DESIGNED LEARNER INTERACTIONS IN BLENDED COURSE DELIVERY

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ABSTRACT

In transitioning to a hybrid delivery model, faculty are presented with an opportunity to engage in a systematic instructional design process which can bring coursework in line with pedagogical best practices that may not exist in traditional face-to-face classes. This paper presents a model whereby Marist College Academic Technology & eLearning staff focuses faculty attention on designing effective student interactions with content, the instructor, and other students. These interactions promote deeper levels of engagement in student learning.

KEYWORDS

Hybrid, blended, instructional design, interaction

I. INTRODUCTION

The adoption of course management systems and other online teaching tools has the potential to have a transformative effect on teaching and learning in higher education [1], the consequence of which has been an increase in institutional adoption of educational technology [2]. The increased use of technology leads to additional questions about the pedagogical effectiveness of hybrid and online courses. How, for example, do faculty use technology to promote learning? What types of activities are enhanced through the use of technology? These are questions addressed in this article.

A. About Marist College

Marist College is a liberal arts college located in the mid-Hudson River Valley in New York State. Founded in 1929 by the Marist Brothers, the college is now a nondenominational institution committed to developing enlightened students prepared for 21st century work and life.

The 648 members of the Marist College faculty (226 full-time and 422 part-time) offer a diverse set of coursework in 43 undergraduate programs, 12 Master's programs, and 12 additional Certificate programs. Though the majority of the student population is traditional undergraduate (4200 students), the college also has an enrollment of more than 1600 graduate and continuing education students at its various satellite campuses in traditional, hybrid, and online programs.

Marist College is committed to technological innovation, entering into partnerships with industry leaders such as IBM and taking a leadership role in the Sakai open source community. In 2009, Marist College participated in Sakai's Multi-Institutional Survey Initiative (MISI) in which 14 colleges and universities of diverse sizes and locations around the world administered the same technology use survey to faculty and students. In April 2009, all faculty received an email inviting them to participate in the survey. The

survey was anonymous but respondents were invited to provide contact information in order to enter into a raffle. 78 (12%) members of the faculty responded to the survey.

B. Findings and discussion

Despite a rising number of faculty teaching technology-enhanced courses, there remain questions and challenges associated with using these tools in a pedagogically effective manner. Gerdes and Kuhr, for example, found that faculty tend to use these environments more for posting static material and less for fostering communication [3].

The results of the aforementioned Marist College survey showed that nearly one in three instructors (32%) self reported that the majority of their courses used a blend of face-to-face and online teaching techniques. Even with the number of instructors using technology in their classes, the results of the Gerdes and Kuhr study held true. Faculty were asked to assess the value of technology in several teaching activities on a scale of 1 (strong disagreement of value) to 5 (strong agreement of value). Respondents provided an average rating of 4.62/5 for the value of helping course participants access material any time from any location, with 24% responding that this element of convenience was the single most important benefit of using technology in their courses. When asked about improving student to student communication in a course, however, faculty provided an average rating of only 3.70/5, with just 4% responding that this element was of greatest importance.

The results of this survey were part of a multi-institutional survey initiative (MISI) in which the same questions were asked of 14 colleges and universities of varying size around the world. The Marist results were validated by the aggregated results of the MISI institutions: faculty provided an average rating of 4.53/5 when asked about the value of access to course content and an average rating of 3.49/5 when asked to assess the value of using technology to enhance student-student interactions [4].

The aggregated MISI results indicate that faculty tend to value the convenience and efficiency of hybrid learning environments (30.8% and 10.5% respectively) over the value for improving their teaching (8.8%), even while they expressed the value of technology in improving student learning (29.2%)[4]. However, the facilitation of innovative teaching techniques is as important a consideration in the improvement of student learning as the technology itself [6]. Indeed, in order for students to learn effectively in an online or hybrid context, faculty must alter the very way they approach teaching and learning in order to account for the needs of non-traditional students [2].

To help faculty make this pedagogical shift, Marist College has established a professional development workshop, the content of which is the subject for this article. The workshop recognizes that the technological adoption in the classroom is accompanied by barriers and challenges [6] and that these challenges might be particularly confounding for faculty who are experienced in facilitating courses in a traditional, face-to-face environment. An informal survey of faculty who have elected to participate in this workshop found the greatest concerns were challenges associated with managing the learning process without the benefit of constant verbal and nonverbal cues from students, and making personal and meaningful connections with students. In other words, the challenges of greatest concern dealt more with interaction and teaching than with convenience and efficiency.

