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ICT IN UNIVERSITY: HOW LECTURERS EMBRACE TECHNOLOGY FOR TEACHING

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Abstract

Current era demands educators to deal with technology. Seeing that most students of university are supported with abundant facilities in learning nowadays, lecturers need to get familiar with current issues and technologies to encounter it. Role of Information and Communication Technology (ICT) in pedagogy will facilitate lecturers in teaching and learning process as well as improving their professionalism. It is a qualitative research with fifteen lecturers as the sample of research. The result shows that although all lecturers have used ICT for teaching, they apparently still need traditional medium such as whiteboard since ICT is also lack in some parts.

Keywords: *ICT, teaching technology, teaching media*

1. INTRODUCTION

The role of technology in education system has influenced the way of teaching from conventional to modern way. It supports educators especially in conveying what they are going to show to the students. Almost every level of education is supported by the role of technology in the process of learning in the classroom. Higher education like university is one of education levels using technology to support learning process. Ministry of Higher Education in Indonesia recently socialized its program called *Spada (Sistem Pembelajaran Daring*) or Online Learning System. This program aims higher education institutions to be able to apply online learning to develop and improve knowledge. As stated by U.A Chaeruman et al. (2018), SPADA is one of educational applications technology which promotes blended learning as a tool to solve one of the challenges of higher education in Indonesia, ,that is to improve access to higher quality education.

Lecturers of university are demanded to be open welcoming the advent of technologies in the field. The term ICT in education has been decades applied and known in various fields in our life including education. ICT stands for Information and Communication

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Technologies. Integration of ICT in education refers to the use of computer based communication that incorporates into daily classroom instructional process (Ghavifekr & Rosdy, 2015). There are many ICT tools that can be used by to support people's work. Lecturers need to know at least some of them in order to be able to mingle with current period. Not only will it help lecturers to unite with new technology, it also will help them to raise educational quality and connect learning to real-life situation (Lowther, et al., 2008; Weert and Tatnall, 2005).

Information and Communication Technology is broader than the term of IT (Information Technology). As stated beforehand, although both are using the advance of ICT in its application, ICT tends to focus on communication technology. According to UNESCO (2002), ICT may be regarded as the combination of *informatics technology* with other related technology, specifically communication technology. This factor will enable real-time learning and communication across the boundaries, and education is one of the fields which utilizes this advantage.

The expansion of technology brings benefits to the improvement of many aspects in education, such as teaching, learning, and research. Technology provides a lot of resources which help teachers and students learn independently. ICT has the potential to innovate, accelerate, enrich, and deepen skills, to motivate and engage students, to help relate school experience to work practices, create economic viability for tomorrow's workers, as well as strengthening teaching and helping schools change (Davis and Tearle, 1999; Lemke and Coughlin, 1998; cited by Yusuf, 2005). As summarized by Fu (2013), using ICT brings lots of merits in education; those are to assist students in accessing digital information efficiently, to support student-centered and self-directed learning, to produce a creative learning environment, to promote collaborative learning environment, to offer more opportunities to develop critical (higher-order) thinking skills, to improve teaching and learning quality, and to support teaching by facilitating access to course content.

To achieve the merits mentioned earlier, it is needed for students and teacher to have sufficient knowledge about the use of ICT in the process of teaching and learning. According to Riley (2017), ICT is often categorized into two broad types of product: (1) Traditional computer-based technologies (things done on a personal computer or using computers at home or at work), and (2) Digital communication technologies (which allow people and organizations to communicate and share information digitally). The second type of ICT product tends to be suitable with current era of technology. Instead of only using technology

to work something and keep it or share in traditional way, the second type utilizes the role of technology to communicate and share our work digitally in more efficient and modern way.

Digital communication technologies can be found in various ICT tools. In education field especially, there are many tools which can be picked by the teachers and lecturers to promote the process of teaching and learning. Those can be in a form of technology equipment, software, and/or digital educational content. Computer, cell phone, television are equipments which can support the use of ICT. These equipments will be the place to save and run software to provide digital educational content. Thus, integrating ICT tools will elevate the use of ICT in teaching process.

