

# Broadcast Study

**Siti Noor Aishah Binti Mohammad, Chen Mei Ching & Mobil Bin Sahran**

JTMK, Politeknik Kuching Sarawak, Km 22 Jalan Matang,  
93050 Kuching Sarawak, Malaysia,

*nooraishah@poliku.edu.my*

## ABSTRACT

Broadcast Study is an innovation designed to help both students and lecturers. The main objective is to provide multi-visualization display to multiple devices at the same time. With this innovation, it can solve two problems. The first problem is where students who have short-sightedness problem and cannot see clearly slide displayed in front of the class or laboratory. The second problem is when the projector in the class or laboratory has some technical problems and cannot display the slides clearly. This can distract the students from giving full attention during the teaching and learning process. By using broadcast study, student also can download the note through the link at the broadcast study platform where student can access the google drive to download the note. Other than that, for those students who feel shy to ask any question, broadcast study has implemented a chat platform where students can use the WhatsApp link and join the group chat. At the end of this research, this new teaching and learning method can help both lecturer and students to achieve the course learning outcome.

**Key Words:** broadcast, multi-visualization, teaching and learning method

## 1. INTRODUCTION

According to Cambridge dictionary, broadcast is defined as to spread information to a lot of people. Meanwhile, according to Edward, Y. (2010), when a personal computer is used to send data that can be received by all other personal computers in the same domain of network, it is called broadcasting. This data will propagate across the network. This is considered like broadcasting message in which the message is forwarded to all other hosts based on switch.

The multi-visualization display configuration can be ranged from a fully integrated set of liquid crystal displays (LCD) to two or more monitors or devices (Bohannon, 2003). Each screen is connected to the same computer. For example, an application will maximize to the boundaries of its home single screen but it can also be windowed across all screens. Through this broadcast and multi-visualization display concept, display devices such as computers or mobiles, will be used as a platform to retrieve that messages.

Visual aids are important in education system. Visual aids are those devices which are used in classrooms to encourage students in the learning process and make it easier and interesting. Visual aids are the best tool for making teaching to be effective and the best dissemination of knowledge. Currently in Polytechnic Kuching Sarawak, the lecture is conducted at lecture hall, lecture room and laboratory room using projector as a main teaching aid to display information from lecturer personal computer on projector screen. However, lecturers and students are feeling distracted because of unwanted visual effects and image distortions on display screen. It can cause students to lost their focus on the screen and sidetrack them to do their own works. So, in this kind of situation, it will be very hard for the students to achieve the course learning outcome.

Based on the problems as mentioned above, broadcast study is invented as a secondary display aid that can be viewed by lecturer and students during teaching and learning process with some additional features for the students such as accessible notes and chat group. Other than that, students who have short-sightedness problem and cannot see clearly slide displayed in front of the class or laboratory will be able to give full attention during the teaching and learning process with this new creation of visual aid. Live view can be implemented with or without internet connection as long as the computer has its own internet protocol (IP) address. However, the features for notes and WhatsApp group chat need internet connection.

The rest of this paper is organised as below: section 2 reviews on researches multi-display screen; section 3 describes the prototype and system walkthrough; section 4 discusses the visual aid and the last section concludes the overall paper.

## 2. LITERATURE REVIEW

One of the first indicators related to multi-display screen was a landmark study by researchers at the University of Utah (Colvin, Tobler & Anderson, 2004). The researchers found that multiple screens were significantly more usable than single screens on measures of effectiveness, comfort, learning ease, time to productivity, mistake recovery and other factors. According to this research, multiple screens can dramatically boost productivity. Making use of multiple distributed monitors, this environment introduces diversity into the classroom workflow through the facilitation of transitions between different workstations and sitting angle postures.

The Nielsen Company survey of connected device owners, states that about a quarter of the smartphone and tablet owners use their device daily while watching television (Nielsen, 2013). All multi-screening studies rely on this survey to indicate the prevalence of this phenomenon. The situation also can be seen with the students who are in classroom while teaching and learning started. They seem more attracted to the electronic devices near them than the projector screen in front of the classroom.

An explanation for the previous finding could be that adoption rates of media vary among generations (Brasel & Gips, 2011; Van Der Goot et al., 2016). Results showed that it is more likely that medium used in each generation is related to age group. For example, people between 54 and 81 years old are more likely to use a newspaper, whereas younger people between 17 and 34 are more likely to use new media (Van Der Goot et al., 2016). New media have characteristics that stimulate media multitasking such as multiple screens or application on one device.

