

The Studio Experience: Educational Reform in Instructional Technology

Lloyd P. Rieber

Department of Educational Psychology & Instructional technology

The University of Georgia

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Introduction

Creating effective educational multimedia requires many people with many skills, talents, and experiences. The abilities needed to complete a successful project are necessarily distributed across the development team. Examples include knowledge of the subject matter, project management, instructional design, evaluation, graphic design, and a wide array of computer tools (authoring/programming, graphics, animation, etc.). No one person can possibly know it all. The increase in web-based forms of instructional materials further complicates this design process, requiring not only another layer of technical sophistication, but often complete rethinking of how instructional materials ought to be designed. At the core of all of this is a creative and collaborative problem-solving process in which members of the team must somehow learn how to work with and rely upon each other.

Unfortunately, graduate programs that prepare people to join these development teams rarely teach this way. Even the most innovative of instructors have difficulty providing their students with authentic and collaborative design experiences under the constraints of the one-course/one-instructor model. All faculty who are serious about their teaching struggle with these problems, but are usually stymied in how to initiate change in their departments or colleges. After all, universities are not known as champions of change when it comes to teaching. Our departmental faculty took advantage of a unique opportunity -- the decision at the University of Georgia to convert from quarters to semesters in the Fall of 1998 -- to reconceptualize our graduate curriculum in educational multimedia design to teach in a way we feel is more consistent with what we know about learning while at the same time is closer to what our graduates will encounter upon graduation. We refer to our new curriculum as the "studio experience" because it borrows, at least metaphorically, from studio models historically found in schools of art and architecture. A brief overview of our studio experience is offered in this short vignette. More information, as well as several detailed papers can be found at our web site (<http://studio.coe.uga.edu>).

Ideas Behind our Design

Two theoretical frameworks have guided our thinking and teaching. First, faculty in our department have generally held a constructivist perspective on teaching and learning. This perspective has philosophical and pedagogical implications beyond the scope of this short vignette (see, for example,

Jonassen, 1991), but, briefly put, is based on several core ideas: 1) learning is an active and controllable process in which meaning is constructed by each individual; 2) learning is also a social activity founded on collaboration and mutual respect of different viewpoints; and 3) learning is embedded in the building of artifacts that are shared and critiqued by one's peers. Second, we have been strongly influenced by the theory of situated cognition and its application in the form of cognitive apprenticeships and scaffolding (Brown, Collins, & Duguid, 1989). This point of view stresses that learning is best achieved through activities embedded in authentic and meaningful contexts. Scaffolding acknowledges that as individuals progress in their skill and experience, they require less structure and guidance. Just as a construction worker uses a scaffold to support the building of a complex structure, such as a stone archway, and then removes the scaffold once the structure can stand on its own, so too would a teacher provide additional support to learning in its early stages, only to gradually remove these supports as a student gains expertise.

Redesign of our Curriculum According to a Studio Model

Many potential problems plague the curricula of design fields such as ours in which the one-course/one-instructor model dominates. For example, instruction is often organized around tools favored by a particular instructor in a given course. Tools, such as computer authoring languages, are often taught according to the tool's structure, not in how it is actually used in a design project. This is akin to learning English by studying a dictionary. An instructor is usually faced with teaching a large group of people in a class that usually meets only once or twice a week. Consequently, an instructor is apt to teach a tool or a set of design skills around some ideal sequence, even though individual differences among the students, or the design needs of their eventual projects, may dictate many other, and better, routes to learning. An instructor of a course taken concurrently or in a subsequent term must assume either that students will be able to apply what is learned in one course to the other or the instructor spends significant time reteaching much of the material -- a difficult call with negative consequences if the situation is miscalculated. Finally, the one-course/one-instructor model isolates students and faculty artificially. The skill of working well on a team cannot be conveyed in a set of PowerPoint slides, but instead must be taught, practiced, and critiqued over an extended period of time.

Our Studio approach addresses many of these problems by adopting a completely different approach where a group of students at various levels of experience and skill with design techniques and tools collaborate and learn from each other in the context of authentic projects. Likewise, instructional duties and tasks are shared among the studio faculty. Our redesign came after two years of intensive discussions and planning involving faculty and students. The faculty most responsible for the final design were Michael Orey, James King, and myself.