More specifically, Erben et al. (2009) classifies ICT tools into five categories:

1. *E-creation tools.* These involve playing and using technologies to create, explore, and discover learning content, e.g.: web publishing, presentations software, camera, moviemakers, etc.
2. *E-communication tools.* These tools promote communication among students and teacher in real time interaction, such as telephone conversation, voice conferencing, and instant messaging, or with time delay, such as email, text messages transmitted over cell phones, and discussion boards.
3. *Reading/writing-facilitative e-tools.* These provide teaching and learning of writing and reading skills, such as online boards, blogs, wikis, and e-books.
4. *Listening/speaking-facilitative e-tools*. These include video and audio files, podcast and vodcast, audio video sharing libraries like Youtube.
5. *E-assessment tools*. These contain archiving students' portfolios, performance, and projects as learning evidence in storage media.

University is a place where higher education takes place. Lecturers of universities in these recent years are demanded to at least know how to use digital communication technologies in terms of teaching. It is also because their university students are people who are born as a digital native who mostly know about current technologies in their daily life (Harisusilo, 2018). Moreover, universities prepare next generation for future lives and careers. Lecturers need to be able to balance their knowledge of using technologies in teaching. Not only does it develop teaching and learning quality, it will also attract students' attention during the class. It is supported by previous study which shows that the use of ICT make the students more frequently engaged in the meaningful use of computers (Castro Sanchez and Aleman, 2011). Besides that, Koc (2005) also mentions that using ICT enables students to communicate, share, and work collaboratively anywhere and anytime. For the

educators, Watts-Taffe et al. (2003) found that teachers can act as catalysts for the integration of technology through ICT.

However, not every lecturers and institution are equipped by technological devices. This can also becomes the lecturers' challenges in dealing with ICT implementation. Seeing this fact, lecturers need to be proactive and put more effort to be able to implement ICT in teaching process. On the contrary, if the encouragement, equipment, and necessary technological support are available for the lecturers, developing an ICT class will be easier for them (Fu, 2013). It can be such a new experience of teaching and learning process for both students and lecturers. Therefore, it is needed to discover appropriate ICT tools used by lecturers. This will give more insight and stimulation for other educators who have not fully applied ICT in their classroom, to also promote and start to create their ICT class. In short, this study will find out the ICT tools utilized by lecturers to support ICT class, and also to discuss about how lecturers in university deal with current technologies to help them teach in the classroom.

2. RESEARCH METHODS

It is a descriptive qualitative study which talks about ICT tools used by lecturers in university. More complex, this study also discuss about how lecturers incorporate ICT tools in their teaching process. According to Cresswell (2008), descriptive qualitative study aims at investigating detail rendering of people, places, or event in a setting qualitative approach. The object of this study was ICT tools used by English lecturer to support teaching and how they use them in the process of teaching and learning. The subject of this study was chosen by using purposive sampling. According to Sugiyono (2010), purposive sampling is a sampling used by considering several factors. It is also stated by Dornyei (2007), purposive sampling procedure chooses participants who meet some specific predetermined criteria. The samples of this study were fifteen English lecturers from different higher education institution and/or universities in various regions in Indonesia including Lampung, Banten, Jakarta, Central Java, East Java, and Yogyakarta. Those lecturers are around 20 to 40 years old who are responsible for different subjects in universities and implement the use of ICT in the classroom teaching and learning.

Data collection of this study was gained by using questionnaire as the main instrument. Besides that, interview was also employed to support the validation of the data. There were twenty two in total of questions and statements related to the implementation of ICT in teaching and learning process. The questions varied from close to open-ended

questions. Descriptive analysis was used as a technique in analyzing the data. The data obtained from the result of questionnaire and interview was then explained in a form of data description.

3. FINDINGS AND DISCUSSION

Findings in this study show that all lecturers have implemented ICT in the process of teaching in the classroom. Kinds of ICT tools used by the lecturers are varied from the simple to complex one. Some lecturers are supported by the facilities provided by their campus, and some are bringing their own stuff to maximize their teaching. The table below shows the percentage of ICT implementation in university by lecturers and their attitude towards it.

