E-LEARNING IN INDONESIA: SOCIETAL, UNIVERSITY MANAGERS' AND UNIVERSITY STUDENTS' PERSPECTIVES

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ABSTRACT

The phenomenon of rapid e-learning development in Higher Education Institutions has been observed all over the world. Previous researches have revealed the benefits, challenges and implications of e-learning within the University. Yet less evidence was found to study the implication with more comprehensive stakeholders. This research attempts to fill the gap by exploring e-learning implications in wider stakeholders including the general society as well as potential university students who need to continue their further education, University managers who build and manage e-learning degree programmes and students enrolled in e-learning degree programs. Research data was gathered using relevant survey techniques to collect information regarding e-learning implication for each sample group. The findings reflect the implications of e-learning in providing the educational needs of the 3 respondent groups and potentially improve the nation's higher education quality and accessibility. The e-learning environment was found to have adequately facilitated quality learning comparable to conventional face-to-face on campus method. Those implications become an opportunity for Higher Education Institutions, yet universities continue to face challenges that prevent them from gaining optimal benefits of implementing e-learning environments.

Key words*: e-learning, higher education, university, blended program, Indonesia*

INTRODUCTION

Despite a rapid development of e-learning in the education sector, past research indicated there is inconclusive understanding towards the application in Higher Education Institutions (Pande, 2016; Nortvig and Balle, 2018). Therefore, it is necessary to initiate what is the definition of e-learning in this paper before further discussion. This research follows the e-learning context defined by the Indonesian Minister of Education and Culture Regulation number 109/2013 which is in line with Jenkins and Hanson (2003) who defined e-learning as the utilization of information platform based on information and communication technology for the purposes of learning that can be accessed by learners anytime and anywhere. This definition represents the basic understanding of e-learning in which it utilizes technology for learning and teaching process.

Without a doubt, e-learning is progressing following technology development despite having evolved for almost 60 years starting from its roots in distance learning method (King and Alperstein, 2015), subsequently evolving into correspondence learning using postal service, radio, telephone, television network to computer based distance learning pioneered by the University of Illinois in Urbana Champaign with its Programmed Logic for Automatic Teaching Operations for computer assisted instruction course in 1960. The application of internet infrastructure took place in the 1980s forming online education and accelerated rapidly through the introduction of the world wide web (www) in the early 1990s. Throughout the evolution period, Higher Education Institutions have tried to establish different forms of learning and teaching approaches.

Researchers have reported that Higher Education Institutions faced a number of challenges to implement e-learning application. Tarus et al (2015) found that

technology inadequacy is the major problem in implementing e-learning in Kenyan public universities. Steyn and Belle (2015) exposed that barriers to develop e-learning program is not only a lack of technology resources, but factors related to learning supports such social interaction and student assistant also hinder e-learning utilization in South Africa. Mirzamohammadi (2017) argued that Iranian universities faced challenges including human, infrastructure, culture, academic support and student support factors. He concluded that the low readiness toward those factors caused Iranian universities unprepared for e-learning development. Al-adwan and Smedley (2012) suggested student and universities in Jordan to increase their technology readiness after observing technology barriers that prevented them from achieving learning flexibility through e-learning.

Apart from the challenge to properly implement e-learning, research revealed benefits that can be gained from e-learning. Khan et al (2017) argued that e-learning is a platform to provide a consistent monitoring towards course quality with measurable learning outcomes and facilitation to present information in a variety of ways, breaking information into appropriate segments, clarifying expectations, promoting active learning, and the effective use of discussions.

Benta et al (2015) explained that e-learning assisted in the decision making process to solve many problems in human communication as well as allow Higher Education Institutions provide a cost-effective learning environment. Khlaisanga and Likhitdamrongkiatb (2015) described that e-learning facilitates a platform to create an integrated model to align educational technology and pedagogy in order to enhance students' cognitive skills.

However, the literature review indicated there is less evidence that attempt to explore e-learning's implication and contribution in a more comprehensive view as researchers tend to study e-learning solely from University level (González-Gómez et al, 2016; Arkorful and Abaidoo, 2014). E-learning implementations should endeavour to satisfy the needs and concerns of all stakeholder groups as much as possible (Benta, et al,

2015). E-learning should impact educational development at a national level (Tanye, 2017), in particular in developing countries (Andersson and Grönlund, 2009).

