Online Learning as a Tool for Enhancing Design Education

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by

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Chapter 1
Introduction

The growing fiscal and social demands placed on institutions of higher learning at state and community levels have set a precedent for lowering operating costs, reducing resource usage, and serving changing student needs. These reductions are often manifest as pressure applied by universities on departments to use learning facilities to the maximum capacity, and to provide access to courses for students who cannot be, or are less interested in being, present in the physical classroom.

The traditional model for a studio design course is built on prolonged, direct contact between entire classes, individual students, and faculty. This model has proven successful at instilling discipline and cultivating analytical and critical thought in students for decades. Change is inevitable, however, and design programs must adapt to support the requirements of universities, students, and evolving professional fields alike if they are to thrive in the near future. While advances in technology will allow for greater intuition in interfacing with students remotely, it is how such technologies are implemented that may be the greater determining factor to their contribution to design education.

My research shows that the traditional design studio setting has great value as an environment where students feel comfortable interacting socially and that the community aspect of the studio that arises from this interaction is important for cultivating ideas and character. Online learning environments are useful for overcoming barriers to student involvement such as time and location constraints, and can give students access to vast resources. Design education is becoming much more diverse as the professional field demands designers who can think in different ways and communicate with specialists in multiple fields. The design curriculum of the future will be one that puts students in touch with innumerable experts, teachers, and professionals, as well as resources that will help them learn and conduct research. At the same time, this
curriculum must be such that students are engaged socially, so that they can become effective communicators, grow personally, and experience the benefit of learning from each other. Online learning is most effectively applied to design education as a conduit of resources, knowledge, and diversity, and as a supplement to the existing social structure of the traditional design studio.

The Demand for Distance Education

State spending on public higher education as a percentage of overall state budgets has been in a relatively steady decline for over twenty years. The subsidization of funding on the state and national levels through financial aid makes tuition increases somewhat more tolerable. This may be a reason that state legislators see higher education as a resource that they can use as a trade-off in allocations. In conjunction with this is the increasing student enrollment in two-year institutions that will further diminish state funds, as more students can be educated at a lower cost (Tanberg 2009).

Market driven competition exists in the US higher education system for both education and research. In addition to this, the government has sought to meet the public’s needs for education while controlling the spending of tax money in part by linking funding to performance. Continued loss of funding will likely cause a reaction on the part of universities in the form of changes to internal processes and resource allocation (Liefner 2003). Accommodating more students during times when funding issues are prominent means that policy makers and educators look to solutions that involve making greater use of technology and its applications to distance learning (DL).

The implementation of DL can leverage state and institutional resources. Furthermore, the successful harnessing of technological innovations in the form of DL has introduced new competitive forces into the higher education market. DL can be perceived as adding prestige, which provides an advantage in attracting students (Epper 1997). The Sloan Consortium’s survey of DL in colleges confirms that three quarters
of higher learning institutions claimed that, in the 2009-2010 school year, demand increased for online courses.

Beyond the fiscal demands placed on universities by the state, DL is also growing because of increased popularity among students. According to the Sloan Consortium, the increase in enrollments for distance education in general in the 2009-2010 academic year was higher than the increase in enrollments for all higher education by two percentage points. DL enrollments grew 21% from the previous year, and nearly 30% of all students in higher education have taken at least one online course. The 2010 ITC Survey of distance education reports that in 2009-2010, 68% of administrators of community colleges say that student demand exceeded their distance education class offerings.

This expanding growth of online education will have modal effects on teaching and course design; changes will not simply be limited to the vehicle of course delivery. New pedagogies will bring about the need for multi-dimensional literacies among both faculty and students. Educators themselves must take ownership of the changing process of how people learn. If they don’t, corporations and other profiteers will have a greater role than we do in influencing how we communicate and interact with our students (Shao et al. 2007).

Changes In Design Education

Design education is facing a climate of change. There has been effort on an international level to streamline design education for the benefits of being competitive and marketable. This is compounded by the fact that design schools are growing more commercial to attract students. Departments are looking for ways to grow their curricula in complexity and content, while dealing with diminishing budgets. The current institutional climate demands increased quality at a lower cost. As a result, there is a movement among design schools to redefine themselves. It is imperative that adopted
concepts be utilized in a way that adheres to the cultural, educational, and economic context of the individual institution. Further, there is great value in not only changing content, but, more importantly, generating structures that support dynamic content, and are capable of adapting to change. (Lleras and Trummer 2012)

Design programs are pressured to diversify in response to an ever-broadening profession where technologies are innovated and made obsolete very quickly, and where large amounts of money are made by entrepreneurs and start-up businesses. There is now choice in customizing one’s educational journey. Students are realizing that an education must be both deep at times, and broad in general. They are now learning to become social scientists, ethnographers, photographers, and developers, as well as designers. In a similar vein, there is a growing need to teach design process rather than design tools. Currently a subject of interest in many fields, cross disciplinary studies are extremely valuable to design students due to the unpredictable and varied nature of the problems they will be called on to solve. Successful programs teach many ways of thinking. Exposure to other disciplines—computer science, marketing, business, engineering, anthropology—should be very attractive to programs that seek to create a diverse student population (Vossoughi and Alviani 2012).

The potential exists for the implementation of DL methodologies to serve as a vehicle to many of the directions that the field of design education is traveling and as a means of escaping many of the pressures that design programs are under as a result of the constantly changing environment of higher education. Enrollment rates associated with DL are on the rise, and DL options are attractive to many students. By virtue of simply offering more options in this arena, design programs could increase enrollment. DL also offers opportunities for providing design students with exposure to fields outside of their major of study, as well as providing access to design related courses to students from other disciplines. Another possible asset that DL can provide, however, are the ways in which it can be used as an effective tool within design programs to deliver
core values.

As with higher education in general, design departments have been slow to respond to the new demands for developing deliberate, controlled, effective, and well-researched DL solutions. This is partially the result of a lack of appropriate pedagogical models and a lack of innovation in general (Saghafi et al. 2012). While the academic arena, not to mention all of society, has been subject to such drastic technological and social changes, the learning environment itself has been relatively slow to reveal proactive effects of these changes. As learning environments play what may arguably be considered the most important role in student progress, it stands to reason that they should be the most responsive to so many important developments (Saghafi et al. 2010).

Design education must, and eventually will, include teaching models that are oriented toward students who are not physically present in a classroom at all times. It is not clear how current pedagogy, facilities, faculty attitudes and skill sets, and technology will be unified in this effort. Applying technologies for the specific purpose of recreating classrooms in a virtual environment will not produce viable results. That methodology does not meet the specific needs of the dynamic environment of the design studio. Rather, we will see greater yields from our investment in understanding how the freedom and growing familiarity of online communication and the structure and support of traditional design courses can enhance one another.

Both the culmination of the individual values of online and traditional teaching methods, and the resolution to needs and concerns of faculty and students can be resolved by adopting a model of Virtual Design Studios (VDS) that successfully include aspects of social networking. My research reveals that faculty members require support to understand and use new technologies and to develop new courses that utilize familiar technologies, and that students benefit as much from interacting with each other and faculty members as they do from the process of finding solutions to design problems. In addition, the industry of design is in a state of change. This change affects the
needs of design students who will one day be the work force of that industry, and whom we, as educators, must serve.
Chapter 2
The Design Studio

Studio Based Learning

The design studio is an environment where unframed problems are solved by an iterative process which involves analysis, critique, and revision. It is project-centered, supervised by experts, flexible in group size, and discussion-focused, and it involves multiple elements of knowledge relevant to the professional field. The studio model generally revolves around the work of individuals, the guidance of instructors (accepted masters of their crafts), and the feedback of peers. It is highly person centered in its approach to problem solving. Knowledge gained in the studio requires learners to access deeper levels of cognitive and social skills (Brocato 2009).

Traditionally, the studio includes working space for each student. Students spend a considerable amount of time in these individual spaces, and this is where a large portion of learning occurs as students produce their work. The shared portion of the studio can be less a defined space, and more a space where the sharing of particular resources—technologies, production tools, and expertise—can occur. Students are encouraged to seek out inspirational materials and resources that affect their process and product, and to consult instructors regarding their merit and implementation (Brocato 2009).