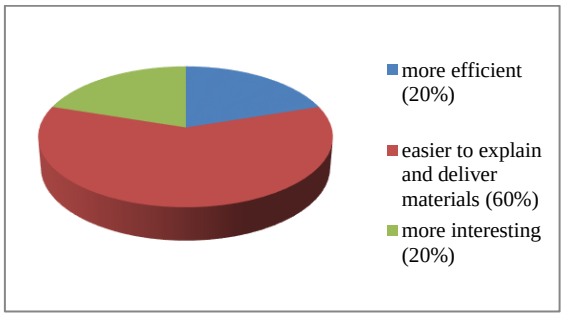
Table 1 Implementation of ICT according to lecturers' perspective

No.	Statements	Yes	No
1.	Lecturers use technology for teaching in the classroom	100%	-
2.	Lecturers use same ICT tools for every material which are going to teach	33.3%	66.7%
3.	Technologies really helps teaching process	100%	-
4.	Technologies are burdensome	-	100%
5.	Lecturers do not need to use a whiteboard anymore	-	100%
6.	Lecturers implement blended learning	93.3%	6.7%
7.	Lecturers suggest students to use or open certain website or application to support their learning	86.7%	13.3%
8.	It is easy for lecturers to understand and get adapted with new ICT tools, especially those which support teaching and learning process	80%	20%
9.	Lecturers are not interested in new technologies and tend to use the old technologies they usually use.	-	100%
10.	Lecturers have a plan to implement new ICT based learning in the future	86.7%	13.3%

The table above shows the summary of implementation of ICT by lecturers. According to the data, lecturers have been supported by technologies for teaching. Mostly, they are assisted by the functions of laptop, LCD and projector, video or music player, internet connection, smart phone, etc. In some cases, there are 33.3% of lecturers who always use the same ICT tools for every material. It is because they think that it is already enough for them to use the same ICT tools because these tools have covered lecturers' need in teaching. For example, it happens to the lecturers whose materials can always be explained by using presentation slide. However, 66.7% of lecturers are in contrast. They always adjust the use

ICT tools for their teaching. For example, some lecturers will provide video aside of slide presentation to support explaining types of text, or they will also use online dictionary and music player to practice students' pronunciation. So, it depends on the materials going to be given.

It is also concluded from the data that all lecturer agree that technologies really helps teaching process. By using technologies, not only lecturers who can involve in promoting learning process, but also students can engage to build their own understanding according to the context by utilize the role of technology exist. As Brush, Glazewski and Hew (2008) have stated, ICT is used as a tool for students to discover learning topics, solve problems, and provide solutions to the problems in the learning process. It is counted that there are 86.7% of lecturers ask their students to also actively participate in learning by asking them to access certain websites or applications that are related to the materials. As stated by Fu (2013), based on learning through ICT, students are more capable of using information and data from various sources, and critically assessing the quality of the learning materials. This also classify three most benefits found by lecturers using ICT. They think that using ICT in the classroom is more efficient, more interesting, and easier to explain materials. The percentage is shown by the chart below.

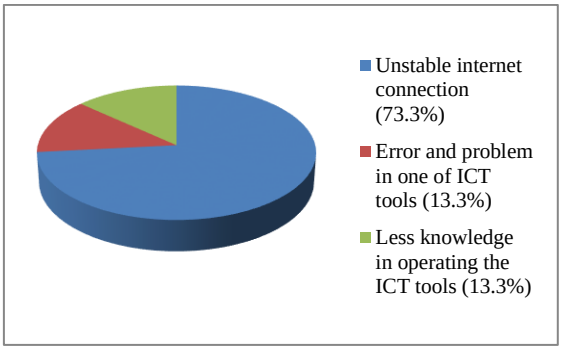


Picture 1.Benefits of using ICT tools

It is also revealed that most lecturers have promoted blended learning in their teaching process, which is learning does not always happen in the classroom. Blended learning enables students to learn anytime and anywhere independently or collaboratively by using supporting available technologies. Koc (2005) also mentioned that using ICT enables students to communicate, share, and work collaboratively anywhere, any time. Moreover, 86.7% of the samples also have a plan to implement new ICT tools to support their teaching in the future. It shows that most lecturers are actively digging up new information and knowledge about current technology to support teaching.

