Integration of Lightboard as a Tool for Studio-Based Teaching and Learning

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Abstract. Students faced some challenges in studio-based classes, especially in creative adverting studies. They are inundated with many theoretical concepts that they have to comprehend and apply in their advertising works. In addition, theories classes are boring too. Lecturers can make their classes more engaging and interesting to students by introducing technology-aiding tools such as lightboard and video technology. The main purpose of the study is to explore the implementation of studio-based teaching and learning using lightboards as a tool for creative advertising classes. Four lessons on advertising theories using lightboard video shared to students via online setting were conducted in a 16-week lessons. This study was conducted with 30 students of their 3rd semester, from two classes at a polytechnic institution. After completing their four lessons, students provided their feedback through a questionnaire. Three students were interviewed individually on their satisfaction level and understanding of the lessons. The findings show that students were more engaged as they became more proactive and able to relate theories and design concepts in their learning. Moreover, lecturers managed to innovate their delivery of lessons using lightboard, which is more explorative, and creative while engaged students in the classes.

Keywords: *Lightboard, Studio-based learning, Lightboard video, Constructivism*

1 Introduction

Studio-based learning is one of the many approaches of teaching and learning typically used in the field of study ranging from architecture to creative and performing arts. Some innovative ideas for studio-based learning have been introduced, one of them being a lightboard. Integrating lightboards as a tool in studio-based teaching and learning of a creative advertising subject may be a challenge for lecturers (Cennamo & Vernon, 2011). Meanwhile, the instructional lightboard offers a completely new range of possibilities for blended and online learning. It allows for more dynamic and integrated presentations than voice-over PowerPoints or Kahn Academy-tablet style of presentations.

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The lightboard, or "learning glass," is known as essentially a piece of glass with lights around the border that point inward, allowing content drawn directly on the glass to be illuminated. Lightboards integrate as instructional technology tool is able to create written or visual demonstrations for instructional video. The uniqueness of lightboard enables lectures to face "toward" students when writing on the board. Writing on a glass that is brightly illuminated is highly visible and it is an advantage for teaching and learning processes (Lubrick, 2019). One of the best features of the lightboard is its simplicity, which give the lectures some freedom to teach their subject in a more approachable way and the learners may have the liberty in visualising the contents of their subject (Skibinski, 2015). Lightboards for lectures, can be developed independently, such as the ones used at Northwestern University and San Diego State University for studio-based classes (Skibinski, 2015).

The purpose of this study is to explore the implementation of studio-based teaching and learning using lightboards as a tool to create innovative instructional teaching materials for creative advertising subjects.

2 Literature Review

Studio-based classes can bring new ways of teaching and learning to students. It is a place that has developed traditions of learning-by-doing within the traditions of project-based and problem-based education (Klassen, 2012). Lecturers rely on traditional ways of teaching in studio-based environment (MOHE case studies by Lenovo, 2022). Studio-based setting should get more technological supportive tools for creating learning engagement environments (Lubrick, 2019).

2.1 Constructivist theory and studio-based learning

The understanding of studio-based teaching and learning is a constructivist educational model usually used in art and architecture courses (Gestwicki & Ahmad, 2011). Social constructivist theory emphasizes communication and collaboration among lectures and students in their groups, especially the exchanges of the capable others with the learners. During a studio-learning session, videos can be recorded to complement the class. Videos can be created fast and easy to share the materials in the learning group (Lubrick, 2019). The video materials can be used for group discussions and playback for revision as well. Instructional video is engaging in studio-based learning as a communication tool for learning key contents. It can create authentic learning opportunities such as facilitating problem-solving. According to (Silva, 2014) that studio-based instructional model emphasizes learning activities in which students were able to construct personalized solutions for assigned computing problems (as an example), and

they were able to present solutions to their lecturers and peers for feedback and discussion within the context of design critiques. Studio-based teaching and learning allows learning to be enriched by collaboration and teamwork.