The teacher-student relationship in the studio is personal and relies on individual interaction. Learners engage with experts in proposing concepts and receiving feedback. In contrast to interactions in a typical school setting, where learners are members of larger groups and are often addressed in a general manner, studio interaction engages students almost daily in individual critique and personal consultation. The learning process is reliant on social interactions to build knowledge. The structure of the studio is built on interpersonal interactions in the form of working in small groups and dyadic relationships. A community grows around individuals who become more
unique and diverse, yet complementary toward one another as a result of the process. (Brocato 2009)

Time in the studio learning environment is spent driving toward solutions to specific problems by developing proposals, informing changes to a proposal by submitting it for review by others in critique, and modifying prototypes in iterations. The critique-iteration process is cyclical and can repeat indefinitely toward achieving increasingly successful levels of technical accuracy. Commonly, critique involves a single student and teacher, or small groups of students and teachers. The teacher serves in the critique process by moderating discussions, and, to a greater degree, by guiding students’ work with selective, reserved feedback that allows room for interpretation on the part of the student (Brocato 2009).

**The Studio and Online Learning**

The popular concept of the educational design studio has a legacy extending back nearly one hundred years to the Bauhaus school in Germany. Teaching at the Bauhaus originally centered on the value of fine craftsmanship over machine replication. Community was a key focus, and there was a unified goal within the school to develop students’ personalities as well as their technical skills. Most current models for design education have not changed significantly from this ideal. Studios can be thought of as problem-solving settings where students are guided as individuals or in groups by educators with established expertise. The design studio is dynamic, spontaneous, and adaptive. It is these qualities that make constructing design pedagogy uniformly and prescriptively very difficult (Broadfoot and Bennett 2003).

As is noted by Saghafi et al. (2010), there is a need to redefine the base model for the design studio as it exists in the university setting, especially as technology advances and becomes more important in the daily lives of everyone who relies on that environment. The changes that occur as a result of that redefinition should, however,
still be informed by proven successes of what already exists. In their ability to adapt and change, the future iterations of the design studio environment should be representative of planned growth that uses technology as a tool to enhance and amplify existing value. Likewise, the inherent limitations of the studio environment which exist in the physical world can be addressed and perhaps overcome by tapping into the expansive possibilities of virtual space and online communication.

Traditional studio environments have great value in the natural ease through which they allow students to develop a social presence and interact. The limitations that persist though are the inflexible nature of time and physical presence. These constraints can often manifest themselves as a loss of opportunity for all students to participate in an activity, or for students to reflect upon work to an adequate degree. The freedom of access beyond the limits of time and location are particular strengths of a web-based, VDS (Saghafi et al. 2012).

The most common method by which many universities employ online learning across multiple disciplines is a Web 1.0, or “downstream” approach (Ham and Schnabel 2011). These platforms are tool-centric and oriented toward the strict delivery of lessons, assignments, and assessments by instructors. Group interaction in the form of discussions and comments is available, but often applied simply as another tool. They can be counterintuitive and unfamiliar to users who access them solely for the purpose of meeting course requirements. Further, concerning value as it pertains to the VDS, these applications are rarely centered toward visual content (Shao et al. 2007).

Web 2.0 technologies allow users to affect, author, and own information and ideas on a very detailed level by granting the mass of users the ability to contribute to shared content and communicate across broad networks. There is a clear connection between this user activity and the needs of the VDS to support collaboration and social learning (Ham and Schnabel 2011). The platforms of existing social networks such as Facebook, Twitter, and Instagram are designed to be flexible and intuitive. In addition,
they are already familiar to a young population of students who have been exposed to them from an early age. It’s a very short leap to recognize the value of Web 2.0 as a viable foundation for VDS, where the social engagement of online networks supports the long standing structure of the traditional studio (Shao et al. 2007).

Ham and Schnabel (2011) conducted a study which analyzed the use of and response to a VDS by 108 students in both Hong Kong and Australia as they worked together remotely on architectural designs throughout an entire semester. Researchers found that over 90% of the participants already used popular online social networks in their personal lives prior to the study. Before the semester began, 80% of the students replied that they felt that the inclusion of social networks would be a positive contribution to the studio environment. Course evaluations revealed that the number of students who agreed that the online component of the design course enhanced their learning experience rose by over 63% from the evaluation of the same course from the previous year. (Ham and Schnabel 2011)

Researchers posit that the university of the future will continue to have buildings occupied by students, but that the learning that goes on in those buildings will become increasingly more enriched by virtual experiences. Students will continue to have a need to be part of campus life, just as they will need to learn in the most effective way possible (Elger and Russell 2003). Learning, especially that which occurs in the design studio, happens both socially and individually. This signifies the need for a blended model of design education that can incorporate the strengths and minimize the weaknesses of both traditional and web based design studios (Saghafi et al. 2012).

In a case study conducted by Saghafi et al. (2012), twenty-four third-year architecture students worked with tutors and academic personnel in a blended learning studio environment for one semester. Participants were taught in alternating weekly face to face (f2f) and online sessions. The online sessions included both synchronous and asynchronous components. Interviews of both instructors and students were conducted
Participants in the case study indicated that the f2f environment has some decided advantages. F2f provided opportunities for more holistic and engaging relationships between everyone involved. Tutors responded that having the control of process that allowed them to ask a student to work for a while and show the work at the end of class is something that was only possible in the f2f setting. It was also revealed that the VDS emphasizes working individually and independently and that, while this mode of working is necessary at times, VDS is not as supportive of collaboration. Several respondents suggested that VDS be modified to be more conducive to group participation (Saghafi et al. 2012).

VDS provided constant access to work in progress. This was generally considered valuable, as it increased motivation and healthy competition, but students preferred real time communication for answering questions and providing feedback. This reveals how the two media can be used to balance one another. It was found that synchronous portions of the class were better for delivering ideas, while asynchronous portions were better for idea building. This data suggests that f2f modes of learning are more appropriate for serving as the synchronous portion of blended learning environment due to their flexibility and potential for spontaneity while the VDS supports activities that require more time and reflection (Saghafi et al. 2012).

It was found that f2f supported interaction and the formation of a learning community in which peers support each other, learn by participating together, and receive/provide direct, immediate feedback. Furthermore, the f2f studio provides the obvious advantages of a 3D experience and the accommodation of facilities and equipment. VDS, while found to be isolating to some students, supports the archiving and evaluation of process and the development of design and reflective review of progress. VDS also has inherent virtues such as lowered costs of transportation and facility usage and equal learning opportunities among users. In addition, by granting students control
over when and where they learn, VDS gives students ownership of the learning process and allows them to be self-managed (Saghafi et al. 2012). The data collected from this study provides strong evidence that a design studio model that utilizes online resources to free students from time and location constraints, while bringing them together in a community so that they can learn from each other, is a viable opportunity for progressive development in design education.

The ultimate value of the integrated VDS may not be in what it brings into the learning environment, but in the fact that it removes physical boundaries. Since students already use online resources like social networking to overcome many cultural and geographic differences, VDS can become a natural conductor for this same transfer in the educational setting. Open communication and tool sharing are obvious and immediate benefits of incorporating an online component to any classroom. What is less obvious, but greatly relevant to the design studio of the future, is that VDS is a broader gateway to knowledge in the professional world from people in other locations and from other disciplines within the university. Students can access a learning environment that is more enriched, more dynamic, and better suited to their daily lives (Ham and Schnabel 2011).
CHAPTER 3

Student and Faculty Needs

Students Needs

In a collaborative research effort between AIGA and Adobe in 2006, lists of competencies and trends for professional designers in the near future were compiled. This project was titled, “Defining the Designer of 2015” (DD2015), and included interviews, focus groups, workshops, and surveys conducted with thousands of design professionals and educators. The findings of the study reveal that young designers entering the field will need to develop skill sets that are much broader and more flexible than they have been historically. Design departments must be sensitive to the demands of the profession and to the skill needs of students if they are to remain relevant to the people they serve. Educators should take the opportunity to evaluate existing methods of knowledge and skill delivery in order to determine if we are meeting the changing needs of students (Designer of 2015 2006).