From the table, it can also be seen that lecturer always have interest with new kinds of ICT. Although there are 20% of them who cannot easily understand how to use and operate

with new ICT tools, it doesn't mean that they will only stick with their old ICT tools. Previous study by Almekhlafi and Almeqdadi (2010) also revealed that the obstacle had by the lecturers is insufficient time to master new software and in integrate ICT during a class period. Further, this study also asked lecturers about the barriers they face when using ICT tools and it is shown that there are 13.3% of lecturers face this kind of problem. This number is also the same for lecturers who find errors and problems in one of ICT tools they are using. It is in line with the previous study conducted by Yildirim (2007) that technical problem in the classroom is one of the barriers faced during teaching process in the classroom. However, based on the questionnaire and interview conducted earlier by researcher, it shows that unstable internet connection is the most common barrier met by the lecturer when using ICT tools. It mostly happens in universities which do not provide such an excellent internet connection. In this case, lecturers need to be initiative by using their own internet connection to keep ICT class going. The summary can be seen in the chart below.



Picture 2. Barriers when using ICT tools

Technology should be used for more than just support of traditional teaching methods (Tezci, 2011). However, according to this study, all lecturers have been agreed that the use of traditional tools as board and marker are still important to help them insert and combine more explanations or examples of the materials being taught.

Specifically, this study also finds some ICT tools used by lecturers and how lecturers utilize them. The descriptions are summarized in the table below.

Table 2 ICT tools used by lecturers

No.	Kinds of ICT tools		Functions
1.	Laptop/computer	ICT equipment – E-creation tool	As an equipment to operate teaching software and applications
2.	LCD and projector	ICT equipment – E-creation tool	To show the materials to the students in a big scale
3.	Speaker	ICT equipment – Listening-facilitative e-tool	To sound off the voice of dialogue, story, or explanation

4.	Internet connection	ICT equipment – E-communication tool	To connect learning with virtual life and source
5.	Ms. Word	ICT software/application – e creation tool	As a media to produce text, writing, data
6.	Ms. Power point	ICT software/application – e creation tool	As a media to make slide presentation
7.	Video/music player	ICT software/application-Listening-facilitative e-tool	To play video or music
8.	Online dictionary	ICT software/application – Reading/writing-facilitative e-tool	To find out precise and accurate meaning of some words
9.	Kahoot	ICT software/application – E-assessment	To assess students' understanding in an interesting way
10.	Turnitin	ICT software/application – Reading/writing-facilitative e-tools, e-assessment tool	A writing platform for students which can prevent plagiarism and provide personalized feedback
11.	Prezi	ICT software/application – e creation tool	A software to make zooming presentation slide
12	Videoscribe	ICT software/application – e-creation tool	A software to make interactive and interesting presentation slide
13.	Powtoon	ICT software/application – e-creation tool	A software to make interactive and interesting presentation slide
14.	Khan Academy	ICT software/application – Reading-facilitative e-tool	English learning website
15.	British Council	ICT software/application – Reading-facilitative e-tool	English learning website
16.	YouTube	ICT software/application-Listening/speaking-facilitative e-tool	Video sharing platform which consists of abundant learning sources of any kinds of materials
17.	The Virtual Linguistics Campus	ICT software/application – Reading-facilitative e-tool	Linguistics learning website
18.	Google scholar	ICT software/application – Reading-facilitative e-tool	A website providing academic literature

4. CONCLUSION

To sum up, the use of ICT in teaching and learning process in university is a common thing. It is shown that all lecturers have been using ICT tools to support their teaching. There are many kinds of ICT tools used by lecturers in teaching. Those include ICT equipments, software and application, and digital educational content. Most lecturers used certain ICT tools to support certain materials they are going to teach, starting from the very simple one

such as Ms. Office programs to present their materials until online application like Kahoot and Turnitin which need internet connection. Although lecturers are also still using traditional media, such as whiteboard, marker, and paper to help them explain, all lecturers believe that ICT indeed improves teaching and learning quality. One of limitations of this study that needs some future improvements is only few lecturers participated in this research. Therefore, a larger number of samples in the future research is hoped to give better findings in a similar topic. It is also suggested to broaden the topic of discussion of this research which more focuses on the use of a certain ICT tool.

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