

# Lecturers' Perspective on Application Features to Support Students' Final Project

Kartika Gianina Tileng\*, Stephanus Eko Wahyudi

Universitas Ciputra, UC Town, Citraland, Surabaya 60219, Indonesia.

\* Corresponding author. Tel.: +6282230189891; email: kargia@ciputra.ac.id

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**Abstract:** The use of information and communication technologies are becoming more and more common, in many sectors, including education sectors. The use of Information and Communication Technology (ICT) in a form of mobile or web based applications might be able to support undergraduate students during their study especially during final project stage. Undergraduate students required to be independent, able to manage their own time, and also build their self-study skills. These skills are important throughout the duration of their study, but becoming essential to master during their final where they pursue their final project or thesis. During final years some students visit the campus less frequently and do not meet their students or supervisors in daily basis. This paper discussed the lecturers' perspective about the effectiveness of using such mobile or web based application to support the students to complete their final project or thesis on time and meet the quality standards.

**Key words:** Final project, technology entrepreneur, mobile application.

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## 1. Introduction

Information and Communication Technology applications continue to grow in a number of different forms of products, such as desktop applications, websites, mobile applications, games and many more. ICT can be used to support various sectors including education. In education, ICT application can support both the students to complete their study as well as to support the lecturers during teaching and learning processes.

University students are required to be able to manage their own free time and able to study independently. Final year students usually visit the campus less frequently as they are busy with internship programs or do thesis/final project. Sometime lecturers who acts as supervisors not able to provide flexible time to coach and mentor all the students they supervise.

A number of different applications are available in the market that might be able to support the communication among students as well as between students and lecturers. The availability of social media such as Facebook already used in different education institutions to enhance teaching and learning processes. Students and lecturers also shown interest on using e-learning systems [1]. A number of different web based as well as mobile e-learning applications also found on the market such as Edmodo or Moodle can be used freely. Additionally, chat platforms including BBM, Line, or the famous WhatsApp also improve the communication between students their respective supervisors.

A number of social media features found on popular social media, e-learning platforms, as well as on those chat platforms. Some of the provided features were considered must have whereas other features

were nice to have features by the students [2]. While these features are considered helpful by students, final project supervisors might not be on the same page. This paper discusses about lecturers' perspective of these features provided on many mobile as well as web based applications.

## **2. Required Application Features on Students' Perspective**

Tileng and Wahyudi [2] found that students suggested notification is a must have feature for mobile or web based applications that can support the coaching and mentoring processes. They need to be notified and reminded about lecturers or campus supervision appointments, milestones, and many other. In many cases students need to communicate and discuss some issues with their supervisors outside their official face-to-face scheduled meetings, hence consultation through a chat feature that allow the student to save and find information easily is needed. As many of the students less frequently visit the campus, they need online accessible campus announcements. Discussion Forums will also beneficial as it allows students to find information or solution based on past experience from other students, which is organized based on a specific topic. An accessible archive of previous student final project reports also very useful, as it allows them to find topics as well as a reference.

A number of different other features also considered to be nice to have [2]. Information about academic writing tips, plagiarism and relevant tools, and progress monitoring are among nice to have features. Students also thought that supervisors should provide final project topics in case they cannot find their own topic. Another nice to have feature was consultation notes feature.

## **3. User Readiness**

The availability of the aforementioned features has to be supported by the students' and lecturers' readiness to use ICT to support teaching and learning processes. Approximately 500,000 devices operating on Android are activated on daily basis [3], not to mention other mobile operating systems such as popular iOS from Apple. While the availability of gadgets is rapidly growing and supported by the interest to use e-learning systems, some of them also find technical difficulties that disturb their readiness to maximize its use [1]. Both students and lecturers should have adequate access to gadgets or computer, software literacy, application usage training, time management [4], and high-speed internet access.

Students satisfaction and motivation to use the system also support the system sustainability. These factors will be decided based self-efficacy on the use of computer, Internet, online communication [5]. Other factors include: self-directed learning and learner control [5].