The ability to solve communication problems through means that go beyond the interpretation of visual language is becoming more valuable. DD2015 identified a number of competencies that should be cultivated in new designers. Problem solving through research, analysis, user testing, and outcome evaluation are all of growing importance. In addition, designers will need to be able to respond to audiences by recognizing physical, cognitive, cultural, and social human factors as they relate to solutions. They must develop management and communication skills that will allow them to function effectively in interdisciplinary teams and lateral organizations. Understanding system functionality, as well as how businesses and organizations operate, is also a crucial insight. Finally, as is true of nearly any professional or educational field that hopes to survive in the future, the ability to operate in a global environment that spans cultural boundaries is of immediate importance (Designer of 2015 2006).

Beyond the competencies that will be expected of designers in the future,
DD2015 found several trends that will come to have an impact on the world of design practice. These trends will require designers to take on new roles that may be less familiar to them than that of form maker. Skill sets will become broader and deeper as designers are called upon to draw knowledge from multiple disciplines in order to communicate content globally and collaborate with specialists in varying fields. Understanding how systems function is going to be necessary to know how to distribute content to diverse people through complex social, technological, and economic networks. Lastly, designers will start seeing users and consumers as co-creators, not only as the process of creating and experiencing content becomes more democratic, but also as tools such as ethnographic research become more important for solving problems (Designer of 2015 2006).

The implications of the DD2015 findings are that schools that are training designers as makers, even makers of content and communications aimed at new markets and consumer habits, may not be preparing design students as effectively as they could be, especially for what has always proven to be a professional practice that must be dynamic and responsive to cultural and technological change. Curriculum and pedagogy will likely adapt to change as they tend to do in healthy departments, but the scope of the demands on designers in the future may be such that we as educators should analyze the definition of what design education is, as well as the very platforms from which we deliver it.

Students are becoming aware that they have to learn deeply of their design discipline, but also broadly to draw from other disciplines, if they are to offer value to the profession. Many corporations understand the importance of versatility in delivering rich, relevant results. Even under the header of design, there is a growing variety of options, such as communications design, interaction design, service design, or user experience design. Students are increasingly being given choices in their educational path. Giving students choices is a good thing in that students can become more
engaged in finding their purpose in the professional world, thus taking ownership of their educational experience. There is also, however, a danger that students can become confused and misdirected if they don’t have the opportunity for that engagement or if they do not recognize its importance. Often the case is such that departments are not structured to accommodate the breadth of possibilities for crossing disciplines (Trummer and Lleras 2012). It is in the interest of those who construct the systems by which curricula are delivered, to build in both a means of exposure to other disciplines and to the field into which the users of that system will be entering.

The idea of a transdisciplinary education model for design would mean not only that design students could benefit from exposure to other majors, but that students in other majors could benefit from design as well. This cross-pollination of learning would have implications that may present challenges on multiple fronts as design departments seek to define their place in the institution overall, and decide what faculty is needed to carry new curricula to fulfillment. For example, design departments that exist in an art school setting may find communicating the value of their methods and assigning value to other methods difficult. While no common theory of design will ever come to define the practice on the whole, there may be value in recognizing the effectiveness of other disciplines as tools for the practice of design, which help to redefine it at the academic level (Trummer and Lleras 2012). This substantiation of design as transcending disciplines may lend accessibility to it across schools and majors.

Diversification is key to achieving relevancy in our rapidly changing profession, but it must not come at the expense of what already makes design methodology successful. It is worth recognizing that, while knowledge and experience from other disciplines are very powerful tools for holistic problem solving, they are still only tools. The process through which designers apply their tools should be at the core of what design students are learning. Significant effort should go into immersing students in working design environments under the tutelage of experienced professionals in order for them to gain
a clearer understanding of process. Apprenticeships in particular are invaluable for giving young designers the benefit of working under the constraints and to the standards of the professional world. This forces them to acknowledge the importance of the details of their work and to justify their decisions. Armed with this experience, students will return to the academic setting with advanced verbal and interaction skills, enriching the classroom for themselves and their peers (Vossoughi and Alviani 2012).

The way design students think, not just what they think about, is also to be considered as the future of design education unfolds. Encouraging students to think in unconventional ways can help them to rise as industry visionaries. Educators should be asking how they can provide the tools necessary for students to understand the economic, social, and political dimensions of their development, and to support students’ desire to make a positive impact with their work. Taking a human-centric approach to their work and focusing on social and ethical responsibility can help students bring relevance to design (Trummer and Lleras 2012). This all suggests that curricula should be responsive to how students perceive their world by providing access to it and by giving them the tools and vehicles necessary to interact with it in a productive way.

Success in building sustainable design departments will come largely from balancing creativity and problem solving with skill and process. Design schools will need to channel technology to keep the skills they provide to their students current while helping those students become creative enough to fit their skills, and themselves, to an array of possibilities in the professional world (Trummer and Lleras 2012). Students need to be given a wide variety of tools, and taught many ways of thinking in order to use them (Vossoughi and Alviani 2012).

Factors that Affect Faculty Participation
Technology and communication tools have had an impact on how faculty members do their jobs. A large percentage of faculty members have access to and use technology in
conjunction with certain aspects of their professional lives. Still, many resist accepting technology as a delivery method for learning. The factors that contribute to faculty resistance or acceptance to the value and implementation of DL are complex. They include workload, use of and competence with technology, institutional support, incentives, promotion and tenure, and quality of learning (Tabata and Johnsrud 2008).

Faculty who perceive technology as having a positive impact on their work are more likely to use it, and its use tends to increase as faculty become more exposed to it. Exposure to one technology may increase the likelihood that others will be adopted. Along these same lines, exposure to technology may affect a faculty member’s attitude toward DL. Studies have shown that faculty who are more competent using technology are less likely to have concerns about barriers to the implementation of DL. In addition, there is evidence to suggest that faculty who are intimidated by technology are less likely to participate in DL (Tabata and Johnsrud 2008).

Tabata and Johnsrud indicate in their findings that faculty who perceive their instructional skills as being higher are also more likely to participate in distance education. Adequate support is necessary, however, to help faculty members adjust to new teaching media. The transition from traditional courses to distance courses should be facilitated by professionals who can provide course design and technical support. This assistance should not come at the cost of impeding the delivery of course material on the part of faculty. In addition, it was found that faculty members who have participated in distance education consistently held more positive views of its quality than those who did not. This is evidence that experience with distance education may be the most valuable tool in encouraging participation. Furthermore, results showed that faculty are generally not compensated differently for delivering distance education courses than they are for traditional courses, despite increased student enrollment and the particulars of the current models. Institutions should carefully consider whether the potential benefit of increased enrollment outweighs the potential cost of adjusted
compensation (Tabata and Johnsrud 2008).

Issues of determining whether the quality of DL is equal to that of traditional methods are of lesser importance than those concerning how to support faculty in online courses to the effect of providing the best possible education to students in either environment. The current trend in academia is often to explore distance education primarily for the perceived financial benefits. In this pursuit, the tendency can arise to overlook adequate training for faculty, thereby failing to provide support that integrates properly with the learning environment. The result can be the undermining of instructors’ authority by disrupting students’ perception of instructors’ expertise (Marek 2009).

The rapidity with which the digital reform of higher education has occurred has left some gaps in the technical and instructional design support of educators. When a perceived lack of support for faculty is present, a pattern of learned helplessness can develop among teachers who may otherwise be innovative. This rapidity has also resulted in growth that has often taken place without comprehensive inclusion of faculty opinions or without regard to their expertise. (Marek 2009)

Evidence has been brought to light that suggests that universities offering distance education should invest in developing a culture of support. Some faculty members have cited that the effort to integrate new technologies into their classrooms has often resulted in moving too far ahead of administration and IT supportive capabilities. In fact, introducing new technologies can be perceived as burdensome by instructors who struggle to find support; naturally, this fact can act as a disincentive (Marek 2009).

When teachers cannot rely on leadership to provide support structures, they often work to accomplish their goals the best they can on their own. One could infer from this that faculty who teach online actively work to gain the skills necessary to do so. Further, it is an indication that the experience of teaching online builds one's confidence in doing so. Likewise, teachers who feel unconfident in their online teaching
skills may be more likely to opt out of participating. The possibility exists that, while this method cannot be relied on as a complete support network, peer mentoring is a viable resource for building teacher confidence and skill acquisition. This method may be employed more effectively if formalized mentoring programs are initiated that support both mentors and the mentored (Marek 2009).