## 3. PROTOTYPE AND SYSTEM WALKTHROUGH

This Broadcast Study is developed by using Visual Studio 2019. Visual Studio 2019 is the latest release of Microsoft's flagship Integrated Development Environment (IDE) for building solutions in a wide range of languages across multiple platforms. The programming languages used are C#, CSS, Java Script and HTML. Other than that, database feature is used in this creation to store the link for lecture notes and WhatsApp chat group. The interfaces for Broadcast Study application are shown below.



Figure 1: Command prompt application interface



Figure 2: Broadcast Study application interface



Figure 3: Broadcast Study application interface (After IP Address entered inside Text Box component)

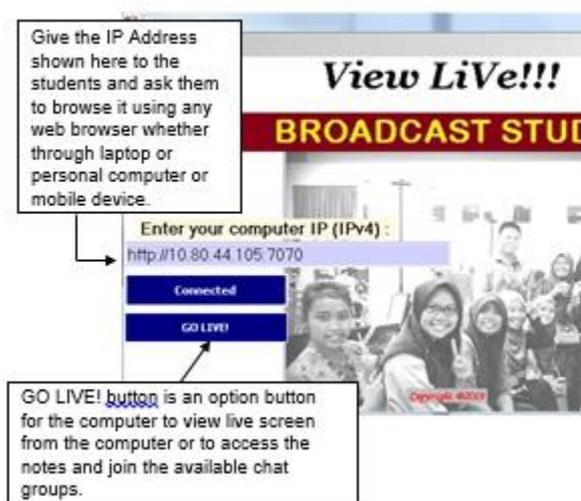
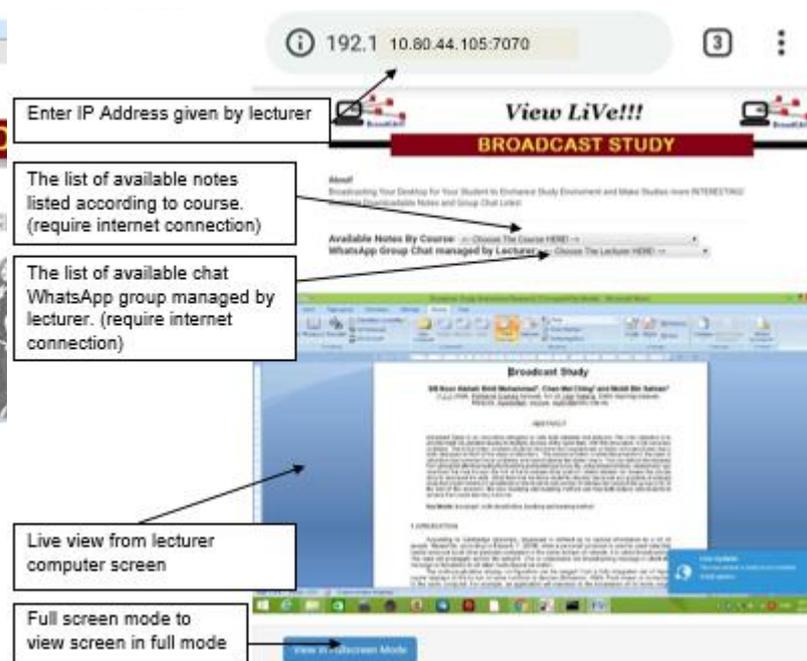
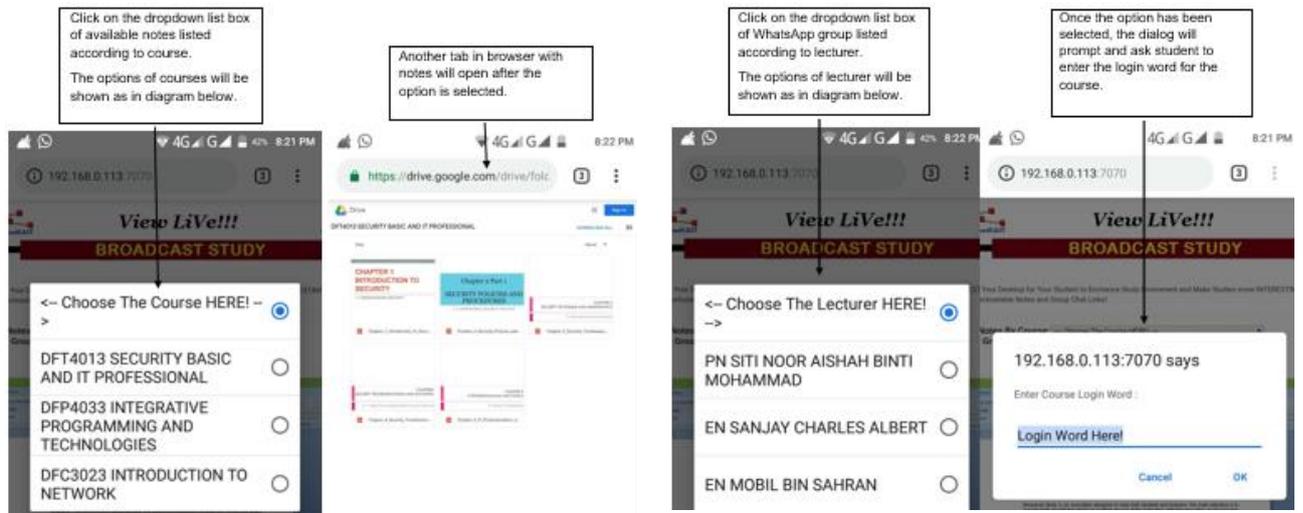


