# Questioning the role of online education in the architectural design studio

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ABSTRACT: The recent significant increase in programs offering general education online is causing much debate about how it does, or how it will, affect architectural education specifically. Lecture-based online courses have been more openly received as an opportunity to disseminate instruction to a larger and far-ranging audience. While not without its flaws, the method translates well to online delivery. On the other hand, teaching design studios via the same method has been cause for much more concern. The strength of the studio methodology has long been based in its immediacy of face-to-face interaction between teacher and pupil as well as the camaraderie and community of a shared experience; assets harder to translate over distance. Since traditional studio methodology relies so heavily on people being together in the same physical space, many do not understand how this pedagogy can be recreated at a distance. Through a university-funded research grant I have been studying online studio education through four programs that have been teaching online studios for several years and therefore have a solid track record. I have distilled general patterns common to all programs into categories of *Advantages*: Opportunity, Documentation and Democratic and *Challenges*: Separation, Methodology and Technology. We now have a solid first set of results with which we can evaluate the problem to understand which initial concerns are still valid, which may be unfounded and which is the best direction to proceed.

## INTRODUCTION

The advent of new technology in any field is often met with a mix of heightened expectations and cautious trepidation so an anxious reaction to the introduction of online technology into architectural education is not surprising. Like CADD and BIM technologies that preceded it, the technical aspects of online instruction, just emerging from *its* infancy, will likely overcome some of the initial misgivings but I believe there are deeper pedagogical questions not solvable by improved technology alone. In distance learning, computer technology is the substitute interface for physical presence but can it (and if so when will it) develop far enough to equal the personal interaction of one-on one instruction? During my research I have encountered a good deal of doubt from educators about the effectiveness of online architectural education in general and even greater apprehension about distance studio education in particular. Practically all faculty members teaching now were educated under the traditional onsite studio format. With its face-to-face exchange of ideas of student and professor, immediacy of feedback and camaraderie among peers, it has proven to be an effective method for decades. Since this studio methodology relies heavily on people being together in the same physical space, many faculty members do not understand how this smooth-running pedagogy can be recreated at a distance. Several faculty currently teaching online studios admitted even they had doubts as to how it would work when they first started (but most have since been converted).

To understand where online studio education stands and where it may be going, I spent the past year studying the three programs recognized by ACSA in the US and one in Europe that have been teaching online studios for several years so therefore have a solid track record.[1] As a result of a research grant I received from my university, I researched programs at Boston Architectural College (BAC), The Academy of Art University (AAU) in San Francisco and Lawrence Technological University (Lawrence Tech) outside of Detroit as well as the European school of EU University in Spain. Through a combination of email and phone interviews, in-person visits to the school and participation in online design reviews, I have been able to distill general patterns of both the advantages and challenges common to all the programs based on the responses I received.[2] My disadvantage of not having taught an online studio was compensated by my ability to serve as an impartial outside observer who could objectively assess what is working well and what problems still exist.

First it is best to establish the logistics of these online programs in terms of basic numbers. All of the programs I studied were graduate level programs in schools of architecture. The shorter length of the masters programs better fits with online programs that are easier to coordinate over a shorter time frame. (While there are plans for starting undergraduate online programs, these are still too undeveloped to evaluate) The average length of the online programs varies but for those with prior architecture diplomas the degree can be earned in 3 to 5 semesters. For those with non-design related degrees the time increases to about 7 to 8 semesters. Each studio contains 8 to a maximum of 15 students although many can be smaller due to lower enrollments in a given semester. All these schools also offer onsite programs

so accreditation standards for NAAB are exactly the same. It is up to the schools to prove to the accreditation board they are meeting the criteria no matter what the delivery method. A side benefit being courses can often be taken in a combination of online and onsite if the student so chooses. However, regional university accreditation requirements vary and may be stricter.

## 1.0 THE BENEFITS – SHARED ADVANTAGES

### 1.1. Opportunity

By far the most cited benefit to online education is opportunity; the opportunity for students, faculty, consultants and critics to share ideas from anywhere in the world with an Internet connection. By breaking down the barriers of distance through computer technology, location is greatly reduced as an obstruction to a quality education. All online architecture programs I researched are at the graduate level because this is the main audience. Students who have an undergraduate degree and have been out of school for several years may desire to add a Master's degree to improve their position or change a career. However, by this time many have jobs and/or spouses with careers they cannot or do not want to leave for personal or financial reasons. Some also have started families and can't easily uproot the children for two years to obtain another degree. Distance learning allows them to live where they want and keep their jobs while having access to high quality faculty instruction. As an example, during one online review I participated in for BAC, students were linked in from New York, North Dakota, Connecticut, Massachusetts, Texas and Missouri. Programs that do not have a residency requirement (in person visits to the school for a short period of time) are able to attract students internationally. The need to travel to the school once at the beginning of the program or up to once every semester usually limits that program to US based students. AAU's program does not have a residency requirement so that allows them to draw more students from abroad. For example, a recent studio at AAU included members from Brazil, California, St. Louis, Dubai, Indonesia and Taiwan.