It seems that a well integrated support network for faculty, including those who are eager to participate in DL, those who are less enthusiastic, and those who are altogether skeptical, might have many valuable returns on increasing the effectiveness of DL initiatives. As has been evidenced in the literature, teachers in general are more likely to participate in DL when they feel rewarded for their effort, when they gain experience with various media, when they have access to technical support, and when they perceive that DL can achieve a level of quality on par with traditional methods. A dynamic support network can provide dedicated technical assistance in the form of network members who are technical experts, but also members who are experienced, insightful peers. A network that records progress and shares accomplishments may become a part of a viable system of reward and encourage internal motivation on the part of participants. A support network that incorporates a well-integrated interface with the media through which DL is delivered, will help build confidence and familiarity among new faculty users. Finally, as successes and achievements of all users become more evident on the network, perceptions of the quality of DL may be positively affected.

**A Change in Approach**

As revealed by the research of Lee and Busch (2005), traditional classroom environments afford instructors the advantage of responding to students’ nonverbal cues as a means of assessing comprehension of and comfort with course material. This allows them to adjust the pace of their classes in direct accordance with their students’ needs.
In general, teachers in distance learning environments have limited access to interacting with students, and intuitive responsiveness to student needs may suffer. This suggests that developing skills not directly related to technology may be necessary. The possibility exists that focusing too heavily on hardware and technology in the advancement of distance learning may be less effective than focusing on the human element of teaching (Lee and Busch 2005).

Even with the advent of advanced technology, the likelihood that the DL experience will ever actually mirror that of traditional classrooms is slim, and this could be evident to experienced faculty members. The perceived differences between DL and traditional classes may be a factor in participation. Instructors who believe that DL differs too significantly from traditional courses in ways that are important for effective learning might not be willing to participate. It has been shown that instructors feel that interaction occurs more strongly in traditional classes than in distance courses, and that traditional courses are more adaptable. Ways must be found to increase interaction in DL environments (Lee and Busch 2005).

Studies have shown that praise, humor, physical proximity, and eye contact all relate positively to student learning. It has also been found that student perception of social presence has a positive correlation to their satisfaction with distance courses. Discussion, participation, and achievement scores have been found to be higher among students who were supported socially and academically by instructors. Strong correlations have been discovered between students’ sense of social presence, perceived learning, and satisfaction with instructors. Further, when they perceive their classroom environments to be socially supportive, and when classroom goals are oriented toward mastery, not performance, students are shown to be more likely to seek help (Lee and Busch 2005).

Of the studies on the effects of college life on student performance, there is a consistent theme regarding the role that social interaction plays. The interaction
between students and instructors is important, but is not exclusively definitive of classroom interaction. Peer interaction is a natural part of the overall college experience, and is therefore a part of the learning experience as well. Peer groups have repeatedly been shown to have measurable effects on the development of individual students (Farber 1998).

The interactions between individual students, their teachers, and their peers influence not only their intellectual development, but also their attitudes, values, aspirations, and psychosocial characteristics. In fact, it has been documented that moments of student-faculty and student-student interaction in and out of the classroom are those which students remember much longer than in other learning events. In particular, when teachers step out of the impersonal role of professor and make personal connections with their students, it generates moments of lasting impression. Students are more likely to adopt values, attitudes, and behaviors at such times, and comfortable or more intimate circumstances may stimulate intellectual growth as well as emotional well-being (Farber 1998).

The evidence regarding the important role of social structure on learning suggests that models for distance education which may isolate the student, or even provide them with fewer avenues of interpersonal interaction, may not be as effective as models focused on enhancing existing or building new social structures. Narrowing education is equivalent to narrowing minds, and this may have undesirable effects on both students and their society. An education can be an important way in which we represent ourselves, in our own minds, and to the rest of the world. There is a danger, then, in moving students from a socially engaging, culturally rich, historically influenced, and human centered campus environment to a computer screen, especially if the motivation for this change is financial (Farber 1998).

It may ultimately prove ineffective to put resources into replicating and distributing a digital version of the existing university environment and classroom experi-
ence. The literature presented here suggests that there will likely never be an equivalent transfer of the traditional classroom experience to the computer screen that delivers a holistic personal experience (Farber 1998). Rather than working to simulate classrooms online, perhaps it is time to look into redefining both the classroom and the DL environment so that the value and effectiveness of each is used to the fullest. In particular, the undergraduate design studio may present a wealth of opportunities for experimentation and new ways of understanding how social interaction and technological resources might be brought together more effectively to deliver curricula.

A new pedagogy needs to be developed for the VDS. The physical studio has tended to be the default basis upon which such pedagogies are modeled. The physical manifestation of the design studio should not be adhered to as stringently in this endeavor as it may have been in the past. Elements of the traditional studio learning experience, such as supervision, communication, presentation, and both formal and informal reviews, need to be translated into the virtual environment; however, this should occur in such a way as to utilize the opportunities that the virtual environment provides to do these things in different ways. The teacher’s perspective in accomplishing this will be crucial to maintaining the successes of the existing studio environment (Shao et al. 2009).
Chapter 4
Research Findings

Methodology

ASSUMPTIONS:

• That student challenge and engagement are the most important aspects of design education.

• That there is a lack of challenge and engagement in current online design courses.

• That challenge and engagement are more effectively implemented by synchronous methods than by asynchronous methods.

• That specific technologies are less important to teach design successfully than the methodology by which they are applied.

• That any pedagogy developed for DL will, by necessity, have to be flexible, expansive, and inclusive to suit future needs.

Initial primary research showed a correlation between how connected students were to their teachers and classmates, and how well they not only performed in class, but also learned the material. This stage of my research also revealed that students taking design courses online feel significantly less challenged than students who take courses in traditional studio settings. I concluded from this data that student engagement and challenge were a pivotal component of finding success in teaching design online, and I hypothesized that the asynchronous qualities of those online courses were the point upon which that challenge and engagement pivoted. As my research progressed, it became clear to me that, while the synchronistic aspects of a DL course do have an effect on outcome, they are less important to student success than social structure.

Assumptions that did prove accurate throughout my research were that specific technologies are less important than how they are applied and that pedagogy for DL must be transitive if they are to be sustainable. Technology is fluid, and though it can be used to maintain stability, it is unstable due to its tendency to change. Constraints such as bandwidth limitations, rendering capability, and audio/visual delivery will almost
certainly diminish as technology progresses. In addition, standards and expectations for technology will likely rise with its development. Recommendations for technology use arrived at from this research would not be viable for very long.

Data for this study were gathered through two main devices. An online survey was submitted to three sets of individuals with faculty who taught both traditional and DL design courses to design graduate students and to undergraduate students, both design majors and non-design majors, who had taken traditional design courses, DL courses, or both. 49 respondents, from Ohio and South Carolina, participated in the survey. The survey was designed to elicit information about the experience of all these people in taking and teaching VCD courses. The goal was to get a sense of the level of challenge and engagement experienced by students who took distance learning courses and/or traditional courses by assessing certain criteria of their involvement in the course, and with faculty. The three main pieces of information I hoped to gain from the survey were: (1) Did the student find the course challenging? (2) How involved was the student with the course and others who participated in it? (3) Do positive responses to these questions contribute to student success? This survey led me to the conclusion that students who took DL courses in VCD were less challenged and less engaged in those courses than students who took traditional courses.

Upon reviewing these results, I sought to determine if they were caused by the delivery method of the DL courses, which were all asynchronous. I then set up the second means of collecting data. I devised a study in which four students would be given a lesson and critique in basic composition building by DL models; half would be given the lesson and critique via an asynchronous method, and half via a synchronous method. After the experiment was concluded, I interviewed the participants to determine how challenging and engaging they found the experience. Evidence from the results suggests that the students who were in the synchronous group found the experience more challenging and engaging that those who were in the asynchronous group. Participants
were selected by the issuance of an online survey. Only students who had never taken a design course, who all had a GPA above 3.5, and who were all upperclassmen were selected. Interviews were conducted in person, and each participant was provided with a cash incentive of one hundred dollars. The experiment and interviews took roughly two weeks to complete.

