versions of the installation are built with different collaborators and new materials, but they reinterpret the original concept according to local cultural and social conditions.

6. Open sourcing – Biomodd encourages the use of open source operating systems and software applications in order to extend the modification potential for the art work as far as possible. The Biomodd project as a whole has also taken an open source nature; people interested in building their own version of the installation can find instructions online.

The novelty of these themes within the intellectual and cultural context of the UPOU learning community provided avenues for leveraging Biomodd as a springboard for learning, particularly when they are considered along with Biomodd's explicit emphasis on dialogue and collaboration. In 2008, UPOU partnered with Dr. Vermeulen to develop a course on new media art practice, Multimedia Studies 198 (MMS 198), based on the emerging Philippine version of Biomodd, which has been known as Biomodd[LBA[2]] since then . The challenge lies within the juxtaposition of on-site practice as required in Biomodd [LBA[2]] with open and distance e-learning.

Teaching Method Used

A total of 24 students spanning across two course offerings were involved during the entire Biomodd[LBA[2]] project.

A number of courses in UPOU facilitated in blended mode which are positively received by learners. Librero (2010) found that a combination of online tools, multimedia content and face to face sessions enhanced the academic performance of students in a skills-based course in which almost 80% of the learners in the class believed that their learning experience and outcomes would have turned out very differently had the course been fully online. However, the paper did not study the students' abilities to creatively explore the limits and opportunities provided by the tools and materials of their craft in order to create novel and valuable artifacts—a key feature in creativity and artistic practice (Boden, 1999). MMS 198's attention to skill-development as a foundation for artistic practice was the first of its kind within UPOU.

Because MMS 198 was offered as a course in new media art practice, students were expected to participate in the process of taking an artistic vision from concept to execution. Students were assessed on the following criteria:

1. Contributing a minimum number of hours working on the Biomodd installation (e.g., designing the sculpture, choosing and sourcing materials, building specific components of the sculpture), with direct, face-to-face supervision of the faculty

2. Designing, building, and/or writing a detailed proposal for a new media art project based on the Biomodd themes

3. Participation in online and face-to-face discussions around issues raised in assigned readings on new media art, as well as issues directly related to the design and construction of the Biomodd installation

The core of the course was delivered via a series of face-to-face workshops on hardware hacking, plant care, game design, and open source software configuration. However, a wide variety of multimedia and online tools were also employed to support the rest of the goals of Biomodd[LBA^2].

1. Discussions through the Biomodd mailing list and UPOU's course management system focused on the design of the various components of the installation .

2. Collaboration tools such as Google Docs and Google were used to manage complex scheduling requirements, track hours, centralize design documents, consolidate students' public blog entries, and provide instructor feedback to students.

3. Learners and course instructors used Facebook, Twitter, and other social media services to raise public awareness of the project, seek financial and structural support, and locate hardware.

4. Online media sites, particularly Youtube and Picasa, were used as a repository for photographs and videos taken by community members to document the project's overall progress, share prototype development, and promote the project.

These tools served a number of purposes. For the rest of the Biomodd-related activities, they serve as promotional and documentation material, as well as an effective means of communicating regardless of distance. For the MMS 198 class, they also serve as learning tools and resources and a means to make up for absence to any or all of the face to face workshops.

While not explicitly required, students were encouraged to blog about their experience with the course and the project.

Community Building

Biomodd espouses the idea of building a diverse active community of people from different walks of life with interests in the fields of art, technology, gaming and ecology. This community, in turn, drives the continued promotion and development of the project. Ideally, this creates a cyclic phenomenon enabling constant growth and development.

This is of great benefit as a support platform for the students. A sense of community among UPOU learners has been known to fuel a higher level of interactivity and collaboration that carries over in academics (Villanueva and Librero, 2010). Furthermore, blended learning itself has been found out to be capable of producing a stronger sense of community over the typical full online learning (Rovai and Jordan, 2004) employed in most UPOU courses. This sense of community formed within the course, in turn, reinforces the larger one around

Biomodd itself, creating synergism, ultimately resulting in exceptional academic performance.

The Learning Experience

In a post-hoc summative evaluation of student performance, we observed that both instructors and learners went through a four-stage process of dealing with the relationship between a high-level artistic vision, and the limitations and opportunities of the materials and tools for artistic expression (i.e., the *artistic media*) of artistic expression that impinge on or enrich the original vision.

1. Naïvely sophisticated: Learners proposed deeply creative ideas without knowing how feasible they are given the available artistic media.

2. Paralyzed: Learners realized that their artistic visions are non-viable and are unable to reformulate new ones.

3. Explorative: Instructors provided learners with simple, exploratory activities that allow the learners to understand the fundamental properties of the artistic media. These activities sometimes merely replicated existing, non-novel ideas.

4. Empowered: Learners reformulated the relationship between artistic vision and their understanding of the artistic media. They demonstrated their artistic intent in physical, aesthetic artifacts with novel form factors.

The choice of a blended learning environment enabled students to explore and transcend the experience of each of these steps. For example, the email discussions provided a rich forum for learners to deeply articulate their wild ideas while they were in a state of naïve sophistication. When the learners were in a state of artistic paralysis, the hands-on workshops were crucial in helping students attain artistic empowerment.

While four students did not finish the course, the remaining twenty exhibited a remarkable level of academic performance. Most of them logged in hours much more than what was expected of them. Majority of the students opted to create a project as a group which was larger than what was initially anticipated and had its own exhibit in a major event in the Diliman campus of the University of the Philippines in parallel with the actual Biomodd[LBA[2]] exhibit elsewhere.

Encouraging a learning atmosphere with a community feel was very beneficial. While very difficult to quantify or qualify at face value, it is manifested indirectly through other outcomes. Among assessed student output, the most visible evidence is through their blogs and other communiqués – passionate and even argumentative messages, discourses, comments and suggestions. All of these point to a definite sense of community, not just within the group of students, but also of them with the rest of the Biomodd team.

Conclusion and Recommendations

On top of making productive and passionate team members throughout the duration of Biomodd[LBA^2], results have indicated that the teaching method employed in tandem with a strong sense of community among learners have a significant positive effect on learner academic performance. However, there may still be room for improvement in the overall course design.

While a mortality of four out of 24 learners is relatively small, it is still too significant to be ignored. It may be worthwhile to investigate the circumstances of their dropping out in order for future offerings of the course to be more accessible to the range of learners in UPOU's BAMS program.

Computer gaming is an integral part of Biomodd. However, it was the only theme not employed in any meaningful manner as a learning tool within the course. Rectifying this possible shortcoming may further improve the overall learning outcome.

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