

# Architectural Pedagogy: Designing the ‘Online’ Design Education

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**Abstract** Architecture and related fields involve and evolve around designs and discussions. For architecture schools and design teachers, this has been an issue in the recent present. Due to the pandemic, it has been difficult to be physically present and discuss design, give students feedback, or to simply sketch and show how their designs can improve. The idea of putting pen to paper- or in this case pencil to a tracing is no more an option. So how do you overcome this?

Here comes the idea of a Digital Education System. This paper talks about gaining inspiration from E-platforms and MOOCs (Massive Open Online Courses). Creating a university portal where all information is under one roof. Creating modules and designing rubrics to ensure systematic completion of the course. Trying out various tools that help bridge the gap between just talking to drawings and sketching- like Google Jamboard, Creately, etc. Coming up with creative ways to teach – like adding videos, pop-quizzes in the lecture as the visual attention span in online education is even less as compared to teaching in classrooms. Ultimately the goal is to offer a well-rounded education by exploring this online territory.

*Keywords* —Creative learning approach, digital education system, design modules, engaging content, exploring E-sources.

## I. INTRODUCTION

The current scenario has shaken the education system to its very core. As students cannot physically be present in schools and colleges, this has compelled teachers all over the world to set up online classes to meet virtually for learning. An array of MOOCs (Massive Open Online Courses) and E-learning platforms have also developed over the years (Edx, Coursera, Khan Academy, etc.). For the architecture field, the online learning can be a bit challenging mainly because a lot of our studios are based on discussions and debates, where one sketches and draws to communicate his/her design. This especially is true for design studios where teacher-student interaction is key to get the student through the entire design process right from the conceptual stage to the final design execution. When it comes to online education there are a bit of shortcomings, for instance, a student can log in to the lecture but it isn’t clear how attentive the student is.

Studies throughout the years reveal that an average attention span between the modern age students is about 10-15 minutes in an offline studio. (Davis, 1993) [1] states that “student attention during lectures tends to wane after approximately 10-15 minutes.” (Wankat, 2002) [2] states “Although student attention is high at the start of a lecture, it has reached a low point after 10-15 minutes.”

This was based on offline lecture modules, while the studies suggest that in an online studio it is less than 5 minutes. This is due to the technology-driven society and youth, where a plethora of apps want to grab your attention by just a ping of notification. (Kefalis, Kontostavrou, and Drigas,

2020) [3] suggest that playing games have actually given great results to get focused, undivided attention. Students respond to this quite well as they know that if they pay attention they get points and their score increases. So if you use the gaming techniques of points and scores, it could probably help in the students being more attentive.

Harvard has come up with a website (Harvard University, 2017, Digital Giza, Retrieved from <http://giza.fas.harvard.edu/>) [4] which lets you learn all about the Egyptian Civilization. All data regarding Egypt from photos, drawings, references, papers, etc. are all compiled under this website. They have started this unique 3D visual experience where you can visit and see pyramids virtually like a game. Controlling the screen and movement from your keyboard you roam around the pyramids and get the spatial experience. This gaming technology really helps in grabbing the young user’s attention at the same time educating them about space and architectural history in a different way.

## Methodology: Conducting an Online Survey

### A. Methodology: Questionnaire

To get an idea of how architecture students are feeling of this abrupt shift of studio-to-virtual design education, I had conducted an online survey through Google Forms (Shinde, S., 2020, September 23, Questionnaire for Research Paper, Retrieved from [https://docs.google.com/forms/d/e/1FAIpQLScQDqyUpNyVpMKXTwoM1Bp99ISQ8LKUAtA0foRdOT0YRA9Fw/vjewform?usp=sf\\_link](https://docs.google.com/forms/d/e/1FAIpQLScQDqyUpNyVpMKXTwoM1Bp99ISQ8LKUAtA0foRdOT0YRA9Fw/vjewform?usp=sf_link)) [5] in which students from various architecture colleges from across Maharashtra participated.

About 100 students participated ranging from 2<sup>nd</sup> to 4<sup>th</sup> year B. Arch. I asked them questions based on design lectures. When asked about the platform used for online design lectures, the majority voted on Google classrooms and a few on Zoom. Majority opted for Google Classroom as their platform for submitting assignments. This indicated that these platforms have an easy user interface and are versatile.