While the data I collected in my primary research do support my hypothesis that synchronous delivery methods are more effective than asynchronous methods, a more extensive literature review led me to an analysis of the data that revealed other factors that may have a greater impact. I have adjusted my hypothesis to regard the social aspects of both online and traditional courses as being the correlating factor to student success. While I do not consider my experiment a failure, the results of it do not directly support my new argument regarding the social aspects of online learning. In light of this realization, I have omitted the findings of the experiment from this paper in order to more efficiently provide insight into new correlations I discovered from my original survey.

Of the 49 respondents to my online survey, 16 were undergraduates who had taken a studio design course online, and six were teachers who had taught design courses online. All of those respondents attended or taught their online design courses in the Visual Communications Design Department at Kent State University. The course offerings are issued through Blackboard, a tool-centric platform. The courses are structured around weekly, asynchronous lectures which demonstrate technique, software usage, and the application of basic design principles. Students complete projects on their own time and submit digital files. Instructors’ primary duties are grading projects and answering questions related to the course content.

The remainder of the respondents, 23 students and four teachers, all attended or taught traditional design courses conducted in a studio setting. These respondents were divided between Kent State and The University of South Carolina, Columbia. The
courses they attended or taught would have varied in specific focus and class level, but all would have been conducted within the same general studio structure. In this structure, the teacher delivers a design brief, and occasionally a lecture, at the beginning of a new project; students conduct research, seek inspiration, and ideate before beginning preliminary concept development. Concepts and prototypes are iterated and refined through a critique process involving the feedback of some or all of the class participants. When the class arrives at a final solution, the instructor presents it for grading. The instructor primarily serves as a moderator of class work flow and critiques, a source of feedback, and an arbiter of project grades.

**Student Responses**

(Percentages are rounded to the nearest whole number.)

Questions regarding interaction between students and instructors reveal a broad difference in the levels of communication and social interaction between the distance and traditional courses. When asked how often they communicated with classmates outside of class, 56% of online students responded “never.” The same question asked of students in traditional design courses returned a response that 74% of them communicated with classmates outside of class at least once a week. Further, 37% of online students received feedback from their teachers on some of their projects, and 37% received feedback on none of their projects. 74% of traditional students received feedback from their instructor on every project that was returned to them. When they communicated with their instructors outside of class, 25% of online students did so for the purpose of receiving feedback on their work compared to 78% of traditional students. The means and frequency of communication with teachers also vary between the two course delivery methods. 82% of traditional students met with teachers in person. 17% of them directly communicated with their teachers once a week. None of the online students met with their teachers in person. While this is to be expected due to the nature of online
courses, which tend to attract students in remote locations, it is commonly known that a large percentage of the students enrolled in these particular courses are attending classes on campus. Only 6% of online students communicated with their teachers once a week.

These data reveal that students who take online courses in design are less socially engaged with their peers by a significant margin than students who take courses in traditional studio courses. They are also communicating with their instructors less, and receiving significantly less feedback on their work. This supports findings from the literature which claim that traditional studio courses are valuable to students in that they are conducive to social interaction.

Upon being asked what they felt was the most important skill, quality, and/or value that they developed from studying design, 56% of online students reported that software familiarity or proficiency was most important to them. 31% reported finding design skills important, such as those related to typography, attention to detail, and understanding visual appeal. One respondent found problem solving and communication important, and one respondent saw importance in learning self-motivation. Only 9% of traditional students related to software or computers in response to this question. Their responses were vastly more varied and in depth. 21% gave a response that was socially oriented, including working in groups, participating in critiques, and developing communication skills. 56% found design skills to be most important. Other responses that were profound were related to personal development. These responses included taking pride in one’s work, gaining the ability to see design everywhere, being dedicated to the task at hand, managing time well, and recognizing idea development.

In response to how students would change the courses they attended, many of the traditional students responded that they wanted more technically oriented courses such as those related to software proficiency and web design. There were also several responses to this question that mentioned greater access to both working professionals and real
clients.

Whether online students sought out their courses to gain computer skills was not explored in this research. They may have found those skills important before taking the course. As such, these data do not reveal that online courses are necessarily better at delivering technical tools to students, but they do reveal that it is a more viable means of doing so. At the same time, the traditional studio seems to be more viable for engaging students to communicate, develop personally, and become introspective. One of the drawbacks of the traditional setting appears to be the limited access to technical knowledge and the poor connection to people and resources outside of the studio. As the literature revealed, a potential strength of a VDS is the ability to communicate easily with professionals regardless of time and distance. Surely the same is true of clients as well.

The most convincing results of the survey were those that showed the apparent ineffectiveness of the online courses in general. When the students were asked how confident they were in their ability to use the skills they gained in their online design course, 31% of them replied “somewhat confident,” and only 13% of them were extremely confident. Compare this to the traditional courses, where 70% of students were somewhat confident in their abilities, and 26% were extremely confident. Students in online courses generally seem to have less confidence in their learning experience than students in traditional courses. Further, 38% of traditional design students surveyed claimed to have obsessively edited their work whether they expected the teacher to see it or not. In contrast, none of the online students selected this response. 44% of the online students had previously taken a traditional design course, and all of them preferred the traditional courses to those online. Sources like DD2015 show that the professional field of design will continue to grow in its demands of young designers. Students who are not confident in their abilities, or who are not motivated to find their own high standard of success in their work, will not be as well poised to thrive. These
results indicate that online courses are either not delivering what the students need to succeed or not delivering it well enough.

Finally, one piece of evidence that indirectly reveals students’ attitudes toward each respective learning environment is the way they responded to the survey. Students taking traditional design courses responded to open ended questions by writing an average of 65 words apiece in their surveys. Online students wrote an average of 27 words apiece. When asked what their opinion of the design department was based on their experience in the courses they had taken, online students were 24% more likely to omit a response. For those who did respond to this question, traditional students were 38% more likely to respond positively. Students in traditional design courses have more exposure to the design department and therefore have stronger opinions about it. The online courses currently offered by the department do not appear to be successful in immersing students in the culture associated with traditional courses.

**Faculty Responses**

In keeping with the ratio of students to teachers in the classroom, many fewer faculty than students responded to the survey. In addition, the survey was aimed at understanding how students perceive and interact in the different environments, so faculty were asked about a third fewer questions. Responses regarding the amount and frequency of communication match those of students to the degree that repeating them would be redundant. With more insight into the subject, I would have also asked online teachers about their technical support networks and how those networks affected their reaction to the courses. Also, I would have asked traditional studio teachers what sort of social connections they had with their students, and what effects they felt those connections had on the learning environment.

Faculty responses show that they were generally less enthusiastic and optimistic about their experience with teaching online courses than they were about teaching
traditional courses. 50% of the teachers surveyed were not confident in the material that was provided for them to deliver to their online students. In contrast, 75% of the faculty members who taught traditional studio courses were confident in their material. 50% of the online teachers were also not confident in their students’ ability to apply the skills they learned in class successfully. 100% of teachers were confident in their traditional design students’ abilities. When asked if they would want to teach an online course again, 33% responded negatively, citing lack of engagement and lack of immediate response as the chief complaints. Of the teachers who responded positively, all but one did so with the caveat that they would only want to teach an online design course again if the curriculum and delivery method were heavily amended. All of the traditional studio teachers who responded to this question did so positively, with the potential for student teacher interaction being the most common reason.

These results show that teachers are generally dissatisfied with the online design courses they taught. There is a clearly positive correlation between teacher satisfaction, frequency and form of communication, and quality of courses. There is sufficient evidence in existing literature to prove that these factors are all connected through cause and effect relationships. Teachers who disparage online course quality are less interested in participating and less engaged when they do participate.
Chapter 5

Conclusion

I have provided evidence that demonstrates a need for investigating the prospects of incorporating distance education as a delivery method of design curriculum. The initial argument regarding departmental pressure and financial need is presented simply to prove the inevitability of this occurrence. The evidence that I uncovered in the later stages of my literature review and in my primary research, however, makes the argument for including online components to the design studio much stronger. Educators will find great value in learning new ways to engage students on their level in ways that better suit their daily social habits. Further, online communication presents myriad opportunities for students to gain access to resources in the professional world which have previously been logistically difficult to provide. Finally, design educators have needs too. Educators vary in experience and comfort levels when it comes to digital communication. A well-constructed network of support can be a valuable tool for making technologically enhanced design studios effective teaching environments.

