ANALYSIS OF LECTURERS' EXPERIENCE IN THE IMPLEMENTATIONOF ICT IN TEACHING ECONOMICS TO UNDERGRADUATES

Kabora Floria[2]

Abstract

This research aims to reveal: (1) the use of ICT by the economics lecturers in the Faculty of Economics, Yogyakarta State University; (2) the reality of their skill in using ICT in teaching; and (3) the impact of ICT use on teaching. This research used the qualitative phenomenology approach. The goal is to describe a "lived experience" of lecturers in the implementation of ICT in teaching Economics to undergraduate students than to explain their experiences. The result reveals three findings. First, the use of ICT in the Faculty of Economics, Yogyakarta State University is that the Internet is used for browsing, LCD projectors for visualizing materials, and Be-Smart (e-learning) for learning support. Second, the lecturers' skill in using ICT in teaching is in the average level. It is also noticed that the male lecturers are more competent in ICT than female lecturers. Third, the impacts of ICT use on teaching are the increase of the competence and the confidence of the lecturers to transfer knowledge.

Keywords: economics lecturers, ICT, experience

[2]The Ministry of Education, Madagaskar. Email: loyahkabora@yahoo.fr

Introduction

Education is the most powerful weapon to change the world- Nelson Mandela. Through Education, human knowledge advances rapidly and brings an enormous implication in education itself. Innovating is one of humans' faculties. It involves learning to make something in different way than usual. That innovation is often associated with the new technologies such as ICT. ICT has been introduced in education over the last 28 years and it is often used in higher education. However the existence of ICT in education presents a big challenge for the educators in their ways of teaching. It requires a shift from the traditional method to the modern one. ICT provides a revolutionary tool in education. But as we know that lecturers are the main driver of the studies in class and have a role to lecture, to prepare teaching materials and handouts for students, to set and mark assignments and examination papers, so, ICT is the main tool to fulfill their work. Thus, it can be said that lecturers are very experienced in the implementation of ICT in the pedagogical process including its advantages and its inconveniences.

The use of ICT is supposed to enhance or support learning and teaching in education, has become increasingly important in tertiary education (Fabunmi & Adesoji F., 2012, p.121) but ICT does not guarantee that a student will learn. A good quality of pen cannot improve a student's learning, but it can help that student write easily and comfortably. It is the same with ICT, it can help a student to find information rapidly and easily. Simply using ICT in teaching and learning process does not improve the thinking of students. Students learn from thinking and thinking needs exercises. So, teaching and learning in the new environment require complex adjustments and substantial rethinking.

Indonesia is one of the countries which already implemented ICT in all universities. One of the cities of Indonesia is Yogyakarta. This city is known as a city of students. Referring to the thoughtfulness of public, YSU or Yogyakarta State University is one of the favorite universities in the Yogyakarta area. The vision of the university is to become a World-Class University in 2025 which is based on faith, independence and intelligence. Although the one of the important roles of education is the economic role that makes human work according to their needs, YSU provides Economics as one of the fields of study existed in the university. It is held by the Faculty of Economics.

The initial survey conducted by the researcher at the Faculty of Economics at Yogyakarta State University mentioned that the University has just got a new building that was established on June 22nd, 2011. Previously the faculty was blended with the Faculty of Social Science. The reasons of their separation are first, the philosophy of science; the graduates of Economics themselves will be more meaningful if they come from the pure field of Economics. Second, the public confidence or the stakeholders, some of public or stakeholders do not trust in the competence of the graduates if they come from the field of Social Science even though their field of study is Economics. Finally, the request of Economics' students with respect to the pride; they feel more confident and proud of when it mentions economics' graduates rather than social science graduates in their diploma (Interview on July 24th, 2014). Thus, the Faculty is the youngest

faculty of the university and uses ICT since its creation for implementing its programs with an adequate enough of infrastructure and facilities. Yet, in terms of teaching methods, Economics is the lower-rated disciplines by students. This picture is similar in other countries (Fry, 2009, p.407). While the objective to teach Economics in class is to help the students on how to think but not on what to think (Boyes & Melvin, 2004, p.5). Economics makes human reasonable and has an analytical mind.