1. What online platform does your institution use for design lectures?

100 responses

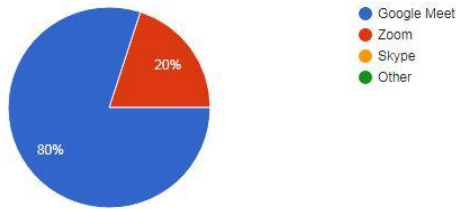


Fig. 1

2. Where do you submit your assignments?

100 responses

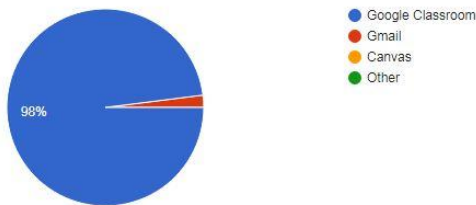


Fig. 2

Figure 1 and 2 showing use of online platforms for design lectures and submissions. Credits: Author When asked about the duration of design lectures and time for submissions most of them opted for a 2 hour 15 minutes lecture as one to one discussions take time online for a class of more than 30 students.

3. What should be the ideal duration of design lectures?

100 responses

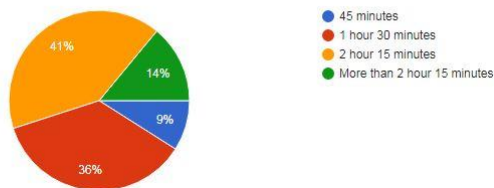


Fig. 3

Figure 3 showing the ideal duration for design lectures. Credits: Author

When asked how the design lectures would be more interesting and creative, majority of them wanted to add some videos related to the topic, pop quizzes at the end of the studio sessions and more teacher and student interaction.

5. How can online learning be more interesting?

100 responses

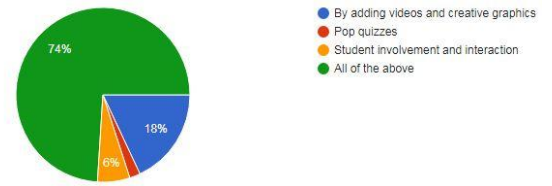


Fig. 4

Figure 4 showing how online lectures can be more interesting.

Credits: Author

Offline studios had a lot of student-teacher interaction, this is somehow missing in these online design sessions. This can be observed in the pie chart below:

6. Would you like an informal video call once in 2 weeks or monthly to chat with teachers and your classmates and do some different activities?

100 responses

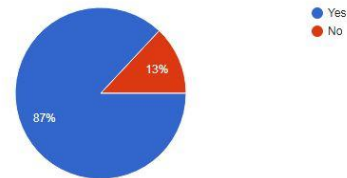


Fig. 5

Figure 5 showing need for informal meetings to have an emotional connect with the students. Credits: Author

The monotonous screen-looking needs to be broken somehow and made diverse.

When asked if they would prefer an orderly assignment format with modules, scheduled submission times and deadlines, (87%) majority answered yes.

As online learning is a fairly new concept, many teachers are yet to figure out the details and fine-tune the courses because of the time constraint or lack of resources. In this case, an already available e-learning course from a reputed university can help bridge this gap. E-platforms offer courses for free (audit) and at a price if you want a certificate.

For instance, Edx –offers a wide variety of architecture courses from reputed universities all across the globe. (Harvard University, Massachusetts Institute of Technology, 2012, May, Edx Architecture Courses, Retrieved from <https://www.edx.org/course/subject/architecture>) [6].

The syllabus is spread out through the weeks and every assignment has a quiz at the end to gather the extent to which the lecture was understood. As part of their semester, students can take an online course from such MOOCs and after successful completion of this course, they will be given some credits. This can make the students aware of the global scenario of architecture education, increase interaction with students from all over the world and also

give a dimension to the already built-in course offered by their institution.

When asked whether they would like this, the majority of the students came in favor of this idea.

8. Would you like completing an online course from an e-learning platform as part of your semester?

100 responses

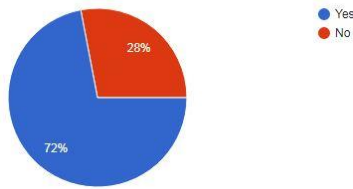


Fig. 6

Figure 6 showing students' inclination towards an online course incorporated in the syllabus. Credits: Author

When asked whether they liked/disliked the online system the vote split equally where half liked e-learning while the other half preferred studios and one-to-one interactions. Few also raised issues like bad network connectivity, longer hours spent staring at the computer or mobile screen and lack of engagement.

The survey concluded by asking the students what would make the online classes feel more like design studios and the response was overwhelming! Many talked about including fun graphics and making studios more creative and spontaneous. Some wanted to divide the students into groups so faculties can focus on designated groups instead. Some wanted to incorporate software and live supervisions in the studio sessions to make the studios a bit more normalized and real.

## II. IMPLEMENTATION

Based on this extensive online survey, I tried to cater to the needs of the students and come up with a few pointers to help the online design sessions:

1. Universities and colleges should come up with their own learning portals. Every student will log in with their credentials.
2. Year-wise discretion would be then set up and subjects according to the year will be added.
3. Every subject will be sub-divided into modules.
4. Systematic completion of these modules will be done with the help of a rubric system that will ensure an orderly submission. For example, the student has to first finish and complete topic 1 to go to topic 2.
5. Assigning grades to individual modules, scheduled submissions and deadlines will then help in a much simplified and efficient approach.



