

## **The influence of digital literacy on Students' independent language learning**

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**Abstract:** The ability to make use of internet amenities is often called digital literacy. This kind of competency has been understood as motivation, knowledge, skill, and attitude in using digital gadgets effectively; such as smartphones, tablets, laptops, and desktop PCs. This study examined the relationship between digital literacy and student's independent language learning. This research applied a quantitative approach. The population of this research is the students of Universitas Islam Indonesia that have taken General English class in the first semester. The closed questionnaire collected the research's primary data and supported by structured interviews (by 90% response rate). Meanwhile, the sampling technique used is purposive random sampling, and data analysis method used is the Pearson Product Moment's correlative coefficient and regression analysis. The result revealed the significant positive influence of digital literacy types on students' level in independent language learning.

Keywords: Digital literacy, virtual world, independent language learning, motivation.

### **Introduction**

The implementation of information technology in the world of education has a wide range of layers, from the basic concept to the most complicated implementation. (Maddux, Johnson, and Maddux, 2008) Therefore, nowadays has emerged methods, approaches, and learning practices which utilize information technology, i.e., multimedia teaching, computer-mediated communications, ICT-enhanced learning, E-Learning, Computer Assisted Language Learning (CALL), Mobile Assisted Language Learning (MALL), Digital Based Education, and others. (Hu and Mcgrath, 2011; Celik, 2013)

The development of technology has also supported teachers and learners to access the information and to do the learning materials independently (Independent Learning). (Hammond et al., 2009) In another word, the dependence of teachers on other parties such as non-digital resources or students' dependence on teacher figures has come to diminish (Yang Mi-seok and Jeong-kyum, 2015) Meanwhile, the ability to access information and internet-based learning resources has inspired education activist by examining methods and new teaching approaches to applying independent learning model.

Independent Learning term has been a new discourse in language learning. However, it owns different similar expression. Some synonyms with similar ideas namely; autonomous learning, non-traditional learning, participatory learning, independent study, self-directed learning, student-centered learning, or self-regulated learning. (Morrison, 2011) (Belton and Scott, 2017)

Thus, a communication media played as one of the certain systems in the independent learning framework. Michael Graha Moore addressed three sub-systems of independent learning between student and teacher;

1. An independent learner is engaged in a learning event.
2. A remote teacher prepares the instruction of the program to be submitted through the communication media.
3. The system of communication media delivers teaching program to the students as the response toward students' need. (Moore, 2016)

This paper will examine the impact of digital literacy to the students' ability in independent

language learning, especially foreign language learning.

## **Theoretical review**

### ***Digital literacy***

The study on the definition of literacy is usually related to the existence of information technology. Therefore, the most popular term representing the definition of digital literacy is a gadget. That is a communication device used in interaction through digital media by two or more people, within the text, image, audio, game, and any similar software. (Rahmah, 2015)

Along with the development of human communication that was supported by the sophistication of technology, a new perspective has emerged that is known as Digital Literacy. The trend has marked the rise of the network society as the result of the globalization era. Three aspects could identify this era; speed, virtuality, and network. (Rivoltella, 2008)

Thus, the digital literacy and mastering technology have been significant to be adapted by educational institutions. Nowadays, it has been applied in education sectors through the school's information technology curriculum to develop the student's technical skill and open portal for general knowledge. Bantugan (2014) cited by (Rahmah, 2015) concluded whenever students have to be an independent learner in an environment formed by ICT, they must adapt to the development of ICT's complexity.

In accordance to (Eshet-alkalai, 2004), the new conceptual framework of digital literacy encompasses five types of literacy; (1) Photo-visual literacy, (2) reproduction literacy, (3) information literacy, (4) branching literacy, (5) socio-emotional literacy.

Digital literacy and language independent learning

The urgency of digital literacy is not just helping learners to read, write, or complete other tasks. Moreover, according to Bundy, it can encourage one's independent learning ability, and prepare their lifelong learning awareness. (Bundy, 2004)

Furthermore, it can strengthen individual identity in cyberspace, as an independent and democratic citizen. (Vélez et al., 2017).