The current research is motivated to study a wider viewpoint of e-learning implication that links three different perspectives of the General Society, University Managers and student. A wider view of research scope is perceived to be able to capture a more comprehensive e-learning implication in terms of fulfilling the society's needs for education that improve the nation's higher education quality and accessibility. Such wider view also captures the implementation status of e-learning in Higher Educational Institutions from University managers and University students' learning experiences. From this motivation, the purpose of this research is to explore e-learning implication from education stakeholders including the society, University Managers and University students enrolled in e-learning programs. In particular, this research attempts to identify e-learning implication and contribution towards Indonesian Higher Education sector.

METHOD

This research adopts the descriptive method to describe, organize, summarize research data and present them in tables. Vetter (2017) suggested to use the descriptive method for research that attempts to describe data gathered. This method is perceived as an appropriate approach to assist achieving the research purpose to calculate, summarize and describe the features of data in a sensible way. The data collection approach in this research is the survey technique which was employed to gather information from the population. As the objective of the research is to describe e-learning implication from 3 different stakeholders of e-learning, thus the population of the research consisted of three different groups who have interests towards e-learning implication.

Three different surveys were conducted for different categories of respondents to capture a wider perspective from e-learning implication. The first survey was conducted online between 17 April-30

April 2018 to gather perspective from the society regarding perception towards e-learning application. Respondents are those who are in the age between 18-35 years old and able to afford to continue their further study.

The survey reached 375,841 respondents where 33,900 respondents gave their responses with a final 1,521 respondents who completed the whole questionnaires. The second survey gathered data from 80 University leaders and managers who attended an e-learning seminar by the Higher Education Institutions region 3 regulator for Jabodetabek region in late January 2018. The third survey was conducted to gain opinions from students who experienced e-learning through blended degree programmes from different universities. These semesterly surveys are filled by students to evaluate their learning experiences a week before mid-term and final exams.

RESULTS AND DISCUSSION
Nationwide Higher Education Survey

Most respondents were male, accounting for 64% of total sample and the remaining 36% is female. Most respondents were aged between 18-21 years old, accounting for 53% of the sample. Majority of the respondents' education level was high school, accounting for 68%. Respondents with undergraduate degree qualifications were 83%. 46% of respondents were unemployment either they were still studying at University or job searching.

Most working respondents were private company employees (28%). The majority of respondents' monthly income was below IDR 2.5 million (74%). Overall, respondent profile represents working people who wish to improve their future lives.

Table 1. Survey Respondents' Profile

Gender	Male	Female
No.	968	553
%	64%	36%

Income	< 2.5	2.5 to 5.0	5.0 to 7.5	> 7.5
No.	1127	252	72	70
%	74%	17%	5%	5%

Age	18 to 21	22 to 25	26 to 29	30 to 35	> 35
No.	813	250	121	143	194
%	53%	16%	8%	9%	13%
Education	≤ Jr SS	SS	Dip.	UG	PG
No.	138	1028	85	246	24
%	9%	68%	6%	16%	2%
Occupation	PE	CS	SE	UE	HW
No.	424	99	180	703	115
%	28%	7%	12%	46%	8%

Abbrev: Age: Respondent's age (in Years); **CS:** Civil Servant; **Dip.:** Diploma; **HW:** House Wife; **Income:** Monthly income (in IDR millions); **No.:** No. of respondents; **PE:** Private sector employee; **PG:** Postgraduate; **SE:** Self employed; **SS:** Secondary School; **UE:** Unemployed; **UG:** Undergraduate

Respondents' interest for gaining tertiary educational qualification is high, with 68% of the total sample interested to further their education. This interest is consistent when the data is grouped into respondents with education level from Diploma and below (accounting for 68%) and respondents with undergraduate level and above (accounting for 67%).

Table 2. Respondents' Interest To Continue Further Study

	Further Education Plans ?	Total	%	< Dip.	%	> UG	%
YES	For better job prospects	723	48%	633	51%	90	33%
YES	For current career	237	16%	163	13%	74	27%
YES	Influenced by advert	21	1%	17	1%	4	1%
YES	For personal pride	48	3%	35	3%	13	5%
NO	Not interested	492	32%	403	32%	89	33%
	Total	1,521	100%	1,251	100%	270	100%

*Abbrev: < Dip. : Diploma holders and below ; > UG : Undergraduate holders and higher; **Total** : Total respondents*

The data was analyzed to find what factors the respondents consider when making decisions about further study. For this purpose, the respondents were grouped into those with Diploma level below and those with undergraduate level above. Tuition fee was the main factor (66%) hindering respondents with Diploma qualifications and below to further their study. This factor is consistent to respondents with undergraduate above where 61% of respondents were unable to afford their tuition fee.