2.2 Innovative learning using lightboard.

Learning does not only involve students being taught but also how the subject matter (content) is being taught to make sure students understand the subject matter well and at ease. Students are more inclined to learn when their lecturers use creativity in their teaching and learning (Mayer, 2005). Mayer (2011) stated that students' retention of what has been taught comes about how it is taught. Students particularly use their imaginative mind to explore learning as they have already learned more than they ought to learn by exposing themselves to technology and video contents. Bandura (1977) has also written that learning through observation with good teaching methodology helps students to retain information for a long time (Illeris, 2018). Learning and teaching has never been an easy ride for anyone. Many students struggle to learn while lecturers struggle to find innovative pedagogies to deliver the right subject matter to their students (Bandura, 1977). Peshkin (2021) has also stated that he was bored with the old method of chalk and board method and thus started to think of an innovative way to make students learn better and in a colorful way.

The use of lightboards has shed some light to students so that they can understand what is being taught with greater clarity and understanding. The overall tenet is the use of lightboard should be seen only as a tool in teaching and learning but not as a replacement for lecturers. Many researchers did not point out the drawbacks in using this technology as students like the idea of them seeing their lecturers face to face and they are in favour of the idea where they understand the subject matter better in their classroom and they can do more discussions in class (Rogers, 2019).

3. Methodology

The study introduced lightboard studio-based learning for 4 lessons in a 16-week lessons conducted for two classes in creative advertising subject. The topics were mostly theoretical in nature, such as branding and unique selling proposition (U.S.P.), etc. Usually, students face difficulties in understanding the theoretical topics, hence the introduction of lightboard in these topics was a right selection.

Figure 1: The topic highlights on theoretical topics on creative advertising such as U.S.P topic

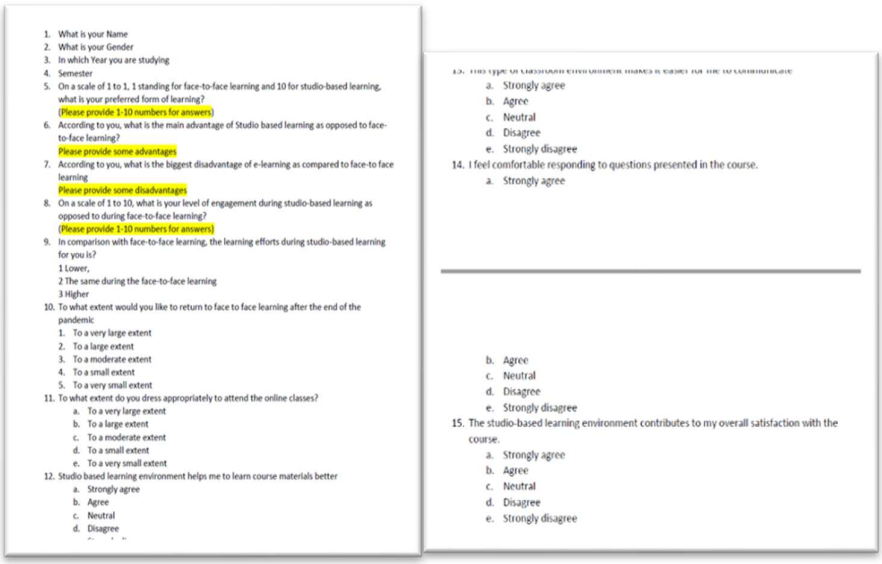
Figure 2: Drawing on the lightboard for producing instructional teaching and learning in studio.

Figure 1 and Figure 2 shows how lightboard were used to explain theoretical topics on creative advertising topic, and other lessons during the 4 lessons period. Lightboard instructional video is approximately 7 minutes, and it is divided into three different ways of delivering. Three (3) delivering elements applied in 4 lessons on the instructional video such as animation, videos, and brainstorming ideation to make the class more engaged with students. The final lightboard teaching material were recorded, where students can review and view for completed lessons.

3.1. Instrument and Procedures

After going through the 4-lesson classes using lightboard instructional videos, a questionnaire was given to students for gathering their perceptions and experiences after their lightboard studio-based classes (i.e. two classes were involved). A questionnaire survey was also administered to 30 students (n = 30). It was administered in May 2022 and took place at a polytechnic studio.

The results of the questionnaire survey on closed-ended questions through the distribution of questionnaires (Refer to Figure 3). The students were required to answer through their first impression of the classes.