Interaction designs and usability are important aspects of successful application implementation. Focus on relevant content to its user in one of the factors for a successful mobile application [6]. There were some cases where mobile application have low usability because of a number of reasons, such as too many features, no prioritization on important feature, and ineffective content presentation, that reduce the user interactions [7]. The main purpose and function of the application should be highlighted, and users should get what they expected [8].

## **4. Methodology**

### **4.1. Instruments**

The research was conducted through questionnaires to gather data from lecturers from different universities in Indonesia. The questionnaires consist of 25 questions to gather information about lecturers' perspective about the importance mobile or web based application features that able to support students to complete their final projects. The questions will get responses from lecturers using Likert scale with a number of possible responses: from Strongly Disagree (1), Disagree (2), Neutral (3), Agree (4), and Strongly

Agree (5).

## 4.2. Participants

The survey was conducted through online form and distributed through Indonesian lecturer association forums. There were 50 respondents participated in this survey. The respondents are lecturers from 28 different universities that have previously supervised final projects or thesis.

More than half (52,9%) supervise 5-10 students every semester, approximately a quarter (27,5%) supervised 1-5 students, whereas the rest supervise 11 or more students (Fig. 1). The distribution of the respondent average number of students supervised every semester show that the lecturers have enough experienced supervising students final projects.

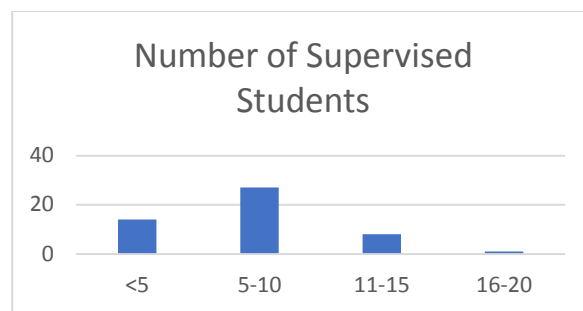


Fig. 1. Number of supervised students.

They come from a variety of course majors (Fig. 2), including: economics, engineering, tourism, design, education, and several others. The diversity of course background is to justify that the data is valid for many of course majors.

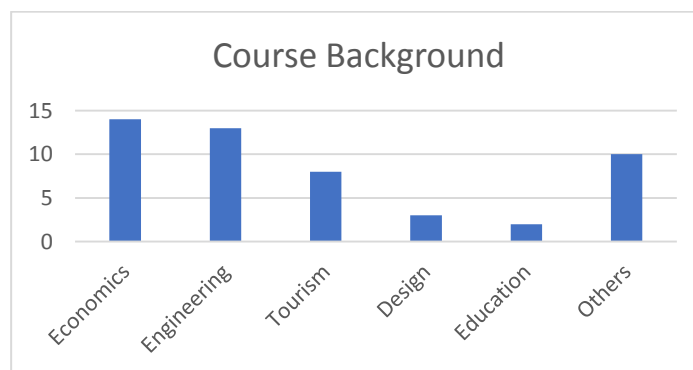


Fig. 2. Respondents course majors background.

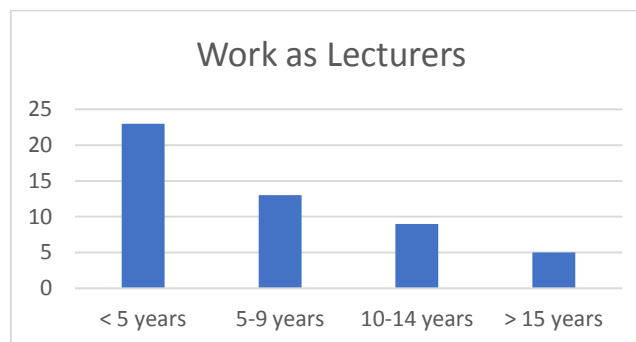


Fig. 3. Duration of work experience as lecturers.

Fig. 3 depicted that 23 lecturers (46%) have been working less than 5 years as lecturers, whereas the rest have been working for more than 5 years as lecturers (54%). A large percentage of the lecturers were experienced lecturers.

## 5. Results and Discussions

The data collected were tested by using multiple regression test, to see whether the factors have simultaneous (whole) effect to dependent factors. There are 4 independent variables: consultation, announcement, discussion forum, and references. The dependent variable for the study is Application.