On the other side, technology evolves fast and it always affects the people's way of life in all over the world. How does then our fast changing world effect education? How does technology effect education, in its delivery and in its depth? What issues and questions do we now face with new education? Thus, how is the experience of the lecturers of Faculty of Economics, YSU in the implementation of ICT in teaching Economics? Therefore, this paper is more interested in the ways of using ICT by the economics lecturers in the Faculty of Economics, Yogyakarta State University; the reality of their skill in using ICT in teaching; and the impact of ICT use on teaching.

ICT stands for information and communication technologies and are defined, for the purposes of this primer, as a diverse set of technological tools and resources used to communicate, and to create, disseminate, store, and manage information (Victoria, 2002, p.4). These technologies include computers, the Internet, broadcasting. Information technology (IT) is a technology which uses computers to gather, process, store, protect, and transfer information but today, it is already accustomed to use the term Information and communication technology (ICT) because it is unimaginable to work on a computer which is not connected to the network. Thus, Information and Communication Technology is as an aid to store, to process and to distribute information.

The difference between IT and CT is that Information Technology (IT) covers all matters relating to the process, manipulation and management of information. While Communication Technology is everything associated with the use of tools to process and to transfer data from one device to another. (Prasetyowati, 2013, pp.40-41). Therefore, Information Technology emphasizes on the results of data obtained, while Communication Technology is on how the results of data can be distributed, disseminated and delivered to a destination.

About the Criteria of Lecturers Competency in ICT, in the Indonesia laws Number 14 of 2005 about Teachers and Lecturers (UUGD) states that *"Kompetensi adalah seperangkat pengetahuan, keterampilan, dan perilaku yang harus miliki, dihayati, dan kuasai oleh guru atau dosen dalam melaksanakan tugas keprofesionalan."* That means competence is a set of knowledge, skills and behaviors that should have, internalized and mastered by teachers or lecturers in carrying out the duties of professionalism. Competence is a change in attitudes, skills and interests towards progress and goodness. Thus, the competency level of lecturers can be classified following the notes of Fusaro, M. & Couture, A. (2012, p.83): the lecturer can be said Novice if he/she has no experience on ICT. Beginner if he/she is able to perform the basic operations on a small number of ICT. For instance the use of document creation softwares such as word

processing softwares (like Microsoft Word) and can serve the spreadsheet to process student scores (Microsoft Excel). Average if he/she has a general competence for a certain number of ICT. For example communicate remotely by the networks and use the services offered by the internet as using email, browser (such as Explorer) and search engine (like Google); using multimedia in teaching and be able to use presentation softwares (such as PowerPoint). Advanced if he/she is able to use competently several ICT. For instance being able to exploit the potential of educational softwares in connection with the teaching objectives. Expert if he/she is very clever and can competently use most of ICT. For example rationally consult the Internet by using search engines and Boolean operators and make a reasonable use of it (ethical, legal, critics ...)

Teaching Economics in Higher Education

Economics is the social science that studies the choices that individuals, businesses, governments, and entire societies make as they cope with scarcity and the incentives that influence and reconcile those choices (Parkin, 2005, p.2). Economics is the science of choice, the science that explains the choices that we make and how those choices change facing the scarcity.

The course of Economics is the study of Macroeconomics and Microeconomics. It includes economic theories as the important element of the course, but students will also learn more about the impact of the difference of policies towards the various aspects of economics. Moreover, as a social science, economics is likewise studied in other subjects such as sociology, anthropology, politics and psychology, as well as the business, accounting and finance. Besides, the teaching of economics is based on the use of analytical models that require a high level of comprehension of mathematics. Among the teaching methods of Economics are:

Teaching with Large Groups

Lecturing is the common method used. The Economics Network (2005) survey showed three main areas where lecturers should improve for the lectures: structuring, reducing the complexity of visual materials, and making lectures more interesting.

Structuring

It is often based on a "building block" approach, taking students through a logical sequence of steps, building up their theoretical understanding.

Reducing the Complexity of Visuals

PowerPoint or similar presentation software is in frequent use by economics lecturers. An article by Turner (2006) summarizes the key features of effective visuals in economics as simplicity, accuracy, and flexibility.

On simplicity, lecturers should pay attention particularly to graphical presentations. There may be temptation in taking a ready-made, completed graph and then trying to explain how it has been derived. A much more helpful approach is to take a complex graph and take it back to basics, starting, for example, with (labeled) axes and curve, and then building this up gradually.