1. What is your Name
2. What is your Gender
3. In which Year you are studying
4. Semester
5. On a scale of 1 to 1, 1 standing for face-to-face learning and 10 for studio-based learning, what is your preferred form of learning?
   (Please provide 1-10 numbers for answers)
6. According to you, what is the main advantage of Studio based learning as opposed to face-to-face learning?
   Please provide some advantages
7. According to you, what is the biggest disadvantage of e-learning as compared to face-to face learning
   Please provide some disadvantages
8. On a scale of 1 to 10, what is your level of engagement during studio-based learning as opposed to during face-to-face learning?
   (Please provide 1-10 numbers for answers)
9. In comparison with face-to-face learning, the learning efforts during studio-based learning for you is?
   1 Lower,
   2 The same during the face-to-face learning
   3 Higher
10. To what extent would you like to return to face to face learning after the end of the pandemic
    1. To a very large extent
    2. To a large extent
    3. To a moderate extent
    4. To a small extent
    5. To a very small extent
11. To what extent do you dress appropriately to attend the online classes?
    a. To a very large extent
    b. To a large extent
    c. To a moderate extent
    d. To a small extent
    e. To a very small extent
12. Studio based learning environment helps me to learn course materials better
    a. Strongly agree
    b. Agree
    c. Neutral
    d. Disagree

a. Strongly agree
b. Agree
c. Neutral
d. Disagree
e. Strongly disagree

14. I feel comfortable responding to questions presented in the course.
    a. Strongly agree

b. Agree
c. Neutral
d. Disagree
e. Strongly disagree

15. The studio-based learning environment contributes to my overall satisfaction with the course.
    a. Strongly agree
    b. Agree
    c. Neutral
    d. Disagree
    e. Strongly disagree

Figure 3. Questionnaire items given to students for seeking their feedback

After the lightboard studio-based classes, three students volunteered for an interview, and they attended the lesson using the lightboard. It was an open-ended interview. The focus of the interview was about their perception of using lightboard in studio. The interview was open-ended. According to Creswell (2017), open-ended questions during interviews are only recommended to be used as primary qualitative study.

The three students were asked on these questions:

(i) Whether the subject learned is motivating them?
(ii) The differences between online live studio that used lightboard in learning and studio-based learning that does not use lightboard?
(iii) Is the subject you have learned using lightboard, helping you to comprehend the subject matter?

The interview sessions lasted for 30 minutes, and the questions were aimed at identifying challenges they faced as well as to improve in learning.

4. Results

Figure 4 shows the overview of respondents' feedback after experiencing their 4 lessons of lightboard supported classes:

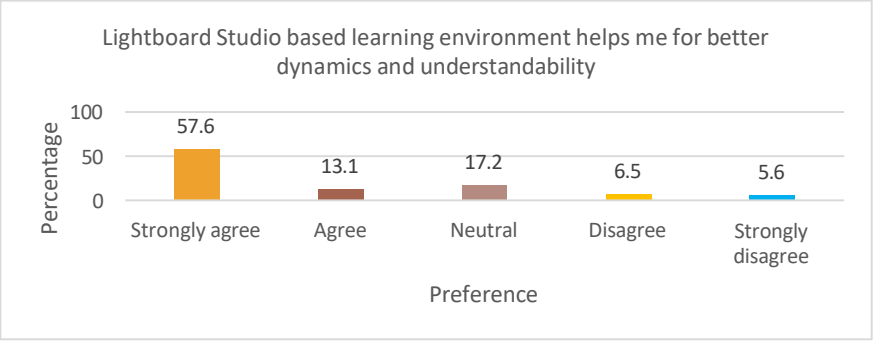


Figure 4: Lightboard studio-based learning environment for better dynamic and understanding

Figure 4 shows the Lightboard studio-based learning helps students to learn subject materials better (for better dynamics and understanding). 57.6% and 13.1% of students is strongly agree and agree that lightboard studio-based learning helps them to subject better (for better dynamics and understanding), 17.2% of students are neutral and, 5.6% and 6.5% of students are strongly disagree and disagree to that lightboard studio-based learning does not helps them to learn the subject.

Figure 5 shows lightboard studio-based learning environment contributes to overall satisfaction with the subject and in comparison, with face-to-face learning.