### 5.1. Independent Variables

Based on a discussion subject coordinators the following features are the independent variables of the students' final project support applications:

1. Consultation Variable: online communication that allows students to discuss and consult their final project progress with lecturers.
2. Announcement Variable: online announcements relevant deadlines and other information related to final projects have to be accessible whenever needed.
3. Discussion Forum Variable: Discussion forums availability.
4. References Variable: the availability of online references archive that can be uploaded and downloaded independently.

### 5.2. Dependent Variable

Following are the dependent variable for the development of application to support students' final project:

- Application Variable - Do you agree that information and communication technology application such as mobile or web based application can support students during final project coaching and mentoring processes, as a means of communication and collaboration tool among students along with between lecturers and students?

### 5.3. Validity Test

The variables were considered as valid if the rightmost column (Application) value compared to each independent variable were greater than 0.3 [9]. As seen on the validity test result (Table 1) all of the variables are considered valid as they were greater than 0.3.

Table 1. Correlations

		Consulta-ti on	Announce- ment	Discussion_F orum	References	Application
Consultation	Pearson Correlation	1	.271	.276	.323*	.320*
	Sig. (2-tailed)		.057	.052	.022	.024
	N	50	50	50	50	50
Announcement	Pearson Correlation	.271	1	.369**	.618**	.408**
	Sig. (2-tailed)	.057		.008	.000	.003
	N	50	50	50	50	50
Discussion_Forum	Pearson Correlation	.276	.369**	1	.398**	.518**
	Sig. (2-tailed)	.052	.008		.004	.000
	N	50	50	50	50	50

References	Pearson Correlation	.323*	.618**	.398**	1	.408**
	Sig. (2-tailed)	.022	.000	.004		.003
	N	50	50	50	50	50
Application	Pearson Correlation	.320*	.408**	.518**	.408**	1
	Sig. (2-tailed)	.024	.003	.000	.003	
	N	50	50	50	50	50

\*. Correlation is significant at the 0.05 level (2-tailed).

\*\*. Correlation is significant at the 0.01 level (2-tailed).

#### 5.4. Reliability Test

The data was considered to be acceptable if the Cronbach Alpha value was greater than 0.7 [9]. The value obtained from the reliability test (Table 2) was 0.802 which means that the data are reliable.

Table 2. Reliability Statistics

Cronbach's Alpha	N of Items
.725	5

The item statistics can be seen on Table 3.

Table 3. Item Statistics

	Mean	Std. Deviation	N
Consultation	4.2000	1.04978	50
Announcement	4.5600	.67491	50
Discussion_Forum	3.9400	.95640	50
References	4.4800	.61412	50
Application	3.8200	.59556	50

Following the test, one data item removed and then another reliability checked with Cronbach's Alpha. The results can be seen on Table 4.

Table 4. Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
Consultation	16.8000	4.776	.383	.746
Announcement	16.4400	5.476	.539	.664
Discussion_Forum	17.0600	4.629	.508	.674
References	16.5200	5.561	.585	.656
Application	17.1800	5.661	.571	.662

#### 5.5. Multiple Regression Test

Before the multiple regression test conducted, a set of hypotheses was determined, in the form of H0 and H1. H0: There was no simultaneous influence between the independent variables to the dependent variable. H1: There was a simultaneous influence between the independent variables to the dependent variable.

The test was conducted simultaneously so F test was necessary. If the value of F was less than 0.05 then

H0 is rejected, and H1 is accepted and vice versa. Based on the data displayed on Table 5, Sig value. was under 0.05, which was meaning that H0 was rejected and H1 was accepted. It meant that the variables offered to lecturers/supervisors influenced the decision to use ICT applications such as mobile or web based application to support final project coaching and mentoring processes.

Table 5. ANOVA<sup>a</sup>

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	6.096	4	1.524	6.078	.001 <sup>b</sup>
	Residual	11.284	45	.251		
	Total	17.380	49			

a. Dependent Variable: Application

b. Predictors: (Constant), References, Consultation, Discussion\_Forum, Announcement

Fig. 4 depicted the Histogram of Application as Dependent Variable. The data was distributed quite normally as depicted on Fig. 4. As seen on the diagram the data build up a normal curve with a slight abnormality, so it was still considered good enough.