Once having a store of basic graphical presentations, it is possible to demonstrate their flexibility to students. In practical terms, there are different ways in which this flexibility can be achieved. Lecture theatres may now be equipped with double projection facilities, which allow the lecturer to simultaneously use PowerPoint and a

visualizer (or chalk/white board). This enables the lecturer to combine prepared outlines/notes with the practice of working through examples and ideas with students at writing speed.

On accuracy, with graphical presentations and mathematics, remembering to label axes and notation are important. The way to set them in visual materials should be consistent notation ideally matched to the core textbook, if one is used.

Increasing Interest

Clarity of structure and simplicity can improve interest by the students. In economics, as in other disciplines, a vital way of maintaining student interest is to illustrate lecture content with examples relevant to the day-to-day lives of students or to current affairs and issues of national and international interest.Technological solutions are becoming more common. A growing phenomenon in lectures is that students use laptops, enabling them to annotate lecture materials electronically.

For example, a more recent addition to economics lectures has been the introduction in some institutions of Personal Response Systems (PRS) to lecture theatres. These may be used to check student understanding and views (e.g. using MCQs), to encourage active participation and response to the lecture material, and to introduce alternative stimuli to keep student attention.

Related to the technology, the students' responses can be picked up by a receiver connected to a computer, with software collating the responses, and a summary of the responses given being presented as a bar chart on the computer screen (which of course can be projected on to a larger screen for the students to see).

The technology gives the lecturer an immediate indication of the level of understanding of students, but can also ensure that students remain focused as they receive a variety of stimuli during a class.

Small Group Teaching

The most commonly used forms are: a) classes to review pre-set problems; b) classes during which students work on problems, often in subgroups, with plenary presentation of their collective work; c) student presentations (group and individual) on both theoretical issues and their applications. Some lecturers have started to experiment with a wider array of approaches, including the use of problem and case-based teaching, games and simulations. The main purpose behind employing these different strategies is to increase active student involvement in the learning process.

Problem-Based Learning in Economics

Problem-based learning (PBL) is a teaching approach that puts students at the center of the learning process. PBL retains the knowledge of students over a longer period of time, learn at a deeper level and develop a range of transferable skills such as presentation, communication and teamwork skills.

Educational Games and Simulations

The use of games and simulations can be highly effective in teaching complex ideas. Yet, it needs the competency and the creativity of lecturers to apply these methods in the learning process. Furthermore, time can be a challenge to their application.

Using IT in Economics Teaching

Virtual Learning Environments (VLEs) and websites are used to support lectures, classes and independent study. The 2005 Survey found that 90 percent of economics lecturers

already posted lecture materials online. Online resources will often include a range of different types of course materials (e.g. course books, slides, handouts, problem sets, solutions to problems, simulations, worked examples, videos and podcasts of lectures).

Assessment

Economics departments use a variety of assessment approaches, including examinations (which may incorporate essays, short-answer questions, case and problem-based questions, multiple choice questions), group and individual projects and online testing. The 2007 Economics Subject Benchmark Statements, (QAA, 2007, p.7) puts clear emphasis on the importance of skills development, noting that this should include both the broad skills such as literacy, communication and IT skills and a range of more specific transferable skills which directly build on economics, such as the ability to take account of opportunity costs, understand how incentives operate, and take strategic decisions.

The faculty of Economics, Yogyakarta State University (FE-YSU) is based on the people's economy and entrepreneurship. The existence of the faculty of Economics supports YSU to achieve the vision towards the Word Class University or WCU (Sugiharsono, 2014, pp.3-4).