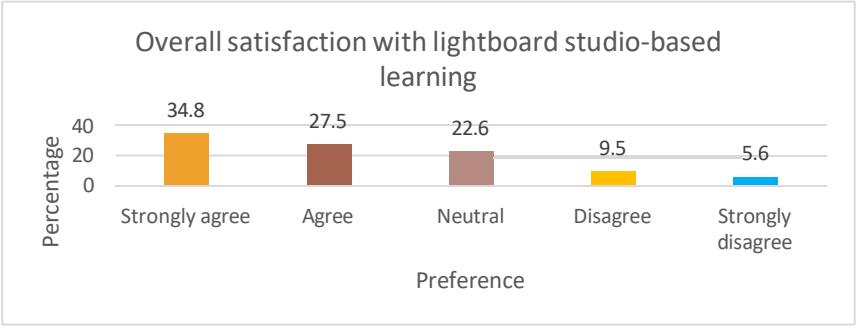


Figure 5: Satisfaction of students with lightboard studio-based learning.

It is observed that the graph shows an increasing order. The lightboard studio-based learning environment gives overall satisfaction with the subject than face to face learning. 34.8% and 27.5% of students is strongly agree and agree that the lightboard studio-

based learning environment gives satisfaction with the subject than face to face learning, 18.5% of students are neutral and, 12.5% and 12.6% of students are strongly disagree and disagree.

Interview (open-ended) data gathered from 3 students. The focus of the interview was about their perception of using lightboard in studio. Interviews were conducted with voice recording for data gathering and analysis.

Respondents commented:

Interviewer 1

"During the teaching and learning in a face-to-face setting in the studio, I felt bored, with repeated sticky notes pasted on walls. However, after I attended the Lightboard class in a studio-based environment, I am able to generate my own ideas with multi interactive examples provided by my lecturer".

Interviewer 2

"The brainstorming part was one of the best sessions, where I can understand in-detail on the critique part explained. I hope this lightboard learning will be used by lectures every or 3 weeks. Further, I had fun, and it was interesting to see the chalk marker glow in dark".

Interviewer 3

"I love the environment setup with glowing lights, totally an interactive world and I able to generate idea among my peers using digital technology provided".

Interviews were designed randomly and they encourage revealing they opinion. They have started to see things in a different way, and they are not bored when the lessons are conducted. In fact, they are amazed at how fast they have managed to make themselves understand everything in a short period. They want more lessons to be conducted using the lightboard as they see it as a different way for them to understand the theories taught.

5. Discussion and Conclusion

Students' interest is aroused when they were taught using lightboard at studio-based learning as they enjoyed the session and they managed to answer many questions asked during that time.

- Students' communication skills are improved as they manage to communicate well with the lecturers and comprehend fully the subject matter taught.

- Students' creativity in brainstorming and designing shows a marked improvement as students show a great change in contribution of ideas to create a good design for industry or companies.
- Students become creative learners as they themselves start to create more designs and they start to have a higher level of confidence in themselves and some of them even train their fellow friends.

The study revealed the satisfaction level of students in learning using lightboard as a tool in studio-based learning environment. As in all studies, this study has limitations that should be considered before extrapolating the finding and some potential areas that can be explored for future research.

Thus, the following recommendations are hereby presented for the ideas of lightboard integration in any studio-based classes:

- Since students' level of satisfaction in learning design using lightboard in a studio-based learning has improved, more lecturers should use this method of delivery to motivate students to learn and engage in their studio albeit if it is online or face-to-face.

- More facilitators from the industry can be invited as guest lecturers to partake in live online sessions using lightboard as they can also contribute more ideas when lessons are conducted.

- Students who have been exposed to this method of teaching and learning, should utilise it and create their own content while they do presentations to industry players to entice interest and make the listeners to be more engaged.

- The Ministry of Education should train more facilitators on how to use lightboard in teaching and learning in an online setting and at the same time use this method in many other courses such as in the dentistry, pharmaceutical, medical imaging and so forth.

- Language lecturers are recommended to change their delivery mode and utilise this technology as they can use animations in their lessons to teach creative writing as students need a higher level of imagination in creative writing.

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