The Studio experience consists of one third of our students' coursework taken toward a Masters degree (12 of 36 credits):

- EDIT 6190 Design & Development Tools (3 credits, though repeated for a total of 6 credits)
- EDIT 6200 Learning Environments Design I (3 credits)
- EDIT 6210 Learning Environments Design II (3 credits)

Each course is prerequisite to the next and so, on the surface, this appears to be a standard course sequence. Our structure, after all, had to fit into the University course-based scheme. However, the way in which these credits are completed and student progress evaluated is quite different. I characterize the studio experience as a place where our students learn about design (in general and also instructional) while gaining more and more technical skills (authoring and multimedia software tools) in a very social (formal and informal) setting -- the most and least experienced students and faculty from all the studio courses meet and work together from day 1. Mentoring is a big part of the studio and we use all technological means available to foster communication and collaboration within the studio, including email, the world wide web, and course tools, such as WebCT.

We refer to the first of our studio courses (EDIT 6190) as the "constructionist" course based on the ideas of Seymour Papert (1991). Constructionism shares the philosophical goals of constructivism, but does so under the assumption that learning is achieved through the building of artifacts to be shared in a public forum. This approach can be summarized as "learning by building". Students explore design issues while reading the professional design literature, learning a variety of authoring and multimedia

tools and designing/developing a personally relevant and meaningful project. Students complete one set of contracts to learn certain tools and another set of contracts for completing an independent project. A significant part of this course is reflection about design. Written reflections, tied to the literature, accompany the contracts. We also strongly encourage "design conversations" and desktop critiques of projects (called 'desk crits') while students are engaged in project development. Students in this course propose the criteria for evaluating their independent projects and this is negotiated with faculty. These students are also interacting with all other studio participants during the term, therefore, they are privy to a range of opinions, perspectives, advice, and examples.

The second studio course (EDIT 6200) also involves an independent project, but one that must meet instructional design criteria. EDIT 6190 and our department's instructional design course (EDIT 6170) are prerequisite to this course. Therefore, students enter EDIT 6200 armed with an introductory set of computer and design skills from EDIT 6190 and a introductory set of instructional design skills from EDIT 6170 and are given the task of applying these in the creation of an independent project while being exposed to additional design literature specific to their project specifications. The project must be web-based and involve a significant interactive component. These students also play a role on the EDIT 6210 Team projects, as per the next paragraph.

The final studio course (EDIT 6210) involves completion of a substantial educational multimedia project in a team. The selection of teams and project ideas is interesting and we use the metaphor of a "job fair" to describe it. Any organization that has a viable problem or project idea can be a client. Clients send us their "job ads" whenever they wish and we post these immediately on the Studio web site. Students are encouraged to start thinking about next semester far in advance. Teams are formed based on certain the projects that students (usually 1 or 2 at first, following by "behinds the scenes" discussions and persuading). Team leaders accept "applications" from prospective team members -- some projects get more applications than positions available (and so some are turned down) whereas others get few or no applications and the project risks not being staffed and these students must instead join another group. This job fair is an interesting start to each semester. Faculty only step in assign people if absolutely necessary. All studio participants get involved in these team projects to some extent, though only the EDIT 6210 participants themselves are responsible for the project's completion. Other students are viewed as "consultants" or "contractors", providing help or assistance but without any long-term obligation. This seems to be a good way to mentor students as they think about their role as EDIT 6210 project leaders by giving them good and bad examples of team practices.

Assessed Outcomes

We give traditional grades to students enrolled in the respective studio courses based on faculty evaluations of individual and team projects and completion of other studio requirements. However, several other evaluation means are used to prepare a student to become a practicing member of the professional community.

Studio Showcase. The culminating event held at the end of each term is the Studio Showcase. Holding a public display of professional work is a hallmark of studio-based models of learning. In our case, the showcase resembles a professional conference in which all individual and team projects are presented. Students know from the beginning that this event will be announced to the entire university and it is conceivable that the University's President might attend (so far, he hasn't). Students likewise know they must meet the expectations of their immediate professional community and their peers. A public showcase involves a different class of motivation and attention on the part of a student than completing a project solely to meet the expectations of one person, that of the instructor.