Figure 4: Broadcast Study application interface (After Connect Server button change to Connected)





**Figure 6:** Page displays the option of available notes listed according to course and another tab in browser will open after the selection has been made.

**Figure 7:** Page displays the option of available chat group listed according to lecturer and prompt dialog for student to enter the login word.



**FIGURE 8:** Page displayed the chat group where the student can join the chat.

#### 4. DISCUSSION

This application is designed in order to make sure the students can receive an efficient learning environment for lectures conducted in the lecture hall, lecture room and laboratory. The students may view the teaching material same like what their lecturer has shown through projector screen by using personal computer provided in the classroom or their own devices such as laptop or mobile in real time. Web browser is used as a platform for the implementation of broadcast study. Any web browser can be used such as Google Chrome, Internet Explorer, Mozilla Firefox and other available web browser. This can help the students in giving full attention during the teaching and learning process.

By using broadcast study, student also can download the note through the link at the broadcast study platform where student can access the google drive to download the note. Other than that, for those students who feel shy to ask any question, broadcast study has implemented a chat platform where students can use the WhatsApp link and join the group chat. This enables the students to ask any related topics that they do not understand in detail from their lecturer without face to face communication.

## 5. CONCLUSION

By creating this broadcast study application, authors hope to help the lecturers and students to achieve the course learning outcome specified in the curriculum. This new innovation will help to motivate students in their learning to have great improvement in their academic achievement. Lecturer will be able to conduct their lecture in a more controllable environment and will help to improve the teaching and learning process. In the future, this broadcast study can be enhanced by using android and IOS which is not limited to only desktop computer or laptop.

## REFERENCES

- Bohannon, W.K. (2003). Double vision. *Emedia Magazine*, Volume 16(5), pages 22-28.
- Colvin, J., Tobler, N. & Anderson, J.A. (2004). Productivity and Multi-Screen Computer Displays. *Rocky Mountain Communication Review*, Volume 2:1, Summer 2004, pages 31-53.
- Edward, Y. (2010). Network Broadcast Domain Understanding. *Ezine Articles*.  
[https://ezinearticles.com/expert/Youssef\\_Edward/284358](https://ezinearticles.com/expert/Youssef_Edward/284358)
- Nielsen. 2013. Action figures: How second screens are transforming TV viewing.  
<http://www.nielsen.com/us/en/insights/news/2013/action-figures-how-second-screens-are-transforming-tv-viewing.html>
- Brasel, S.A., & Gips, J. (2011). Media multitasking behavior: Concurrent television and computer usage. *CyberPsychology, Behavior & Social Networking* 14, no. 9: 527-34.
- Margot, J.V.D.G., Esther, R., Suzanna, J.O., Paul, E.K. & Edith, G.S. (2018). Media generations and their advertising attitudes and avoidance: a six-country comparison. *International Journal of Advertising*, Volume 37:2, pages 289-308. <https://doi.org/10.1080/02650487.2016.1240469>