The challenge of defining a pedagogy for the design studio comes from the tendency of the studio to be a plastic environment where learners are free to construct their own means of solving problems which vary in form and delivery. The great strength of the studio is that it allows students to build strong social presence and interact with peers and instructors in a personal, immediate way that contributes to the quality of their learning. The physical studio has its limits, though, and participants need greater flexibility of exposure when reflecting on work and examining process. Online environments, particularly Web 2.0, allow students and faculty the opportunity to exchange work, ideas, and process in ways that allow them to interact with them freely at individual paces and depths. Further, digital communications open the studio up to influence and information from anywhere and anyone. The physical studio complements this reflective learning and influx of ideas by allowing its participants to share
their influence, learn from each other, and grow character as a result. A hybrid model that embraces both of these learning platforms, using the virtual studio as an extension of social presence and the physical studio as an opportunity for intuitive responsiveness, will lead to more effective learning than either model would independently.

Design students will always need strong problem solving skills. The problems that they will solve as professionals have been, are, and will continue to change in scope and nature. Designers need to be able to interact with a wide variety of specialists, clients and consumers who have an increasing stake in content ownership, research subjects, and an audience which is growing more broad, sophisticated, and demanding in general. Expertise in visual language is less exclusive now than ever, and it will only continue to grow in availability as communication becomes more important. Form making and tool usage now give way to process development and diversity of skill sets. Students need access to as much knowledge and experience as educators can possibly provide. Students are connected to each other and the world in ways that support vast exchanges of information. Their education is not keeping up. We now have the ability to allow students to see directly into the professional world and to expose them to the changes therein in real time, giving them ownership of what they want to do, what they want to know, and how they might change that world. Once they are armed with that knowledge, we should provide them with an open buffet of experts, disciplines, and tools from which to pick and choose to build their own educational experience. Having found their own paths, students will need educators to guide them in how to apply these tools through modes of thinking and how to be responsible in their use. The most convincing evidence that this change is necessary is, quite simply, that it is possible. Rather than confine our successful design methodologies and pedagogies to flat, canned delivery platforms, we should take control of how we deliver them. We need to meet students on their own ground and give them a learning experience that functions as an intuitive, responsive, flexible, and expandable social network that they can control.
Few faculty members could manage to do their jobs today without the advent of digital communication. Rather than directly resisting the use of technology in the classroom, many faculty members are resistant to the circumstances under which technology has often been implemented. Teachers need more infrastructure, support, and incentive to teach online. Asking teachers to change their methods to conform to a new environment is likely to be no more effective than trying to duplicate their physical classroom structures digitally. As individual teachers gain experience with teaching online, they become more accommodating to it. When teachers who are more resistant are exposed to early adopters and those who are more familiar in general, their own perceptions begin to change. Further, exposure to online courses changes perceptions of quality, and as teachers’ perceive the quality of distance learning increasing, so does the likelihood that they will participate. Integrating teachers of varying experience levels into a social network that makes successes and accomplishments shared, and allows for open communication, can be a viable means of increasing comfort levels. If dedicated support personnel were also part of this network, one of the most restrictive barriers to faculty acceptance of new methods could be deconstructed by very passive means. Finally, allowing for overlap with, if not absolute inclusion of, student social networks could be very rewarding to teachers who genuinely care about interacting with their students. Transparency of student process, work, and feedback, may be a means through which teachers find value in new learning platforms.

A design department is already a social network of sorts. Students interact verbally and visually with each other and with faculty most of the time they are present in the studio. Designers tend to share interests and are sensitive to differences in personal tastes. We are capable of communicating with complex visual language and transmit culture in very controlled ways. The modern studio often serves as a common ground for a group of young individuals whom are already interconnected through multiple online social networks. It is a short conceptual leap from our current environment to
using a similar network to deliver information pertinent to students’ education, to give them freedom to control their own education, to share their work and processes in a way that works around the constraints of the physical classroom, and to allow access to other disciplines and experts. The online world that most of us occupy is built on user driven content. Students, and likely many teachers as well, already have these expectations for their interactive experiences. We as educators must begin to use our unique skills and methodologies as designers to fulfill these expectations in their learning experience, and meet them on their own ground.
Appendices

Introduction

Informed Consent to Participate in a Research Study

1. STUDY TITLE: Methods For Distance Education In Graphic Design
PRINCIPLE: Jason Richburg

You are being invited to participate in a research study. This consent form will provide you with information on the research project, what you will need to do, and the associated risks and benefits of the research. Your participation is voluntary. Please read this form carefully.

PURPOSE:
The following research is being conducted to gain insight into students and teachers experience with design classes. The information collected will inform the design process and provide a student and teacher end-user perspective.

PROCEDURES:
To be eligible for the study you must have taken at least one design related college course. Participants of the study will be asked a number of survey questions regarding their experience in the classroom setting, and their reactions to it. The duration of the study should not exceed 15 minutes per subject. A small group of participants may qualify for a followup interview. You will be allowed to opt out of this interview during the survey.

BENEFITS:
This research will not benefit you directly. However, your participation in this study will help to better develop the methods by which design education is delivered, and improve existing systems.

RISK AND DISCOMFORT:
There are no anticipated risks beyond those encountered in everyday life.
PRIVACY AND CONFIDENTIALITY:
Your study related information will be kept confidential within an alarmed space. Any identifying information will be kept in a secure location and only the researchers will have access to the data. Research participants will not be identified in any publication or presentation of research results; only aggregate data will be used.

COMPENSATION:
Participants will have the option of being included in a drawing for a $100 Target gift card. You will be prompted to provide your contact information later in the survey. You may elect not to participate. If you elect not to participate your survey data will still be used in this study. If you are a student participation in this survey bears no weight in any course, and your grades or class standing will not be effected in any way. The drawing will be take place on January 31, 2012.

VOLUNTARY PARTICIPATION:
Taking part in this research study is entirely up to you. You may choose not to participate or you may discontinue your participation at any time without penalty or loss of benefits to which you are otherwise entitled. You will be informed of any new, relevant information that may affect your health, welfare, or willingness to continue your study participation.

CONTACT INFORMATION:
If you have any questions or concerns about this research, you may contact Jason Richburg at 330.672.7856 or Ken Visocky O'Grady at 330.672.1353. This project has been approved by the Kent State University Institutional Review Board. If you have any questions about your rights as a research participant or complaints about the research, you may call the IRB at 330.672.2704.

BY SELECTING THE CHECK BOX BELOW, YOU ARE CONSENTING TO PARTICIPATE IN THIS STUDY.

School of Visual Communication Design
I have read this consent form and I voluntarily agree to participate in this study.
Preliminary Information

The following information will be used for demographic information, and to direct you to the appropriate survey questions.

1. In what state or U.S. territory do you currently attend, or teach college?

   State:  

2. Are you an undergraduate student, a graduate student, or a teacher?

   - Undergraduate
   - Graduate
   - Teacher (non-grad student)
### S1 Course Type

1. **What is your major, or area of focus?**
   - [ ] Graphic Design (Visual Communication Design, Illustration, Photo Illustration)
   - [ ] Other (please specify)
     
2. **Have you ever taken a distance learning course related to design?**

   (A distance learning course being defined as a course, lecture or studio, that is conducted without the physical presence of a teacher. These courses can include correspondence courses; online classes which feature recorded lectures or live video feeds; classes conducted in a classroom with recorded lectures or a live video feed of the teacher; learning modules; and virtual reality classrooms)
   
   - [ ] Yes
   - [ ] No
<table>
<thead>
<tr>
<th>S2 Course Type</th>
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<tbody>
<tr>
<td>1. Have you taken a traditional design studio course?</td>
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<tr>
<td>[ ] Yes</td>
</tr>
<tr>
<td>[ ] No</td>
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<td>T1 Course Type</td>
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<tr>
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<tr>
<td>☐ Yes</td>
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<td>☐ No</td>
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<td>T2 Course Type</td>
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<tr>
<td>1. Have you taught a traditional design studio course?</td>
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<tr>
<td>□ Yes</td>
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<td>□ No</td>
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Please answer the following questions as accurately as you can based on your experience with distance learning (DL) courses related to design. Please answer honestly, there are no right or wrong answers.