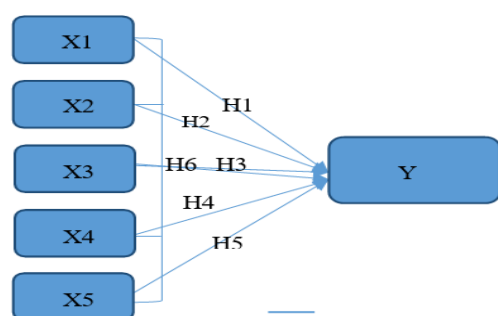
The idea of personal independence, freedom, autonomy, in the learning experience is considered to have an increasingly important role in the educational process. The number of arguments has emerged supporting the idea, especially in the context of language learning.

In language learning context, the idea is popularly known as the concept of Independent Language Learning. According to (White, 2008), this concept has some principles; supporting and expanding the choice of learners, focusing on students' needs and not merely meeting the interests of teachers or educational institutions.

Independent Language Learning reflects a shift towards the Students Centered Learning (SCL) approach. This concept also views students as an individual who has own needs and rights that can develop and train responsibilities with their learning. (White, 2008)

In the context of Independent Language Learning, the intrinsic motivation of learners grows through social interaction. Not only within the precise scope of the educational context but also the more comprehensive social environment of learners. While many experts argue for the importance of social interaction in information technology-based language learning, there was so little research that tested such significance, and few learners who realized and applied it. (Morrison, 2011) Thus, digital literacy is one thing that can be used as part of the process of social interaction, especially in the scope of communication-based on information technology. The explanation of the above references confirms that there is significant influence between digital literacy on the quality of learning ability independently.

The desirable model of the research is reflected in the following figure



## Research method

The purpose of this research is to analyze the causality relation between the levels of digital literacy to the level of students' ability in independent language learning. This research used a quantitative approach. The primary data collection was done by giving a set of questions through questionnaires to the respondents. So that, the research got a picture of students' digital literacy and independent language learning ability.

The population, at the same time, the respondents in this research are the students at the second semester who has taken English class at Faculty of Economics, Universitas Islam Indonesia. The target sample in this research is 180 students. However, the number of respondents who responded and answered correctly totaled up to 148 respondents. The questionnaires have been distributed with a purposive random sampling technique. Also, the writer has conducted literature review extensively by examining concepts that are strictly related to digital literacy and independent language learning. To facilitate the observation, respondents were limited to six classes where the researcher has been teaching.

Meanwhile, correlation analysis and regression analysis was used in this study. Correlation analysis was used to examine the relationship between two variables, to know the degree of relationship between variable X1 (Photo-visual Literacy), X2(Reproduction Literacy), X3 (Branching Literacy), X4 (Information Literacy), X5 (Socio-emotional Literacy), and variable Y (Independent Language Learning). This research used Pearson product moment correlation technique by SPSS. Meanwhile, regression analysis is intended to determine the form of the

relationship variable Y to the value of variable X.

## Result and discussion

The simultaneous influence of all independent variables on the dependent variable.

Table 1. ANOVA<sup>a</sup>

Model	df	Mean Square	F	Sig.
Regression	5	232,.832	28.424	.000 <sup>b</sup>
Residual	142	8.191		
Total	147			

The ANOVA value of 0,000 or < 0,05, as cut off significant values, shows that all independent variables;Photo-visual Literacy (X1), Reproduction Literacy (X2),Branching Literacy (X3), Information Literacy (X4), and Socio-emotional Literacy (X5) simultaneously impacted to Independent Language Learning (Y) as dependent variable. This means the more those simultaneous variables values, the more the Independent Language Learning values.

Table 2. Regression Analysis of Each Variables X to Y

Model	Coefficient of Regression	Std. Error	t <sub>count</sub>	Sig.
(X1)	0.308	0.051	6.021	0.000
(X2)	0.438	0.046	9.479	0.000
(X3)	0.453	0.049	9.308	0.000
(X4)	0.565	0.062	9.162	0.000
(X5)	0.465	0.052	8.888	0.000

### *The influence of photo-visual literacy on independent language learning.*

Based on the result of the analysis, Photo-Visual Literacy positively affected the level of Independent Language Learning. Table 2 shows that the Coefficient of Regression value of 0,308 means that each 1% addition of Photo-Visual Literacy level (X1) then the level of Independent

Language Learning (Y) will increase by 0,308. Therefore, the value of the regression coefficient is positive (+).