Just like students, faculty members also do not need to be onsite to teach. Most programs do have a group of onsite faculty who form the body of instructors at the main school. But online presents special opportunities for studios with professors from abroad. For example at AAU a professor in Finland taught a studio with project sites based in Finland, Tokyo and London. Which brings up another benefit, the ability to receive information from professionals around the world. Through online reviews, foreign critics and consultants can share their expert knowledge with the students such as in one recent studio where the critics were connecting from Oakland, London and Bangalore. It is not so important if the leader in a certain field is not local as you can bring them into the conversation via online web conferencing. A drawback to this is the time difference around the world, as you need a dedicated critic who is willing to join in a review at four o'clock in the morning. However, this type of communication schedule mimics the similar situations the students will find in practice. The architecture profession is increasingly working in collaborative groups around the globe that communicate through web conferencing, the same method used in studio.[3] Receiving this type of real world experience before they graduate is something not usually found in a typical onsite education.

### 1.2. Documentation

In a typical onsite studio drawings are done on a variety of media, vellum, trace, napkins, etc., and may be presented piecemeal through the semester. Because of this work can get lost or destroyed or forgotten. With an online studio all work must be posted in regular intervals online, forming an accurate record of all written, drawn and built work. This work is continually available to the student and professor so there is clear documentation of progress through the semester. Reviews are sometimes audio/video recorded as well so the student can return to reevaluate their critique two or three times to make sure they comprehend all that was said. This collected work also makes it easy to access the necessary documents for assessment when needed. Instead of collecting only high pass and low pass work, all the work can be captured. The requirement for students to constantly post work keeps them on schedule and aids in their preparation. If a project is late there is an obvious empty folder that all students and faculty can see. The student must be disciplined to submit work on a regular basis or it will show to all.

### 1.3. Democratic

The online studio introduces a new social dynamic not found in the onsite model. The Internet can act as a leveling device to give each student's opinions and ideas greater equality, exposure and consideration. In an onsite studio a few talkative students rise above the rest and may dominate the conversation or direction of the studio. In the online format where people are more anonymous, shy students are more willing to speak up (or rather, type up) outside the group dynamic. Ironically, the physical isolating effect of the Internet (that I will discuss shortly) can actually be helpful to quiet students. Live video streaming of peoples faces is sometimes problematic due to slower bandwidth speeds so most communication is done without it

and therefore the student may feel more comfortable contributing.  Not having to worry about being watched or how your appearance is being perceived helps combat the universal fear of public speaking.

## 2.0 THE CHALLENGES

### 2.1. Separation
Of the challenges that still face online studio instruction, I think the greatest is what many might suspect, the physical separation of students from faculty, each other and critics.  Because the studio instructional pedagogy leans so heavily on face-to-face contact, the interconnectedness of a room filled with students, pens (or keyboards) in hand, bouncing free-flowing ideas off each other, is just not yet replicable by computer technology and is unlikely to happen in the near future.  So compensating for the lack of intimacy and community is a major challenge. The directors and faculty of the programs have done an admirable job in utilizing computer software to try to recreate a community.  When these fall short, the tech savvy students in our digitally connected media age have taken the matter into their own hands to create unofficial social networks to connect to each other. (Students even Skype with their laptops open and the camera pointed at themselves for hours to recreate the sense of working together with others.)  But no technology yet supplants the value of physically coming together as a group as seen by the great significance programs place on the sense of community created by their residency programs.  Schools that have them view them as critical to the success of the program and those that don't are considering adding them.  Bringing everyone together at the beginning of a program or on a regular once-a-semester basis allows the group to bond, which subsequently makes the online community stronger.  To further strengthen this, students are usually kept together in a cohort and take all their studio courses together over the length of entire program.  I was invited to visit BAC for one of their once-a-semester residency program they call the Intensive week when all students travel to Boston and stay as a group in a hotel for a concentrated 8 days of work.  During this time, bonds between students are created or renewed by "living through" the rigorous requirements as a group.  Seeing this confirmed the power of the residency program and I found it slightly ironic and telling that one of the keys to distance learning is physical presence.

