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Is Self-Regulation Able to Mediate the Effect of Self-Effort on E-Learner Success in the Islamic State University?

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Abstract: This study aim to seek the relationship between self-effort and e-learner success, either directly or through self-regulation. This type of research is quantitative. The research method used is an exploratory survey. Primary data were obtained from questionnaires filled out by 923 Social Science Education students at all State Islamic Universities in Indonesia. 11 State Islamic Universities with a Social Science Education program participated in this research. The direct test uses Ordinary Least Square (OLS), while the indirect effect is tested using the Sobel test. The results of this study can prove that self-effort has a direct and indirect positive influence on e-learner success through self-regulation. Students with high self-effort will be able to improve their self-regulation, impacting their e-learning success. This evidence shows that e-learning requires students' independence to succeed academically. This research provides a theoretical contribution to the development of e-learning theory. Students in online learning success need self-effort and self-regulation because, in online learning, students are required to be more active than in direct learning in class. The author recommends further research to expand other variables that affect the success of e-learning with different models and theories, such as expectation confirmatory theory, technology acceptance model, intention to continue using LMS, course and information quality.

INTRODUCTION

The outbreak of the 2019 Coronavirus (Covid-19) has changed all aspects of life, including education (Dhawan, 2020; Hussein et al., 2021; Spoel et al., 2020). It has forced the learning process to be held online in whole levels of education, no exception in Indonesia's Social Science Education Program (Kemdikbud, 2020; Khalil et al., 2020; Muslimin & Harintama, 2020). This is in accordance with a regulation issued by the Minister of Education and Culture as an effort to prevent the spreading of Covid-19, so that the implementation of education must be carried out with a distance learning strategy (online) (Maimuna, 2021; Mishra et al., 2020; Putra et al., 2020; Suharini et al., 2020). It also means that students must follow the learning activity from home. In fact, online learning has started since early 2020 when the Covid 19 pandemic occurred in Indonesia. Even, particularly in the university level, online learning persistenly continue until early 2022 in line with the development of Covid-19 cases which have not decreased. This decision refers to the Letter of the Ministry of Education and Culture No. 4

of 2020 regarding the implementation of education in the Covid-19 emergency.

The demands of such online learning urge the universities to provide an online learning system properly, in which it commonly refers toLearning Management System (LMS) as a standart (Andrade, 2016; Syed et al., 2021). Institutions use LMS to complement traditional face-to-face delivery, by which faculty members are able to develop shared digital learning materials over the internet (Azman et al., 2020). In this sense, the LMS is used as an electronic repository of learning materials (Mtebe, 2015). LMS is indispensable in ensuring the quality of the implementation of online learning (Andrade et al., 2019; Karam et al., 2021).

Razaq & Umiarso (2019) stated that shaping students' personalities is one of the education and teaching goals. Thus, the regulations are necessary both in the economic, political and legal fields which can support the success of education in a country. In the Islamic perspective, the concept of education based on the human nature (fitrah) plays a key role to fulfill human's functions, roles and existences (Nurhadi, 2017). According to some Islamic thinkers, education is the self-fulfillment or the fulfillment of human status in front of God. On the other word, Islamic education serves as a mechanism to maintain, utilize, and develop human basic nature (fitrah) (Idris et al., 2018).

Previous research found four issues which emerged as the most predictive in the online learner success, namely time, technology, initiative, and competence (Bingab et al., 2018). It examines the practical and deliberate application as a means to facilitate students' successful completion of online courses (Mandernach et al., 2006). Student's initiatives can be realized through the existence of self-effort and self-regulation; Müller & Seufert, 2018).

Self-effort is interpreted as a motive to learn and perform, which starts from one-self and is conducted consistently. It also has to be propped by personal beliefs, abilities, and behaviors in the dynamic interactions in social and physical environments (Hertel & Karlen, 2021). Self-regulation is needed in facing the challenges of online learning (Hanafi et al., 2021). Self-regulation allows students to recognize and actively regulate their learning (Rostaminezhad et al., 2013). Students can use various techniques such as setting goals and plans, reflecting on learning progress, using different strategies, and monitoring previous offline learnings (Zimmerman, 2013).