Whereas, the significance value of 0,000 is lower than  $<0,05$ , it can be said that Photo-Visual Literacy has a positive effect on the level of Independent Language Learning. This positive value means that Photo-Visual Literacy and Independent Language Learning has the same direction relationship.

#### ***The influence of reproduction literacy on independent language learning.***

From the obtained significant value of 0,000 or lower than  $<0,05$ , Reproduction Literacy has a positive effect on the level of Independent Language Learning with 0,438 of regression coefficient values. It means that each 1% addition in Reproduction Literacy (X2) so the level of Independent Language Learning (Y) will increase up to 0,438. Within the positive effect, Reproduction Literacy and Independent Language Learning have the same direction relationship. So, the higher the level of student's Reproduction Literacy the higher the student's Independent Language Learning.

#### ***The influence of branching literacy independent language learning.***

The regression analysis values, significance value of 0,000 or  $<0,05$ , showed that Branching Literacy has a significant impact on the level of Independent Language Learning. The coefficient regression value of 0,453 means that each 1% addition in Branching Literacy (X3), at the same time, the level of Independent Language Learning will increase up to 0,453. It also explains that between Branching Literacy and Independent Language Learning have the same direction relationship.

#### ***The influence of information literacy on independent language learning.***

Meanwhile, the values of Significance Value of 0,000 lower than  $<0,05$  shows that Information Literacy has a significant impact on the level of Independent Language Learning. In another hand, the value of Coefficient Regression of 0,565 means that every 1% enhancement of

Information Literacy (X4) will cause 0,565 increase of Independent Language Learning (Y). Thus, Information Literacy and Independent Language Learning have a strong one-way relationship.

#### ***The influence of socio-emotional literacy on independent language learning.***

However, the regression result obtained from this relationship shows that Socio-Emotional Literacy has a significant effect on the level of Independent Language Learning with a significant value of 0,000 or lower than  $<0,05$ . In another hand, the Coefficient Regression value of 0,465 means that every 1% increase in Socio-Emotional Literacy (X5) will effect to the increase of Independent Language Learning up to 0,465. This also confirms that Socio-Emotional Literacy and Independent Language Learning has a one-way relationship. The higher the level of Socio-Emotional Literacy the higher the level of Independent Language Learning.

#### ***Coefficient of determination test ( $R^2$ )***

$R^2$  on the Simultanuou Independent Variables to Dependent Variable

Table 3. Simultanuou  $R^2$  Variable Test

Model	R	R Square	Adjusted R Square	Std. error of the Estimate
1	.707 <sup>a</sup>	.500	.483	2.862

Table 3 shows the number of  $R^2$  (R Square) = 0,500. Thus, it can be determined through the formula of  $=0,500 \times 100\% = 50\%$ . So it can be said that all independent variables, Photo-visual Literacy (X1), Reproduction Literacy (X2), Branching Literacy (X3), Information Literacy (X4), and Socio-emotional Literacy (X5) could simultaneously influence the dependent variable up to the level of Independent Language Learning up to 50%. The rest,  $100\% - 50\% = 50\%$  is determined by other variables that were not studied in this research.

Table. 4 R2 Test of Variables

Predictor s	R	R Squar e	Adjusted R Square	Std. Error of the Estimate
(X1)	0.446	.199	.193	3.574
(X2)	0.617	.381	.377	3.141
(X3)	0.610	.372	.368	3.163
(X4)	0.604	.365	.361	3.181
(X5)	0.593	.351	.347	3.216

The table shows the number of R Square for each Variable as follow; Photo-Visual Literacy (X1)=0,199, Reproduction Literacy (X2)=0,381, Branching Literacy (X3)=0,372, Information Literacy (X4)=0,365, and Socio-emotional Literacy (X5)=0,351. Thus, the coefficient of determination ( $R^2$ ) percentage or the influence of each variable could be determined by the following formula :

- $(X1) 0,199 \times 100\% = 19,9\%$ ,
- $(X2) 0,381 \times 100\% = 38,1\%$ ,
- $(X3) 0,372 \times 100\% = 37,2\%$ ,
- $(X4) 0,365 \times 100\% = 36,4\%$ ,
- $(X5) 0,351 \times 100\% = 35,1\%$ .

This also means the rests are influenced by another variable those are not studied in this paper.

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