1. How many design related distance learning courses have you taken?

- [ ] 1
- [ ] 2–3
- [ ] 4–6
- [ ] 7 or more

2. In general did you expect the course(s) to be challenging?

- [ ] Yes, I expected the course(s) to be challenging
- [ ] No, I expected the course(s) to be easy
- [ ] I expected the course(s) to be no more or less challenging than any other course
- [ ] Other (please specify)

3. On average, how challenging did you find the course(s)?

- [ ] Extremely difficult
- [ ] Very challenging
- [ ] Average
- [ ] Not very challenging
- [ ] Extremely easy
<table>
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<tr>
<th>4. As a result of the difficulty of the course(s)... (please select only one)</th>
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<tbody>
<tr>
<td>I was under a great degree of class related stress the entire time I took the course(s).</td>
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<tr>
<td>I felt a great degree of class related stress at least once per assignment.</td>
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<tr>
<td>I felt a small degree of class related stress at least once per assignment.</td>
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<tr>
<td>I felt some class related stress at least once per semester.</td>
</tr>
<tr>
<td>I felt little class related stress during the course.</td>
</tr>
<tr>
<td>I felt no class related stress during the course.</td>
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<tr>
<td>Other (please specify)</td>
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<th>5. As a result of the expectations of the teacher(s)... (please select only one)</th>
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<tbody>
<tr>
<td>I did not edit my work after I felt it was complete.</td>
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<tr>
<td>I rarely edited my work before handing it in.</td>
</tr>
<tr>
<td>I usually edited my work before handing it in.</td>
</tr>
<tr>
<td>I thoroughly edited all of my work before handing it in.</td>
</tr>
<tr>
<td>I thoroughly edited all of my work before presenting it for group critique.</td>
</tr>
<tr>
<td>I obsessively edited my work during the entire course whether I expected the teacher to see it or not.</td>
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<tr>
<td>Other (please specify)</td>
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<tr>
<th>6. How confident are you in your ability to successfully use the skills that you developed in the course(s)?</th>
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<tr>
<td>Extremely confident</td>
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<tr>
<td>Somewhat confident</td>
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<tr>
<td>Neither confident, nor unconfident</td>
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<tr>
<td>Somewhat unconfident</td>
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<tr>
<td>Extremely unconfident</td>
</tr>
</tbody>
</table>
7. In your opinion, what is the most important skill, quality, and/or value that you developed through studying design, if any?
Please answer the following questions as accurately as you can based on your experience with distance learning (DL) courses related to design. Please answer honestly, there are no right or wrong answers.

1. Which of these choices best describes how you usually made edits to/iterations of each project throughout an assignment? Select all that apply.

   - [ ] I read the criteria for the assignment before beginning the projects, and worked on each project until I felt that I had reached the expectations. I usually did not revisit projects before they were submitted.
   - [ ] I completed each project in stages. I rechecked the criteria, allowing it to inform my understanding of the goals for the assignment, and made changes in response before submitting my work.
   - [ ] I completed each project in stages. I asked my teacher for feedback, and made changes in response before submitting my work.
   - [ ] I completed each project in stages. I asked my classmates for feedback, and made changes in response before submitting my work.
   - [ ] I completed each project in stages. I asked my peers outside of class for feedback, and made changes in response before submitting my work.
   - [ ] I didn’t realize that I was supposed to complete my work in evolving iterations.
   - [ ] None of these describe my process while working on individual projects.

2. In each course, how often did you directly communicate with your teacher?

   - [ ] At least once a week
   - [ ] At least once per assignment
   - [ ] At least once during the semester
   - [ ] Never
3. What form of communication did you engage in with your teacher(s) in your distance learning course(s)? Select all that apply.

- [ ] Face to face (office hours or scheduled meetings)
- [ ] By phone/text
- [ ] By email
- [ ] By discussion board
- [ ] By text chat (online)
- [ ] By video/voice chat
- [ ] By comments on graded assignments
- [ ] N/A (we never directly communicated)
- [ ] Other (please specify)

4. Which of the following best describes the subject that you most often discussed with your teacher? (Select all that apply.)

- [ ] Computer or online interface malfunctions
- [ ] Clarification of assignment criteria/applied techniques
- [ ] Overall progress in course (grades)
- [ ] Feedback on work
- [ ] Requests for extensions/leniency
- [ ] Personal issues
- [ ] N/A (we did not directly communicate)
- [ ] Other (please specify)

5. In general, before submitting my work I received feedback from my teacher on...

- [ ] every project.
- [ ] most of my projects.
- [ ] some of my projects.
- [ ] none of my projects.
6. On average, how often did you communicate with your classmates?

☐ At least once a week
☐ At least once per assignment
☐ At least once during the semester
☐ Never
Please answer the following questions as accurately as you can based on your experience with distance learning (DL) courses related to design. Please answer honestly, there are no right or wrong answers.

1. Based on your experience in the course(s), what is your general opinion of the design department? (optional)

2. What would you do to change the course(s)? (optional)

3. Do you have regular access to a webcam?
   - Yes
   - No

4. Which of the following best describes how comfortable you would be with participating in online group discussions about individual work via webcam?
   - Completely comfortable
   - Reasonably comfortable
   - A little uncomfortable
   - Very uncomfortable

5. Have you ever taken a traditional design studio course?
   - Yes
   - No

6. How many traditional design courses have you taken?
   - 1–3
   - 4–6
   - 7 or more
7. If you have taken a traditional design course which do you prefer?

- [ ] Distance learning courses
- [ ] Traditional design studio courses
- [ ] N/A (I haven’t taken a traditional design course)
Please answer the following questions as accurately as you can based on your experience with traditional studio design courses. Please answer honestly, there are no right or wrong answers.

1. How many traditional design studio courses have you taken?
   - [ ] 1
   - [ ] 2–3
   - [ ] 4–6
   - [ ] 7 or more

2. In general, did you expect the course(s) to be challenging?
   - [ ] Yes, I expected the course(s) to be challenging
   - [ ] No, I expected the course(s) to be easy
   - [ ] I expected the course(s) to be no more or less challenging than any other course
   - [ ] Other (please specify)

3. On average, how challenging did you find the course(s)?
   - [ ] Extremely difficult
   - [ ] Very challenging
   - [ ] Average
   - [ ] Not very challenging
   - [ ] Extremely easy
4. As a result of the difficulty of the course(s)... (please select only one)

- I was under a great degree of class related stress the entire time I took the course(s).
- I felt a great degree of class related stress at least once per assignment.
- I felt a small degree of class related stress at least once per assignment.
- I felt some class related stress at least once per semester.
- I felt little class related stress during the course.
- I felt no class related stress during the course.
- Other (please specify)

5. As a result of the expectations of the teacher(s)... (please select only one)

- I did not edit my work after I felt it was complete.
- I rarely edited my work before handing it in.
- I usually edited my work before handing it in.
- I thoroughly edited all of my work before handing it in.
- I thoroughly edited all of my work before presenting it for group critique.
- I obsessively edited my work during the entire course whether I expected the teacher to see it or not.
- Other (please specify)

6. How confident are you in your ability to successfully use the skills that you developed in the course(s)?

- Extremely confident
- Somewhat confident
- Neither confident, nor unconfident
- Somewhat unconfident
- Extremely unconfident
7. In your opinion, what is the most important skill, quality, and/or value that you developed through studying design, if any?
Please answer the following questions as accurately as you can based on your experience with traditional studio design courses. Please answer honestly, there are no right or wrong answers.

1. Which of these choices best describes how you usually made edits to/iterations of each project throughout an assignment? Select all that apply.