Table 3. Factors that Determine Further Study Decision

No.	Factor	Interested but not continue further study				Not interested to continue further				Total	%
		< Dip.	%	> UG	%	< Dip.	%	> UG	%		
1	Cost	557	66%	110	61%	160	40%	22	25%	849	56%
2	Time	104	12%	40	22%	64	16%	19	21%	227	15%
3	Location	33	4%	4	2%	8	2%	2	2%	47	3%
4	Still studying	154	18%	27	15%					181	12%
5	Not interested					171	42%	46	52%	217	14%
	Total	848	100%	181	100%	403	100%	89	100%	1521	100%

*Abbrev: < Dip. : Diploma holders and below ; > UG : Undergraduate holders and higher; **Total** : Total respondents*52% of respondents has never heard of online education. Considering the survey was conducted online and the respondents were internet users, it is an opportunity to educate the society about e-learning. Data analysis towards interests to study using e-learning found that 41% of total respondents was interested to continue their further education through online education.

Tables 4. Knowledge of Online Education

No.	Aware of online education	Total	%
1	Yes	786	52%
2	No	307	20%
3	No answer	428	28%
	Total	1,521	100%

Tables 5. Interest on Online Education

No.	Interested to study online	Total	%
1	Yes	619	41%
2	No	474	31%
3	Unsure	428	28%
	Total	1,521	100%

University Managers' Survey

The respondents for University Managers survey held high level of authority in developing e-learning program at their respective institutions. Of the respondents, 42% were at top management level, 8% held leadership roles at faculty level and 7% held the authority to manage their study program. Even though 34% of respondents were University staff, they were the individuals who held authority related to e-learning development such as head of the IT or University administration department.

Table 6. University Staff Survey Respondents Position

	Position	No.	%
1	Rector/Vice Rector	35	42%
2	Dean/Vice Dean	7	8%
3	Head, Study Program	6	7%
4	Lecturer	7	8%
5	University staff	28	34%
	Total	**83**	**100%**

Almost all respondents (91%) admitted that e-learning is important and needed at their University. 55% perceived e-learning was very important. This response represented views of those who run and manage the Universities' operations.

Table 7. Perception on the Importance of E-Learning

	Role	A	B	C	D	E	Total
1	Rector/Vice Rector	22	13	0	0	0	35
2	Dean/Vice Dean	4	3	0	0	0	7
3	Head, Study Program	4	2	0	0	0	6
4	Lecturer	2	2	3	0	0	7
5	University staff	14	10	3	0	1	28
	Total	46	30	6	0	1	83
	%	55%	36%	7%	0%	1%	

Abbrev: A : Very Important; **B :** Important; **C :** Neutral; **D :** Not Important; **E :** Very Not Important

As e-learning does not merely cover technology equipment or digital materials, e-learning virtual environment should be applied to support the e-learning process throughout the learning and teaching process. Respondents were asked what aspects of learning that they have already implemented in their e-learning virtual environment. 53% recognized that their e-learning virtual environment covered on-line discussion forums.

Table 8. Key E-Learning Features in the Learning Process

	Role	OD	OR	PA	LW	OT	ET	P	A
1	Rector/Vice Rector	13	13	7	0	2	9	6	0
2	Dean/Vice Dean	1	0	0	0	0	0	1	0
3	Head, Study Program	2	1	2	0	0	1	1	0
4	Lecturer	2	1	1	0	0	0	0	0
5	University staff	26	26	5	5	4	12	8	2
	Total	44	41	15	5	6	22	16	2
	%	53%	49%	18%	6%	7%	27%	19%	2%

Abbrev: A : Administration; **ET** : Entry Test; **LW** : Live Web binar; **OD**: Online Discussion Forum; **OR** : Online re-registration; **OT** : Online Thesis; **P** : Payment; **PA** : Peer Assessment.
Note: Each respondent may have selected more than 1 learning feature(s).