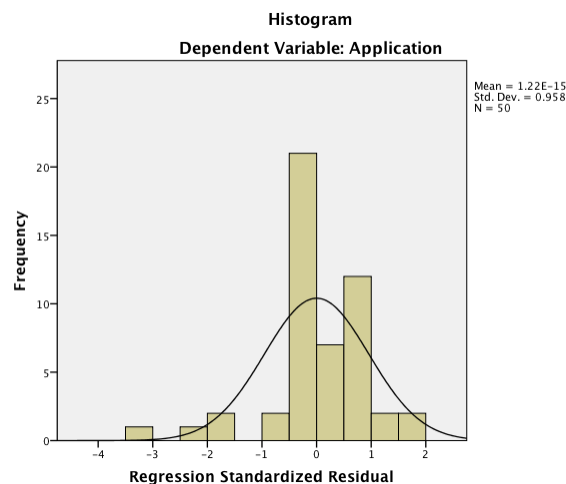


Fig. 4. Histogram, dependent variable: application.

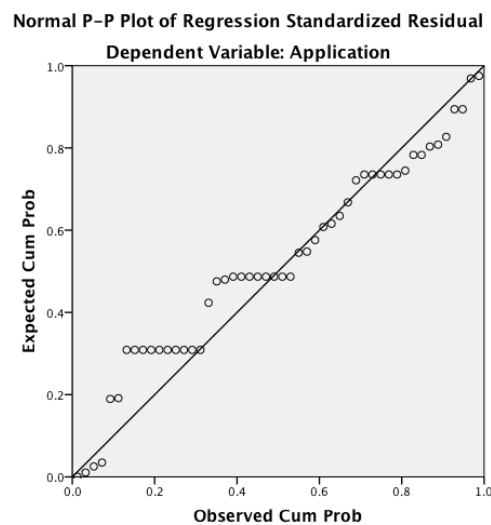


Fig. 5. Normal P-P plot of regression standardized residual, dependent variable: application.

Fig. 5 depicted the data distribution based on Normal P-P Plot of Regression Standardized Residual with Dependent Variable: VD. The data spread across the graphic but near to the diagonal line which meant that the data were normally distributed and met the its normality assumption.

## 6. Conclusion

Based on the results of the study can be concluded that in the final project supervision, especially for students in Indonesian universities, lecturers who acts as student's final project supervisor agreed that supporting ICT applications will be beneficial. They believed that in most cases the availability of the ICT application can promote communication among students as well as between lecturers and the students. Such system will allow complement the traditional scheduled face-to-face meetings between the lecturers and the students. Announcements accessible online, Discussion Forums, and a library of related references will also be very useful for the success of students' final project completion.

There was a limitation to the research as the survey participant was limited to 50 respondents. However, similar analysis will be conducted after the completion of the development of a mobile and web based applications.

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**Kartika Gianina Tileng** completed her bachelor of economic at 2009 and master of computer science at 2011 at Satya Wacana Christian University, Salatiga, Central Java, Indonesia. In 2010, she worked in Faculty of Computer Science as a part-time lecturer to teach about Management Information Systems' courses while doing her postgraduate study. Since 2011, she has been working as a full-time lecturer in the Informatics Department of Universitas Ciputra Surabaya.



**Stephanus Eko Wahyudi** completed his bachelor of informatics engineering Universitas Surabaya in 1995. He worked in the Department as adjunct lecturer soon after he was graduated, and later became a full-time lecturer assistant. In 2004, he received Australian Development Scholarship (ADS) award, a prestigious award from the Australian Government to continue his study at Monash University, Melbourne - Australia. During his study at Monash, he was awarded another scholarship - Monash University International Scholarship for Excellence. In 2005, he completed his study and entitled Master of Multimedia. Upon completing his study he returned to Indonesia and work as the chief information officer (director of management information system directorate) of Universitas Surabaya as well as a lecturer in the same university. Since 2014, he has been working as lecturer and Informatics Head of Department at Universitas Ciputra Surabaya.