Despite the range of concerns, there exists for these faculty an opportunity to redesign their delivery model to include pedagogical best practices and learning principles that did not exist in traditional formats [7]. In other words, in transitioning to a hybrid format, faculty can take a critical approach to instructional design, promoting improved teaching and learning in their online, blended, and traditional courses.

The workshop—and therefore this article—considers learning at its core as a series of interactions designed to shape student understands of a particular concept [8]. In traditional settings, these interactions might take the form of students reading a text book, attending a lecture, or engaging in a class discussion. While technology and a hybrid model present additional media (discussion groups, hypermedia) for interaction, the central concept of teaching as facilitated designed learner interactions remains constant [9].

This article presents a model for conceptualizing these redesign efforts by focusing faculty attention on sound principles in three areas: learner-content, learner-instructor, and learner-learner interactions. The 2008-2010 Quality Matters rubric—an assessment tool for exploring quality in online and hybrid courses—also notes as an essential standard the presence of learning activities that foster these three levels of interaction [10]. By exploring these three design components, faculty can promote sound instructional design that further engages students and allows for the hybrid model to more effectively facilitate student learning.

II. LEARNER-CONTENT INTERACTIONS

Among contemporary debates in the field of modernist education is that of a traditional versus a critical approach to learning activities. Traditional approaches—even when learner-centered—still focus a great deal of attention on positivism, a belief that knowledge is obtained through scientific observation. Rooted in a behaviorist tradition [11], a learning activity promoting a single correct answer that relies on a specific set of values or assumptions is positivist in nature. At the other end of the modern spectrum is the activity that falls in the critical realm. A critical approach recognizes that traditional education perpetuates existing social and cultural values and assumptions. Critical emancipation involves an "ideological manipulation" [11] wherein learners are presented with multiple models and are afforded an opportunity to develop their own philosophies that meet their own—or their ideal—cultural and social assumptions.

While many have argued that a more constructivist approach leads to deeper learner, there is a rather important paradox to consider. In traditional courses, textbooks, handouts, and lecture or class notes have been a mainstay of education for the past several hundred years, an indication that these formats still possess some value. Rather than invent entirely new delivery mechanisms, hybrid platforms present an opportunity for faculty to leverage new forms of content to enhance traditional methods that will supply learners with a base of knowledge on a particular subject and to adopt new, more constructivist methods to offer students a hands-on experience they might otherwise not receive.

The model therefore includes two key components in considering learner-content interaction. The first is the availability of instructor-generated or instructor-provided content for students. The second is the possibility of a more constructivist model wherein students would create their own content. In other words, effective instructors are competent in the development of both teacher-centered and student-centered content [5].

A. Teacher-Centered Content

For the purposes of this article, teacher-centered content is defined as the set of learner-content interactions wherein the design calls for students to engage with expert content. This expert content might be of the direct instructor's design, as is the case with instructors who post lecture notes online, or it might be content designed by external experts. Again, MISI results indicated a more traditional use of teacher-centered content. When asked about the value of using distance tools for posting lecture notes after a reading, MISI respondents provided an overall rating of 4.32/5 (4.24/5 at Marist College). Marist respondents also provided an average rating of 4.61 when asked about the value of posting additional online readings. When asked, however, about the value of posting multimedia content or asking the students to retrieve library resources, however, these numbers were lower at 4.12/5 and 3.87/5 respectively [4].

A major focus of the model is therefore on non-traditional uses of technology in developing teacher-centered content. Rather than have instructors develop lecture notes and place them online (a concept survey results indicated they have already been doing) the model instead focuses on the range of potential resources available in a web-based environment. In other words, rather than replicate a traditional class, instructors are asked what new teaching techniques are afforded based on the vast array of internet resources.