WCU is a university that develops Tri Darma Higher Education (Education, Research, and Community Service) including the identity of Indonesia, local advantages, and the regional and international competitiveness (enriched with the quality advantages excavated from the colleges of the developed countries) (Sugiharsono, 2014, pp.14-15). The vision of the faculty is to be a faculty which is superior in the field of Education and Economics. It is based on faith, independance and intelligence, and has a conception of people's economy, entrepreneurship and noble cultural value. While the missions are to work on: a) the implementation of learning in a conductive environment in order to form human resources who are committed in developing and applying Economics and Economics Education for the improvement of people's welfare; b) the assessment, development, and application of Economics and Economics Education in order to contribute to the community development; c) the implementation of a quality of society service in the field of Economics and Economics Education, as well as developing the network of industry, government and society; d) the organization of a good governance which is clean, transparent, and accountable. The Motto of the faculty is "BRIGHT": Bermoral (Moral), Rasional (Rational), Integritas (Integrity), Gigih (Persistence), Humanis (Humanist) and Taqwa (Pious) and its official website is http://fe.uny.ac.id/ (Sugiharsono& al., 2012, pp.13-14). The faculty is led by Dr. Sugiharsono, MSc., accompanied by three (3) vice deans: Dr. Moerdiyanto, M.Ed., Moh. Djazari, M. Ed., and Siswanto, M.Ed. FE-YSU have four (4) departments: Education of Administration Office, Education of Accounting, Education of Economics, and Management with eight (8) study programs which are Education of administration office, Education of Accounting, Accounting, Education of Economics, Management, D3 in Accounting, D3 in Marketing, and D3 in Secretary. The facilities and the infrastructure of the faculty can be seen in the following table.

Table 1. List of the Facilities and the Infrastructure of FE-YSU
Source: Sugiharsono & al. (2012, pp.34-35).

No.	Room Name	Number	Broadness (m^2)
1	Classroom	24	993
2	Laboratory	8	361
3	Meeting Room / Session	4	737
4	Administration Room	17	758
5	Worship Room / Mosque	3	91
6	Students Activities Room BE2	2	48
	Red Building Room	6	90
7	Library	1	69
8	Infirmary	1	20
9	Guard Room / Cleaning Room	2	14
10	Microteaching Room / Studio	2	48
11	Public Room	1	32
12	Seminar proposal Room	2	52
13	*Skripsi* Room	2	48
14	Toilet/WC	8	166
15	Warehouse	4	78
16	Seminar Room	1	30
17	Security Room	1	13
18	Red Building Cafeteria Room	1	50
	Total	92	3.698
	BUILDINGS AND LAND		
1	Building Dean (BE1)		3.232
2	Middle Building (BE2)		2.910
3	West Building (BE3)		660
	Total Building area of FE		6.802
	Total land area of FE		8.885
	FACILITIES / EQUIPMENTS		
1	LCD	45	
2	Computers	200	
3	Laptops	12	
4	AC	144	
5	Chairs	1.500	
6	Workbench	150	
7	Session tables	40	
8	Session seats	450	
9	Guest tables	16	
10	Cupboards	45	
11	Bookshelf	15	
12	Reading tables	8	
13	Library books	1.381	
14	Journals collection	37	

Research Method

This research used the qualitative phenomenology approach. The goal is to describe a "lived experience" of lecturers in the implementation of ICT in teaching Economics to undergraduate students than to explain their experiences. Phenomenology is concerned with the study of experience from the perspective of the individual, bracketing taken-for-granted assumptions and usual ways of perceiving (Lester, 1999, p.1). The place of the research is in the faculty of Economics, YSU because the faculty is the youngest of the faculties in Yogyakarta State University and has an adequate enough infrastructure and facilities including the use of ICT in education. Most of the lecturers at the faculty are likewise used to implement ICT in their teaching activities. Moreover the faculty focuses on the field of Education meaning that it trains students to be teachers that can be a model on how to teach Economics for the future generation with ICT aids. This research was done during the period December 2014 to May, 2015. The determination of the source of data employed the snowball sampling technique, consisting of lecturers of Economics Education Department, through in-depth interviews, observations and documentation and also students of the Department of Economics Education, who were given open-ended questions for cross-checking the information. The technique of data analysis encompassed three interactive procedures among data collection, data reduction, data display, and conclusion drawing and verification.

Results and Discussion

The faculty contains seventy (70) State' s lecturers, six (6) contract lecturers and two thousand seven hundred and forty seven (2747) students, in which nineteen (19) lecturers and three hundred and ninety-five (395) students belongs to the department of Economics Education according to the staff of academic office of the faculty on April 22th, 2015.

For the objectives of this research, a sample of ten (10) lecturers including five (5) males and five (5) females at the Economics Education department was conducted by in-depth interviews, observations and documentation. Then, for cross-checking the information, a sample of forty (40) students of the department was conducted by open-ended questions.