- I read the criteria for the assignment before beginning the projects, and worked on each project until I felt that I had reached the expectations. I usually did not revisit projects before they were submitted.
- I completed each project in stages. I rechecked the criteria, allowing it to inform my understanding of the goals for the assignment, and made changes in response before submitting my work.
- I completed each project in stages. I asked my teacher for feedback, and made changes in response before submitting my work.
- I completed each project in stages. I asked my classmates for feedback, and made changes in response before submitting my work.
- I completed each project in stages. I asked my peers outside of class for feedback, and made changes in response before submitting my work.
- I didn’t realize that I was supposed to complete my work in evolving iterations.
- None of these describe my process while working on individual projects.

2. On average, how often did you directly communicate with your teacher(s) outside of class? Please select only one response.

- At least once a week
- At least once per assignment
- At least once during the semester
- Never
3. In general, what form of communication did you engage in with your teacher outside of class? Select all that apply.

- [ ] Face to face (office hours or scheduled meetings)
- [ ] By phone/text
- [ ] By email
- [ ] By discussion board
- [ ] By text chat (online)
- [ ] By video/voice chat
- [ ] By comments on graded assignments
- [ ] N/A (we never directly communicated outside of class)
- [ ] Other (please specify)

4. Which of the following best describes the subjects that you most often discussed with your teacher outside of class? Select all that apply.

- [ ] Computer or online interface malfunctions
- [ ] Clarification of assignment criteria/applied techniques
- [ ] Overall progress in course (grades)
- [ ] Feedback on work
- [ ] Requests for extensions/leniency
- [ ] Personal issues
- [ ] N/A (we did not directly communicate outside of class)
- [ ] Other (please specify)

5. In general, before submitting my work, I received feedback from my teacher on...

- [ ] every project.
- [ ] most of my projects.
- [ ] some of my projects.
- [ ] none of my projects.
6. On average, how often did you communicate with your classmates outside of class? Please select only one response.

☐ At least once a week
☐ At least once per assignment
☐ At least once during the semester
☐ Never
Please answer the following questions as accurately as you can based on your experience with traditional studio design courses. Please answer honestly, there are no right or wrong answers.

1. Based on your experience in the course(s), what is your general opinion of the design department? (optional)

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2. What would you do to change the course(s)? (optional)

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3. Do you have regular access to a webcam?

- [ ] Yes
- [ ] No

4. Which of the following best describes how comfortable you would be with participating in online group discussions about individual work via webcam?

- [ ] Completely comfortable
- [ ] Reasonably comfortable
- [ ] A little uncomfortable
- [ ] Very uncomfortable
Please answer the following questions as accurately as you can based on your experience with distance learning (DL) courses related to design. Please answer honestly, there are no right or wrong answers.

1. How many design related distance learning courses have you taught?

- [ ] 1
- [ ] 2–3
- [ ] 4–6
- [ ] 7 or more

2. In your opinion, what is the most important skill, quality, and/or value that design students develop in college, if any?

3. On average, how often did you directly communicate with your distance learning students?

   Please select only one response.

   - [ ] At least once a week
   - [ ] At least once per assignment
   - [ ] At least once during the semester
   - [ ] Never

4. What form of communication did you engage in with your distance learning students?

   Select all that apply.

   - [ ] Face to face (office hours or scheduled meetings)
   - [ ] By phone/text
   - [ ] By email
   - [ ] By discussion board
   - [ ] By text chat (online)
   - [ ] By video/voice chat
   - [ ] By comments on graded assignments
   - [ ] N/A (we never directly communicated)
   - [ ] Other (please specify)
5. Which of the following best describes the subjects that you most often discussed with your students when you communicated with them directly? Select all that apply.

- Computer or online interface malfunctions
- Clarification of assignment criteria/applied techniques
- Overall progress in course (grades)
- Feedback on work
- Requests for extensions/leniency
- Personal issues
- N/A (we did not directly communicate)
- Other (please specify)

6. In general, before they submitted their work my distance learning students got my feedback on...

- every project.
- most of their projects.
- some of their projects.
- none of their projects.

7. How many hours a week did you expect to devote to preparation and grading per distance learning course?

- Less than 1
- 1–2
- 3–6
- More than 6
8. How confident were you in the course material and lectures that were provided for you to deliver to your class(es)?

- [ ] Extremely confident
- [ ] Somewhat confident
- [ ] Neither confident, nor unconfident
- [ ] Somewhat unconfident
- [ ] Extremely unconfident

9. How confident are you in your students' ability overall to successfully use the skills that they developed in the course(s)?

- [ ] Extremely confident
- [ ] Somewhat confident
- [ ] Neither confident, nor unconfident
- [ ] Somewhat unconfident
- [ ] Extremely unconfident

10. Would you like to teach a distance learning course again? Please share the most important reason why or why not. (optional)

11. Have you ever taken a distance learning course related to design?

- [ ] Yes
- [ ] No
Please answer the following questions as accurately as you can based on your experience with traditional design studio courses. Please answer honestly, there are no right or wrong answers.

1. How many traditional studio courses have you taught?
   - □ 1
   - □ 2–3
   - □ 4–6
   - □ 7 or more

2. In your opinion, what is the most important skill, quality, and/or value that design students develop in college, if any?

3. On average, how often did you directly communicate with students in your studio course(s) outside of class? Please select only one response.
   - □ At least once a week
   - □ At least once per assignment
   - □ At least once during the semester
   - □ Never

4. What form of communication did you engage in with students in your studio course(s) outside of class? Select all that apply.
   - □ Face to face (office hours or scheduled meetings)
   - □ By phone/text
   - □ By email
   - □ By discussion board
   - □ By text chat (online)
   - □ By video/voice chat
   - □ By comments on graded assignments
   - □ N/A (we never directly communicated outside of class)
   - □ Other (please specify)
5. Which of the following best describes the subject that you most often discussed with the students in your studio course(s) when you communicated with them directly outside of class? Select all that apply.

- [ ] Computer or online interface malfunctions
- [ ] Clarification of assignment criteria/applied techniques
- [ ] Overall progress in course (grades)
- [ ] Feedback on work
- [ ] Requests for extensions/leniency
- [ ] Personal issues
- [ ] N/A (we never directly communicated outside of class)
- [ ] Other (please specify)

6. In general, before submitting their work my students got my feedback on...

- [ ] every project.
- [ ] most of their projects.
- [ ] some of their projects.
- [ ] none of their projects.

7. How many hours a week did you expect to devote to preparation and grading per studio course?

- [ ] Less than 1
- [ ] 1–2
- [ ] 3–6
- [ ] More than 6

8. How confident were you in the course material and lectures that were provided for you to deliver to your studio class(es)?

- [ ] Extremely confident
- [ ] Somewhat confident
- [ ] Neither confident, nor unconfident
- [ ] Somewhat unconfident
- [ ] Extremely unconfident
9. How confident are you in your students' ability overall to successfully use the skills that they developed in the studio course(s)?

- [ ] Extremely confident
- [ ] Somewhat confident
- [ ] Neither confident, nor unconfident
- [ ] Somewhat unconfident
- [ ] Extremely unconfident

10. Would you like to teach a traditional studio course again? Please share the most important reason why or why not. (optional)

11. Have you ever taken a distance learning course related to design?

- [ ] Yes
- [ ] No
### Exit Questions

By submitting your contact information, you will be entered into a random drawing to receive a $100 Target gift card. Your contact information will be kept completely private, and you will not receive any unsolicited contact. This is optional, and your survey results will still be included in this study if you choose not to participate in the prize drawing.

1. Please enter your email address. This information will be used to notify you if you are selected in the prize drawing. If you choose not to enter your contact information you will not be entered into the drawing, but your survey response will still be included in this study.

   **Email Address:**

2. A small number of the participants in this survey will qualify for further interview questions (to be determined after data analysis). If you should be one of those individuals do you agree to be contacted via email for a brief interview? You will receive no additional, unsolicited contact beyond this request, and you may decline at any time. Your response does not effect your eligibility for the prize drawing.

   - [ ] Yes, I agree to be contacted by email for a brief interview if I qualify.
   - [ ] No, I do not wish to be contacted.
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<th>Thank You</th>
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<td>Your time is greatly appreciated.</td>
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References


Tabata, Lynn, and Johnsrud. “The Impact of Faculty Attitudes Toward Technology, Distance Education, and Innovation.” Research in Higher Education 49, no. 7 (November 2008): 625–646.