A common web-based tool set for communicating information is hypertext. Though hypertext—at its most fundamental—might simply be links to additional web pages and resources embedded within

instructor lecture notes, it is important to look at what these web-based connections might offer. Consider a concept map: in a concept map, students use visualization to stimulate prior knowledge and to draw connections to new knowledge as a mechanism for integrating and scaffolding information [12]. The theoretical foundations that make concept mapping a useful activity also stimulate learning when considering the use of hypertext. Web pages or cognitive units are connected together with hyperlinks that lead to other web pages which themselves contain links to even more web pages, thus forming a web of interconnected units which students are free to explore, creating their own unique paths as they go. The apparently simple approach to organizing information through hyperlinks is in fact quite powerful when it comes to online learning in that it encourages the same connection-building activity described above [13]. To some extent, hyperlinks put the control over the learning process into the hands of the students, allowing them to create a customized set of educational content that uniquely suits their needs. This can be of particular value to instructors as it allows them to provide both remedial content for those students who lack basic knowledge in some areas while at the same time giving more advanced students opportunities to challenge themselves with more complex content.

The value of linked content becomes further enabled when the links provide learners access to images, audio, or video content in addition to simple text. This multimedia content makes it easier for students to visualize complex concepts by manipulating various forms of information [14]. These multimedia tools also accommodate a range of learning styles simultaneously by providing the same learning experience using different types of media [15].

Finally, the model encourages faculty to take advantage of open education resources. Though this model has been widely publicized through the actions of MIT (http://ocw.mit.edu/index.htm) and other institutions that have moved to an open course model, the open education movement is gaining traction among smaller institutions, publishers (http://www.flatworldknowledge.com/), and other resource developers (http://www.merlot.org/merlot/index.htm). In addition to the possibility of activities where students can locate additional remedial or advanced content, the open education movement also has the benefit of promoting multiple viewpoints in education by granting student access to more than one professor [20]. The ability to draw from multiple instructors is in direct contrast to traditional class experience where learners often only have access to one instructor.

B. Learner-Centered Content

In addition to the range of teacher-centered resources available on the internet, there also exists an opportunity for instructors to develop student-centered resources that promote active learning.

An example of this type of activity is a virtual simulation. Virtual simulations provide students the opportunity to engage with systems they might not otherwise have the opportunity in which to engage. [16]. Students studying developing countries do not have access to actively participate in the social and political issues present in such an environment. They could, however, participate in a virtual simulation that provides access to resources and situations that might be faced by individuals in this type of environment (http://www.bized.co.uk/virtual/dc/). Students who are averse to animal dissection or working in an area where access to resources is scarce might participate in a virtual frog dissection (http://dissect.froguts.com/welcome.html).

As with the open content movement, many simulation resources have been placed online and are freely available for instructors. For faculty with more specific needs, there may be a need for a simulations designed specifically for a course experience. Although creating these simulations can be a complex and costly task, it is possible to create resources using simple screen captures and text [18]. Especially given that the value of these simulations is in allowing students create and test hypotheses about real-world situations [19] at low cost and with little depletion of real resources, the media element is often more of a motivational element than a cognitive element. These types of simulations are often best used to provide learners with a unique opportunity to interact with the subject matter, thus turning a passive reader into an active participant in the learning process.

III. LEARNER-INSTRUCTOR INTERACTIONS

A key element that is a focus of hybrid courses is the interaction of the instructor to learner. The core focus of learner interactions is on instructor immediacy within a hybrid course that is, how the instructor provides a sense of connectedness with the learners within a course [20]. It is essential that an instructor give feedback, verbal and nonverbal, to learners in order to facilitate a comfortable learning environment. The existing research has been focused mainly on face to face interactions; however, with the growth of hybrid and fully online courses available at most schools, this area is growing in study [20, 7, 21].

In traditional teaching, the interactions that take place between instructors and their students are so tightly integrated into the teaching process that instructors may not even realize they are happening. Some of these interactions are very apparent, such as when a student raises her or his hand to ask for clarification on something that has been said. But many "interactions" are much more subtle and that is where the sense of instructor immediacy becomes irreplaceable [20].

Instructors can readily engage students by using a variety of methods to interact with learners [20]. For example, students' facial expressions to gauge how well they understood a concept that has been introduced or how the tone in a student's voice tells how confident they are in the answer they just provided can be used to adjust feedback accordingly [7]. But how are these interactions conveyed in a hybrid course? The advantage to a hybrid course is that both the face to face and online components can be leveraged to better enhance the learner-instructor interactions.