The findings constitute the use of ICT by the economics' lecturers of the Faculty of Economics, Yogyakarta State University, the reality of their skill in using ICT in teaching and the impact of ICT use on teaching.

About the use of ICT by the economics' lecturers of the Faculty of Economics, Yogyakarta State University, first, the faculty always improves the quality of its education conforming to the evolution of science and technology. It was started from using the OHP until the LCD. The facilities at the faculty are adequate enough for the learning activities, among others the use of Internet, LCD projector and e-learning. Moreover, the lecturers are familiar using ICT tools in teaching.

Second, Internet is used for browsing, LCD projector for visualizing materials, and Be-Smart (e-learning) for learning support. ICT helps the lecturers in searching materials, simplifies the process of transferring knowledge and reduces the shortage of shortcomings they may face at the time of learning in classrooms.

Third, the lecturers are aware of the benefits received from the use of ICT in teaching Economics but ICT only is not enough for teaching, it should be combined with the manual media and the traditional classroom practice. Thus, these lecturers usually use the blended learning system in teaching.

The reality of the economics lecturers' skill in using ICT in teaching at the Faculty of Economics, Yogyakarta State University is that first, the skill of the economics' lecturers at Yogyakarta State University is centered on the average level. This is due to the lack of training of these lecturers on ICT. They are only received the basic training but not the advanced. It is also noticed that the male lecturers are more competent in ICT than female lecturers. Nonetheless, the lack of ICT knowledge belongs to the old lecturers but not to the youngers.

Second, although the common strategy used by the lecturers is to give a lecture with PowerPoint presentations, their skill can be seen through their creativity in operating this media. Furthermore, the common ICT tool used by the lecturers in classrooms are laptop and LCD projector for displaying materials but not all of the lecturers use Be-Smart or e-learning and other tools such as microphone, speakers and pointer in the teaching and learning process. This is what differ the competence of these lecturers in ICT.

Third, the common ICT-activities used by these lecturers are presentation of materials and students' assignments, sending assignments through email and the enrichment of materials through Internet browser. For the expert and advanced lecturers, they can make a supplement of materials through Be-Smart and even do discussion forums, sending and receiving students' assignments, watching educational movies, listening music to encourage students to learn. In short, their ways of teaching are more varied than the average lecturers so that students feel motivated and enjoy the course that they provide.

The impacts of ICT use on Economics Teaching at the Faculty of Economics, Yogyakarta State University are first, the assessment of the students is increasingly aggravated. One of that is the plagiarism issue. To evaluate the hard copy of students' assignments, the lecturers look at the beauty of the language used by the students or look at the resemblance of the students' copy. While for the soft copy of students' assignments,

some of the lecturers use ICT software against plagiarism such as viper but some of them type the doubtful sentences on Google. Concerning the students' presentation using PowerPoint, lecturers look at three aspects: the substance of the contents that should be conformed to the learning objectives; the creativity of the students; and the font and color used in accordance with the size of the classroom.

Second, for the perception of students' experience in the course, ICT renders them to focus on learning. They feel being helped and have fun with ICT even there are an improvement of their achievement and the quality of education. Thus, it makes the pedagogical practice more effective and efficient. On the other side, the students can be lazy and less discipline with ICT rules. While in general, students understand the way of using ICT in their learning activities but not so deeply.

Third, regarding the professional impact of ICT use for the lecturers, the usage of ICT increases their competence and their confidence to transfer knowledge. Yet they become dependent on it. Indeed, ICT really supports and helps lecturers in their professional practice and it is not only in the teaching activities but also in the research. Therefore, it makes their work easy and more professional. Consequently, all of economics' lecturers and even students appreciate and always use ICT in their pedagogical practice.

Fourth, there are ten factors that encourage economics' lecturers in the faculty using ICT: the global challenge, the awareness of the faculty staff on the importance of ICT usage, the existence of a computer center at Yogyakarta State University, the facilities available in classrooms, the competence of the lecturers, the adaptation of economics subjects using ICT, the students' understanding and abilities in ICT, the existence of Wi-Fi in the campus, the existence of technical ICT-staff and the availability of the taught subjects related to ICT usage such as micro-teaching, computer applications and development of instructional media.