Comprehensive Exams. The studio experience requires participants to read extensively from the professional literature, but we do not give exams. Instead, students are expected to participate in online discussions of the readings and integrate this literature into their design documentation. All participants enrolled in the final studio course (EDIT 6210) must also complete a comprehensive exam that explores each individual's competency with the professional literature. This oral exam is quite rigorous and resembles the classic final oral exam of a graduate degree. The exams are conducted by a committee consisting of studio faculty and doctoral students from our department. Anything from the professional literature covered in any of the candidate's coursework to date (not just the studio) is fair game for questioning. Students know they cannot fake their way through this exam and that the best way to prepare is to take all readings and discussions seriously.

Lessons Learned

1. We knew while we were planning the studio concept that it would be impossible to anticipate everything we would need to do. Even though we prepared a 50-page handbook for the very first Studio meeting, we understood that the structure would need to be revised continually. We likened the process to writing a new constitution for a government and knew that many amendments and "laws" would need to be created or abolished as the experience unfolded. This perspective has given us freedom to be critical of what we are doing and to not hold anything too sacred from one term to the next. Student input has been critical to our initial evaluation of the Studio and many of the changes so far have been a direct result of their feedback.
2. Make no mistake, it is hard work being one of the Studio faculty. It is very difficult at first to co-teach with other faculty. Each instructor must be open to different teaching styles and work habits. Most of all, studio teaching requires a very different management style than in the one-course/one-instructor model and we have finally had enough cycles of the studio experience for faculty and students to start to feel comfortable with a different management style.
3. A good studio needs good resources. Like all departments relying on technology for our curriculum, we face the problem of keeping our resources up-to-date. Our faculty wrote many grant proposals and we were fortunate to have one of these proposals funded by the University of Georgia for new hardware and software for one of our labs. We do not require students to purchase their own computer, but virtually all do. Faculty and students seem to agree that it is almost impossible to be a viable professional in our field without making this investment. Our biggest concern is to find funding to keep our software resources current, given the speed at which new versions are released. We have received the promise of a modest amount of yearly financial support from our local school (our college is divided first into four schools within which all of the departments are housed) of a few thousand dollars. This is helpful but insufficient. Frankly, we remain confused as to why the software industry fails to make their products readily available to the university community as we prepare professionals to use their products. We think the time has come for universities to exert their collective weight on the software industry on this issue.
4. We are just beginning to learn how to tap the most important mentoring resource -- other students. There has been a natural and steady increase in students relying on other students for information and skill development. The studio experience not only seems to facilitate the informal stuff that always happens, but we also have been able to formalize this mentorship in various ways. For example, our students have a service requirement of providing at least 10 hours of service to non-profit groups. Some perform this in schools or other community centers, but many choose to perform their service in the studio itself. Experienced students are free to offer workshops and seminars and lead online discussions of the Studio readings and they get "service credit" for doing so. We also now require experienced students to perform the role of "counselor" for students just starting the studio. Also, as students take advantage of the opportunity to learn tools that they feel are most relevant to their needs, they, not the faculty, are becoming the "studio experts" in these tools. This has the positive result of decreasing the need for faculty to become "jacks-of-all-trades".
5. One unexpected advantage of team teaching is that it becomes a means for faculty development. Faculty get the opportunity to see their colleagues in action and to pick up skills and knowledge from each other.
6. Finally, we have learned that it takes time for students to get accustomed to the studio model, a model in which there are clearly different expectations, roles, and responsibilities than they have previously experienced in their formal schooling. This can be an uncomfortable transition for many students. We all bring our own teaching and learning "myths" to an educational setting and it is unsettling when we are asked to put many of our preconceived notions aside.

Conclusion

The studio experience as conceived and implemented at the University of Georgia is designed to practice what most professors of Instructional Technology preach. We are trying to prepare the next generation of multimedia designers, developers, and teachers by modeling an approach that is consistent with what we know about learning and performing in schools and the workplace. Admittedly, our approach is far from perfect and we still must work within a system that best understands the one-

course/one-instructor model. It would be presumptuous to think our efforts have "turned the Titanic around," but we think we have at least nudged it towards warmer waters.

References

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