Students can easily recall a word or gesture that was conveyed in the face to face component in a course when they are working on the online side of the course. The meaning is that the two levels of instruction can work in conjunction with one another for the learner and the instructor [22]. Thus, interactions between instructors and students, both the obvious as well as the subconscious, play a vital role in the teaching and learning process [7].

There is an increase in time investment for the instructor when teaching a hybrid course or a fully online course as well [22]. The instructor of a face to face course will prepare a lecture and following activity per class session. A fully online course instructor must prepare to have all the lectures, discussions, and activities to take place online. The hybrid course instructor is somewhere in the middle of the two, in terms of time and effort. When designing and implementing a hybrid course, an instructor must decide which activities will be online and which will be face to face, systematically shaping the dynamic of the course [23]. The instructor of a hybrid course needs to leverage effectiveness, engagement, and efficiency in designing a course that invites learner interaction.

To facilitate the learning interactions the instructor must employ the many online communication tools that can bridge the distance and time that separates the instructors, from the students in online courses. Communication tools might include discussion boards, synchronous chat rooms, course announcements and course messages or course email. A primary job for an online instructor is to select which communications tool to use and then "deploy" it effectively in the course.

One such tool is the discussion boards of a course. The use of discussion boards is often referred to as an asynchronous communication tool as the instructor and the students do not need to be online at the same time to communicate. Asynchronous tools are best used for whole class or small group discussions that need to span a period of time (usually a week or two). Discussion boards can be private to a particular group of students so that only they can see each other's posting. This is useful if they are working on a group project. Some instructors even have students or groups of students lead discussion forums, placing them in the role of the discussion facilitator.

In order to involve the learner, discussions in a hybrid course must be closely facilitated and guided by the instructor in tandem with class activities and group work as well [22]. Discussions, in class activities, and group work are essential to ensure the ongoing interest of the learner. Facilitated discussions also aid in helping the instructor to create a perceived sense of high involvement in the course by the students [20]. For example, the discussions that take place in a face to face course, online discussions need

constant feedback and input from the instructor so it does not go off-track. Also, by being a constant presence in a course's online element, an instructor helps the student feel more like a part of a learning community

There is a good deal of evidence that one of the biggest factors in student participation and satisfaction is the amount and substance of the interactions with the instructor [21]. Below are some of the strategies that may be found to be effective in creating high levels of interaction with students in hybrid courses.

Acknowledgement of student work is essential to student engagement and connectedness to the course. When discussing concepts with students in face-to-face classes the instructor likely acknowledges them without even thinking about it [7]. In hybrid/online courses, instructors need to make their acknowledgment more visible to the students so that they are aware of the instructor's "online presence." An instructor could allow students to post responses to each other. Then, the instructor could send acknowledgment messages to individuals; this lets them know they are reading and that they are on the right track.

Instructional feedback on discussions is essential to the course engagement of student and instructor. Online students, especially adult learners, appreciate feedback from their instructors. Feedback, both criticism and praise, help reassure students that they are effectively learning the materials. The instructor should try and provide substantive feedback on the primary forum postings of each student. The instructor may also wish to send out private e-mails to select students who are struggling to provide them with additional feedback or encourage them to participate more often [7].

These are just a few examples of what an instructor can use in their course to keep it engaging for students. The main focus of the model is to have the students feel connected to the course and the instructor as they move through the course content. This is what keeps the learner engaged and motivated to participate in the course and with others in the course.

IV. LEARNER-LEARNER INTERACTIONS

The development of a strong learning environment is essential to a successful learning experience for the learner. A key part of this environment is the learner's interactions with other learners which helps to build a strong learning community [24]. The more effectively a learning environment is created the better the experience is for the learner and the instructor [25]. The learner puts a large value on the interactions they have with their fellow classmates. In order to benefit from the expectations of their students, the instructor needs to move the course from being "Teacher-Centered" to "Student-Centered" learning as they move from the face to face mode to the hybrid model.

When the instructor moves the class interactions into an asynchronous online format there is often a significant increase—or at least an opportunity for an increase—in student-to-student interactions over what is typically found in face-to-face classroom. This increase is facilitated by the communication tools used in the course as they are designed to promote interactions equally among all participants and not only between the instructor and the students [7].