Beyond building community, the residency programs also compensate for another challenge of online studios, the loss of immediacy; the ability to quickly and clearly interchange ideas.  Online studios have reduced ability to directly communicate what is being asked.  This is especially true for career changers without an undergraduate degree in an architecture-related field.  They do not fare as well as students with design-related degrees who are already familiar with the culture and "language" of the architecture studio. (Because of this, most schools studied only accept students with architecture-related degrees) For example, an architecture student would understand what to do if asked to build a model but a student coming from an accounting background may not understand what was required. They say, "Show us an example".  Having the ability to immediately see and hold various examples of the physical object and precisely point out the details is a benefit of onsite studios not enjoyed by online.

The separation also makes it easier for the distractions of real life to interfere.  Job deadlines and family emergencies have greater effect and students may "disappear" for a while without any communication.  When a student or instructor doesn't post, the other can get annoyed.  One school estimates that 10%-15% of its students are less engaged than desired.  Keeping on track requires much greater discipline.  Some online students become so frustrated with the distance that they move to the university location to take classes on-site. Most programs employ a once a week synchronous meeting to "bring everyone together" at a common time but the one-on-one desk crits can happen separately at any hour of the day or night.  Good time management skills for both students and faculty are crucial.

### 2.2. Methodology
The online studio teaching methodology is very different from traditional teaching styles and requires instructors with a totally different mindset.  Some professors accustomed to teaching a certain way for years do not adjust well to the online method. While many instructors admit to being skeptical at the beginning, any teacher asked to teach online must be open and willing to adjust their methods.  All instructions must be very specific (even more so with career changers) so all project documents must be meticulously written as there is less opportunity to verbally embellish "in class".  This extra preparation means that developing an online studio often takes *more* time to prepare than a typical studio.  Professors must also be willing to teach on a flexible time schedule.  Students with jobs and families have little free time to converse so much communication is done in the evenings or on weekends.  Foreign students in greatly different time zones make this even more challenging.   Finding faculty to work on such erratic schedules takes patience and effort.

**2.3. Technology**

When I first began my research I was looking forward to discovering which fantastic software programs and computer hardware gadgets were being used in online studios. I imagined wonderful seamless graphic interface software and smart tablets that made desk crits a breeze. I was a bit surprised to learn that a major challenge to online studios is the limitations of digital technology that have not kept pace with the pedagogy. Since AAU has a large population of distance learners in many majors, they found it feasible to develop proprietary software Learning Management System (LMS) that handles much but not all of the communications. They, like the other programs, also rely on a series of existing web conferencing and communication software to fill in the blanks. Over the years a variety of software has been tested by the schools and retained or replaced based on effectiveness. The list includes programs like Blogger, Voice Thread, WebEx, Adobe Connect, Moodle, Facebook, Skype, Twitter WhatsApp and more, but no one software currently dominates. Currently studios can use up to *four* or more different software programs to manage assignments, communicate between instructor and students, socially interface between students and conduct reviews. However singular programs that combine all functions into one are rumored to being developed so interface communication will likely improve with time.

Computer hardware has also proven to be less than adequate for the online pedagogy. Special equipment is either not available or easily affordable by both the schools and the students. The laptop remains the most commonly utilized piece of hardware, but since most people own one that is also a great equalizer. I was fortunate to be a guest critic for a couple of online reviews for the BAC in which all faculty, students and reviewers "attended" in different states through the WebEx program on their laptops. Not having to own special equipment makes it easier for nearly anyone to participate. Because the students were well prepared, the review overall went very smoothly. Being able to see only one image at a time on the screen and flipping back and forth can be frustrating, but digital onsite studios often encounter this same problem. I did not miss seeing a streaming video image of the students themselves but a static picture might have been beneficial to put a face to a name. On the other hand, judging the work solely on its own merits without any cultural biases is a more democratic process. Since my computer was not set up with quality microphones and speakers, it was recommended I call in via a landline phone to improve audio clarity and reduce the bandwidth usage. This worked fine but holding the phone to your ear for 2 hours gets tiring. Having the best software and hardware does make communication easier but the need to Gerry rig it all together with current computer technology is not the optimal approach, leaving plenty of room for improvement.

**CONCLUSION**

Maybe online education will never adequately replace traditional onsite instruction regardless of how much technology improves. But that may be beside the point. The greater question may be is there a need to replace our current methodology or can we use online learning as one of many tools in the toolbox to enhance of our existing already proven methods? Online education opens up fantastic new opportunities for exchange of knowledge regardless of location but it may not be the best solution for everyone. If we learned our lesson from CADD and BIM, we should not dread the technology aspect of online as a looming problem. In that way we can embrace online teaching as another pedagogical approach to increase the effectiveness of our teaching by adding a whole new demographic to enrich architectural education.

**NOTES**

[1] See: http://www.acsa-arch.org/schools/special-programs/online-architecture-programs

[3] *It's a very good time to develop your firm's collaboration skills,* Andrew Pressman, Architectural Record, April 2009