While despite these favorable factors, the faculty faces many problems on ICT, among others, the insufficiency and the lack of maintenance of the available ICT tools in classrooms, the lack of equitable distribution and utilization of facilities, the limited numbers of computers in laboratory, the non-renewal of LCD projectors and the inadequate infrastructure of the installation of ICT tools in classrooms, the lack of speed of the internet connection, the power failure, the optical cable problem, the lack of creativity and knowledge of lecturers making better PowerPoint presentations, the financial limitations of the students on the cost of technology, the lack of knowledge of foreign languages like English of the lecturers and the students, and the non-existence of a digital library and an economic and business integrated laboratory.

Conclusion and Suggestions

First, the use of ICT in the Faculty of Economics, Yogyakarta State University is that the Internet is used for browsing, LCD projectors for visualizing materials, and Be-Smart (e-learning) for learning support. However, ICT alone is not enough for teaching so the lecturers usually use the blended learning system in teaching. Second, the lecturers' skill in using ICT in teaching is in the average level. It is also noticed that the male lecturers are more competent in ICT than

female lecturers. Their skills can be seen through their creativity in operating ICT media, and the variation and the number of ICT tools used in the classroom. Third, the impacts of ICT use on teaching are the increase of the competence and the confidence of the lecturers to transfer knowledge. This is not only in teaching activities but also in research. Although ICT renders the students to focus on learning and it makes the pedagogical practice more effective and efficient, the fight against plagiarism remains a big issue for lecturers in the assessment of the students' abilities. Besides, among the encouraging factors to use ICT in teaching are the global challenge, the available facilities and the adaptation of economics subjects using ICT tools, while the unfavorable factor is the lack of creativity and knowledge of the lecturers in making better PowerPoint presentations for the students.

To reach the goal towards the World Class University, the faculty of Economics at YSU cannot stay within the existing conditions. There are plenty of facilities, infrastructure to be repaired and equipped such as the usage of speakers and microphone in the classroom, the improvement of all LCD projectors, the installation of two switches in every classroom (one for the light in front and one for the rest) so that if the lecturers use LCD, they can just turn off the light near the screen and the pictures would be clear to watch. The plug and the lecturers table also should not be so far in order to make lecturers feel comfortable in teaching. The installation of optical cable map is also recommended because when there is construction, it will not affect the network. Thus, all the communities of the faculty (staff, lecturers, students) are responsible to maintain the durability of existing facilities and the ICT-staff must be diligent in checking or taking care of these facilities. In the use of ICT in Economics, lecturers should improve more their knowledge in ICT in pedagogical practice, most of all, the mastering of PowerPoint presentations in order to increase the students' interests. The creativity of lecturers should be required and also the management of changing slide of PowerPoint should be done slowly so that the lessons would be well received by the students because it is not necessarily that all of them could understand what the lecturers are talking about. It is recommended because some of the students are not brave to ask the presented materials by the lecturers however they neither understand the lesson. The Faculty should also make a socialization of the usefulness of e-learning and barcode system so that all lecturers will be aware of its utilization. ICT training that encourages women should be forecasted by the faculty. The faculty should provide ICT training for lecturers every year in order to improve and to update their knowledge in ICT and it requires the diligence of the lecturers as well, most of all for those who still feel lack of abilities in ICT. An assessment of ICT-abilities should be mainly required by the faculty in the recruitment of new lecturers. The lecturers and the students should improve their English language such as following an English course or practicing English with English speakers or reading English books or watching English movies so that they can easily understand English economics books or journals on the internet. The faculty also should add an Economic and business integrated laboratory so that the students could not only be rich in theory but also could implement these theories in a

laboratory. The faculty should have the facility to support the research activities of either students or lecturers so that the results could be published locally, nationally or internationally such as the implementation of digital library. Furthermore, with the digital library, lecturers and students could access books or journals not only inside YSU but also outside YSU even in abroad so that the access of the learning resources could be obtained anywhere and could make the time more efficient. As the faculty of Economics at YSU focuses on the field of education, the lecturers should not always use ICT in teaching in order that students can get an example to teach Economics with fun without ICT. Perhaps, these students will teach in an undeveloped area as seen as still many parts of Indonesia do not have access to electricity. So these future teachers can easily teach even if there is no ICT aid.

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