Respondents perceived that price is the most important factor to considered in selecting a Learning Management System (LMS). This response is consistent to the question related what is the most challenging factor to implement e-learning as shown in the table below.

Table 9. Most Important Factors in Selecting an LMS

	Role	P	HS	F	C	E
1	Rector/Vice Rector	6	4	3	3	1
2	Dean/Vice Dean	0	2	1	1	0
3	Head, Study Program	2	1	0	1	0
4	Lecturer	1	1	2	1	0
5	University staff	10	10	7	12	14
	Total	19	18	13	18	15
	%	23%	22%	16%	22%	18%

Abbrev: C : Customisation; **E :** Easy to use; **F** : Flexibility; **HS:** Helpdesk support; **P**: Price

Respondents revealed that budgetary constraints were the most challenging factor for implementing an e-learning degree program. In particular, the budget constrain is related to the cost to purchase the LMS and building digital contents. The second most challenging factor was inadequate technological skill as the universities need to have such skill to build their e-learning degree programmes. The University Managers also faced implementation challenges due to a lack of knowledge regarding to e-learning virtual environment, software systems and application. Interestingly, lecturers' resistance also became a problem as some lecturers mistakenly perceived that technology software application may result in replacing them leading to mass staff layoffs.

Table 10. Problems in Implementing E-Learning

	Role	BC	LR	LM	LIT	RC	IK	LP	LPS
1	Rector/Vice Rector	16	5	8	16	4	10	6	2
2	Dean/Vice Dean	3	0	0	4	2	0	0	0
3	Head, Study Program	4	2	2	1	1	1	1	0
4	Lecturer	1	0	0	1	0	3	0	0
5	University staff	10	8	7	9	6	7	3	1
	Total	34	15	17	31	13	21	10	3
	%	41%	18%	20%	37%	16%	25%	12%	4%

Abbrev: BC : Budget Constrain; **IK** : Inadequate Knowledge; **LIT** : Lack of IT Skills; **LM** : Lack of Management Support; **LP** : Lack of People; **LPS** : Lack of Project Skills; **LR** : Lecturers' Resistency; **RC** : Regulatory Constraints. **Note:** Each respondent may have selected more than 1 problem(s).

Several universities have developed e-learning for various degree and non-degree programmes. Undergraduate programs were the most established (35%), followed by professional (working) class programmes (25%).

Table 11. E-Learning Programmes Offered

	Role	PC	UG	PG	PCP	TP	M	BP
1	Rector/Vice Rector	11	8	6	4	1	0	3
2	Dean/Vice Dean	1	2	1	0	0	0	2
3	Head, Study Program	4	0	0	1	0	0	2
4	Lecturer	0	1	1	0	0	0	1
5	University staff	5	22	7	5	1	1	4
	Total	21	33	15	10	2	1	12
	%	25%	40%	18%	12%	2%	1%	14%

Abbrev: M : MooC; **PC** : Professional Class Program; **PCP** : Professional Certification Program; **PG** : Postgraduate Program; **TP** : Training Program; **UG** : Undergraduate Program.
Note: Each respondent may have selected more than 1 program type(s).

University Student Survey

Students who were enrolled in two blended online master degree programmes at two Indonesian universities revealed that their learning experience of online classes were comparable to their offline (on campus) classes, even though it was found that the Teaching and Learning Index (TLI) were slightly different.

Table 12. Teaching and Learning Index (TLI) at Two Indonesian Universities' Masters Programmes

Inst.	Method	Masters Course	TLI
Univ. A	Online	Marketing management & strategy	4.93
		Human resource management	4.54
	Offline	*Corporate finance*	*4.9*
		Managerial economics	*5*
Univ. B	Online	Communication theory & perspective	4.87
		Communication technology & Media regulation	4.74
	Offline	*Research methodology in communication*	*5.2*
		Practical social statistics	*5.1*

Students perceived that learning through both online and offline classes allowed them to achieve the courses' learning objectives. TLI's for online and offline classes in blended online master degree programmes at two universities indicated similar results. The indexes include communication skill, content knowledge, assessment approach and class management.