Fig. 7

Figure 7 showing things students pay attention to. Credits :(Gutierrez, 2017, Disruptive Learning)

Student engagement in an online teaching format can be primarily achieved through some of the techniques mentioned in (Gutierrez, 2017, Disruptive Learning, Retrieved from <https://www.shiftelearning.com/blog/bid/351150/10-things-that-learners-pay-attention-to-and-how-to-use-them-in-elearning>) [7].

### 1. Problem Solving

If given with a tricky situation or a genuine problem instead of just stating facts, students get more excited and involved in the learning process. They come up with new ways to tackle a basic problem and that helps them understand things better. In online design studios, this can be achieved through let's say, giving them a design topic and letting them come up with the design brief with appropriate areas through discussions and debates. This helps their understanding of spatial requirements way better than if simply given them a pre-formatted brief with all areas mentioned.

### 2. Comparisons and Controversies

Comparing with real-life scenarios or day to day life can encourage student's ability to relate and reflect. This can be implemented in design lectures too- so for example designing furniture or to build for visually impaired people, the student can walk around his/her house and compare and contrast his findings and can then come up with a better understanding of the demands of that user group.

### 3. Visuals

The strongest and most active sense when it comes to online learning is sight. Our social media takes maximum advantage of this to keep their users engaged in their apps and scroll along the feed. Visual memory can be categorized into two basic types- 1. Short term memory lasts for only a couple

of seconds/minutes, and 2. Long-term memory lasts longer and can be recalled after a considerable amount of time.

(Gertsch and Ossher, 2018) [8] state that long term visual memory can have a profound effect on academics.

Using this to our advantage we can add eye-catching graphics, GIFs, creative videos and presentations can make understanding more fun and keep the student interested.

#### **4. Questions**

Similar to comparison, it can help a student to think rather than just accept any kind of information.

#### **5. Emotions**

Implementing this in online learning is difficult but achievable. As we have to ensure maximum engagement of students, turning videos on through the studio design discussions can really help connect in a more real way in this pseudo-reality.

#### **6. Stories**

Narrating interesting and memorable stories in lectures can help bond with the students and make them more comfortable in the studio.

#### **7. Contrast**

Designing your studio sessions in such a way that they aren't very monotonous. So after 30 minutes of discussion you can have a 5 minute break or insert a short fun segment, before resuming with the discussions.

#### **8. Brevity**

Keeping the matter short and to the point especially in PowerPoint presentations to get the point through. Your explanations should explore a number of examples but shouldn't go off the topic either. In an online format we need to achieve a pace that is not too short but also not too time consuming. Balance is key.

#### **9. Lists**

Highlighting main points by writing down a list or pointers can achieve in brevity. Lists are a good way of providing the said information in a concise way.

Design as a subject has always been more interactive and the studio one to one sessions helped in achieving that interaction. Individual discussions based on student designs where the teacher would approach the student's desk and sketch and discuss ideas and design problems. There are a couple of tools online that can help achieve that level of discussion. For e.g., The Google Jamboard is a great software to scribble and draw. One can simply drop in a jpg of the design and share it with the faculty. The teacher can then draw in with a marker, add sticky notes, and so on. The Jamboard comes with a variety of tools like marker pens,

eraser, notes, insert images and shapes, add text, or use the laser option to point at a certain part of the drawing.

Another similar software is Mural where one can brainstorm, draw and involve other people in the space to add to the thought process simultaneously.

### **III. CONCLUSION**

The online experience can be enhanced by implementing all the above methods and techniques. But the core of any successful lecture is how the teacher is able to grab hold of your attention and add a personal touch to the narrative. A teacher is like a story-teller. There are millions of architecture and design videos on YouTube that can be accessed merely by a click of a button then why will the student listen and attend your lecture? How can you make the design experience more engaging? This needs to be learned and explored. Architecture studios are not like regular studios, there are discussions, debates, the flow of ideas and this has to be followed through in the online teaching format as well.

No doubt that because of a few restrictions, we cannot teach everything online like site visits, market surveys, etc. and therefore need to rely on web sources and videos to let the students understand the workings and the concepts in a better way.

The practice of question-answer session needs to be replicated in the online classes as well. It isn't possible to answer every query every day. Students need to feel that connection with the teacher and so an informal discussion session can be conducted once in 2 weeks or once in a month to help keep that bond intact. Similarly, leeway should be given for assignment submission due to a lack of proper resources.

Teaching for the sake of completing the syllabus should never be our goal. Our goal should be to produce well-rounded, aware, and humble individuals who care for the needs of the society and are sensitive in their design approach. Then it shouldn't matter what medium or platform you are using to reach that ultimate goal.

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