The medium itself is also a factor as learners tend to be much more comfortable "talking" in an online forum than they might in a face-to-face setting [7, 26]. Finally, the asynchronous nature of the communication allows discussions to span larger periods of time than traditional classroom-based courses and also allows students to communicate when they have time (e.g. 2 AM might be a good time for a stay-home mother or father to post some comments).

This increase in learner-learner interactions in online courses can, if used appropriately, be a powerful instructional tool that can enrich learning. Allowing learners, particularly adults, to actively participate in and even lead discussions online can contribute significantly to the entire learning process.

Online discussions can be quite lengthy and, as a result, can take a good deal of time to facilitate and support. By employing different strategies in a hybrid course, the instructor can ensure that the interactions between students produce rich learning experiences that, over time, take less and less effort from the instructor. By employing different strategies in the hybrid/ online course, the instructor can

ensure that the interactions between students produce rich learning experiences that, over time, take less and less effort from the instructor [7].

The instructor can use initial introductions as a vital resource that asks students to post messages introducing themselves to the rest of the class. Introductions help the students get to know each other and also allow students to identify common interests and backgrounds, something that can assist in the community building process. An important aspect of the introductions process is the replies that people receive to their introductions at this makes everyone feel connected with the group [7]. The instructor should encourage students to comment on the introductions and try themselves to post at least one brief comment to each student. A strong online community of learners tends to have much richer interactions, making the instructor job of facilitating the learning process much easier [7].

When a hybrid course first starts, it is important to have a significant teacher presence in the course in order to establish expectations and ensure that students get comfortable interacting with the instructor. Over the duration of the course the instructor should be slowly pulling back from this leadership role and become more of a facilitator As the course progresses, the focus is on posting stimulating questions with the goal of both steering the discussions as well as creating interest and engagement among the students.

Learner to learner interaction also encourages student feedback to one another which leads to a sense of investment in their course learning environment. Peer learning can be a source of support for learners. Students see the value in the flexibility and convenience of a hybrid or online course but often have other benefits for their student interactions [26]. Student satisfaction correlates with their perceived sense of community within a learning environment [21]. The stronger the sense of community, the more satisfied the student is with their online experience due to peer support [21].

V. CONCLUSIONS

The same interactions that are present in face-to-face classes can also be found in hybrid environments. The transition from traditional to a hybrid model presents an opportunity to engage faculty in a redesign process that promotes infusing content with pedagogical best practices and presents improved opportunity for student learning.

Though this article has focused these redesign efforts on three discrete areas of designed learner interaction (learner-content, learner-instructor, and learner-learner), one of the most powerful affordances of a hybrid course is the opportunity for interactions that bridge these three areas. We have noted, for example, the value of virtual simulations that engage students in models designed for hypothesis testing and experimentation. In the real world, however, most of these models do not exist in isolation. Such an activity might be increasingly valuable if paired with a learner-learner collaborative activity designed to have students participate in simulations together or to validate new schema after integrating new knowledge. In other words, the hybrid environment could present an opportunity to present an integration of more progressive and social instructional models.

Numerous studies have noted the barriers to effective implementation of technology-enhanced coursework by instructors at various educational levels [6, 5, 1]. Among challenges noted and validated by the results of the MISI and Marist College surveys was a concern that technology is useful for convenience and efficiency than to enhance teaching. Critical to the redesign process is a realization that faculty—in transitioning courses—have an opportunity to move beyond simple translation of content for efficiency to a more robust model that takes full advantage of the affordances of distance tools in a hybrid course model. In accepting this challenge and critically exploring the learning interactions that take place in the course environment, faculty can develop hybrid courses that make the best use of traditional and non-traditional elements in enhancing student learning.

VIII. ABOUT THE AUTHORS

Dr. Reba-Anna Lee is currently the Assistant Director of Academic Technology and eLearning at Marist College. A California native, Dr. Lee has relocated to the New York Hudson Valley area. Her extensive

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Dr. Lee's interest span from electronic portfolios to faculty technology training and augmented reality usage in the classroom. Dr. Lee is also interested in the research of online environments, training faculty, and innovative technology use in the classroom. Dr. Lee holds a BA in English Literature, an M.Ed in educational technology and an Ed.D. in educational technology.

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IX. ACKNOWLEDGMENTS

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