Table 13. Learning Index (LI) at Two Indonesian universities' Master Programmes

Inst.	Method	Masters Course	LI
Univ. A	Online	Marketing management & strategy	4.76
		Human resource management	4.61
	Offline	*Corporate finance*	*4.9*
		Managerial economics	*5*
Univ. B	Online	Communication theory & perspective	4.73
		Communication technology & Media regulation	4.83
	Offline	*Research methodology in communication*	*5.1*
		Practical social statistics	*5.1*

The education profile of 77% the respondents where high school graduates representing Indonesia's current gross education enrollment rate. It is understood that 9% of the respondents were not interested to continue their study, whilst 68% did not have the opportunity to study further education due to financial, time or location constraints. Breakthrough solutions are needed to solve such constraints and provide opportunity for those who have limitations to continue their study. Interestingly 41% of the respondents were interested to enroll in an e-learning based degree programmes but currently such learning options were not available to them. These young individuals wished to improve their living conditions as their main objectives were finding better jobs and improving their careers. This huge demand is an opportunity neglected due to unavailability of suitable degree programmes. We cannot ignore our responsibilities to contribute in providing learning opportunities for those unserved potential students. The ultimate responsibility is in the hands of the governmental authorities and Higher Education Institutions.

E-learning education degree programs currently are available only in a handful of Indonesian Higher Education Institutions. Those institutions offer such university degree programmes in collaboration with third parties who possess technology infrastructure, knowledge and experience. The availability of e-learning degree programmes is currently limited by governmental regulatory requirements that requires staged operational level starting from blended online degree programmes prior to the study programme being eligible to apply for a full e-learning licence (a separate, independent new study programme in the university). Such regulation limits the opportunities offered for potential students requiring more than half of the courses in a blended learning study programme to be conducted in a face-to-face manner (on campus). Our observations found that university students who experienced various e-learning online degree courses, perceived those online courses experience achieved learning objective comparable to face-to-face classes. The existing e-learning study model has been adequately designed to enable adequate: student to student, and student to lecturer interactions; learning task workout; students' learning and lecturers' teaching monitoring.

Higher Education Institutions have realized the importance of e-learning in learning and teaching process. Yet there continues to be a lack of understanding on how to adequately build e-learning virtual environments. Financial issues consistently were found to be the main challenge due to a widespread belief that to implement e-learning at a degree level will requires purchasing high cost technology softwares and hardwares. Furthermore, University Managers have found it hard to justify such expenditure budget without clear understanding of the e-learning market needs and preparing a realistic financial plan.

The knowledge limitation issues are identified in technology skill and e-learning education framework that have resulted in University Managers unable to optimize the benefits and the scope of the e-learning degree programmes. A consistent misunderstanding of the e-learning concept has cause widespread resistance from lecturers who look at the technology application as a threatening substitute resulting in their attempts to defend their jobs by rejecting to adopt such technologies. Overall, this research has gained a more comprehensive tri-partite views from key stakeholders in e-learning application that covers the general society, University Managers and University students.

CONCLUSION

This research has shown key e-learning implications in Higher Education Institutions for various stakeholders. The technology advantages of e-learning applications have and will continue to reshape learning and teaching processes that created benefits for all related stakeholders. E-learning is not only able to provide breakthrough solutions in terms of place and time, but also reduced the costs to provide affordable and quality higher education allowing Higher Education Institutions efficiently deliver courses with economies of scale, whilst maintaining high quality standards. It provides opportunities for Higher Education Institutions to offer educational degree programs to meet the society's unserved educational needs. Such utilization of e-learning advantages at a national scale can potentially rapidly improve the country's educational level, particularly for developing countries with wide geographic coverage such as Indonesia that has low overall gross higher education enrollment rate.

University Managers play a key role in the development of e-learning programmes that can contribute and improve the nation's general education level. However, the classic challenges of budgetary and knowledge constraints consistently hinder Higher Education Institutions to realize the benefits of properly implementing e-learning. Low e-learning implementation rates amongst Indonesian Higher Education Institutions have contributed to poor and slow development in the nation's higher education level.

There is almost a 50% unserved higher education market demands that requires educational offerings that can meet potential students' economic and working conditions. In fact, existing e-learning degree

programs are able to deliver quality education that can compete with conventional face to face methods in meeting the courses' learning objectives. Students experiencing learning using e-learning methods have expressed their high satisfaction whilst gain the benefit of being able to study anywhere, anytime with affordable tuition. It requires the Indonesia higher education authorities to facilitate and stimulate the development of e-learning systems and pedagogy practices to improve the country's consistently low gross higher education enrollment rate.

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