This empirical research analyzes the implementation of online learning at the State Islamic Universities, specifically in the Social Science Education Program. Many aspects, including the self-effort, actually can influence e-learner success. Online learning requires students to be more independent in learning process. As such, the self-effort is an essential factor in achieving e-learner success. The results of previous studies show that the self-effort can bring the positive influence in achieving e-learner success (Eom, 2012; Safsouf et al., 2020). This result indicates that the higher the student's effort, the more successful their online learning will be. E-learning systems more place responsibility on learners than traditional face-to-face learning systems do. The self-regulated learning requires the changing roles of students from passive to active learners. Students are more productive in class and spend less time than in the traditional classroom training. However, in contrast, there are also research results that show a different outcome, in which it has the negative impacts (Koivuniemi et al., 2021), and some even cannot prove the influence of it (Koivuniemi et al., 2021). The gap from such research results makes possible to this study mediate the relationship between two variables.

The mediating variable included in this study is the self-regulation variable.

Someone with high self-effort in learning will form better self-regulation so that it is able to increase online learning success. In the SRL model, there are several aspects of learning that are interrelated: cognitive, motivational, and emotional (Zimmerman, 2013; Panadero, 2017). Students' action and knowledge are part of the cognitive learning process. The process occurs when generating the problem-solving steps by performing cognitive strategies or different tasks. As the example, it includes the organization, practice, and elaboration to learn new knowledge (Cervin-Ellqvist et al., 2021). In this respect, the students' learning performance is much influenced by the students' skills.

Meanwhile, other research states that SRL is a systematic process for students to regulate their feelings, actions, and thoughts in order to reach their learning goals (Koivuniemi et al., 2021). There are several stages in the SRL cycle. The first is the phase of thinking ahead. The second is a concern on understanding the learning task. The third is goal setting. Finally, the last is making a strategic work plan (Koivuniemi et al., 2021).

This study examines the direct effect of self-effort on an e-learner success and indirectly through self-regulation. This study provides a theoretical contribution, particularly to the SRL theory applied to State Islamic Universities in Indonesia. This research is expected to support the SRL theory, which states that self-effort can influence self-regulation, resulting in e-learner success. The results of this study can practically be used for State Islamic Universities, lecturers, and also students regarding the factors that influence e-learner success. Students as learners need to increase their self-effort and self-regulation to achieve e-learner success.

The SRL theory as presented by Zimmerman is defined as a dynamic learning process based on students. Students themselves do the planning, monitoring, and evaluation of their own learning. The main point is that students proactively choose the right strategy in their learning activities (Zimmerman, 2013). The independent learning model has three phases, comprising of preparation, performance and evaluation (Panadero, 2017). The first, the preparation phase begins with task analysis, planning, goal formulation, and goal achievement. The second, the performance phase implements actual task performance, monitoring and controlling learning progress. The last, the evaluation phase includes reflection, adjustment, and adaptation activities.

Previous research has proven that SRL can predict the success of students' online learning (Andrade, 2014). Social media has also been proven to support students' independent learning. Social media as an educational tool can control students' independent learning (Al-Azawei, 2019).

A systematic literature review proves that human factors such as self-efficacy, gender, self-ability, level of achievement, and knowledge, play an essential role in the success of online learning (Panadero, 2017). In addition, other factors also affect the learner's success, such as the SRL strategy (planning, more time to see the material) and the SRL support system (feedback, request, SRL system).

Hypothesis 1: Self-effort has a positive effect on e-learner success.

Students can achieve self-regulation by firstly seeing their shortcomings, improving them, and exerting their self-effort. Self-effort is a performance and learning motive that starts from oneself (Zimmerman, 2013). Thus, self-effort is a person's ability to complete tasks (Al-Adwan et al., 2021).

Web-based online learning allows students to manage their time and place of study (Iatrellis et al., 2020). LMS provides high flexibility for students in

their learning process (Veletsianos et al., 2021). However, LMS also demands development in managing their work and personal abilities to complete the online learning program they take (Costello & McNaughton, 2018). Self-efficacy will improve students' self-regulation in online learning (Albelbisi et al., 2021).

Hypothesis 2: Self-effort has a positive effect on self-regulation

Online learning provides flexibility and convenience for students. However, this system requires each participant's commitment and discipline (Lin & Wang, 2012). The main factors for successful learners are the satisfaction that students feel enjoyable with the LMS, then the continuity of using the LMS, and the direct involvement of students in online learning (Yakubu & Dasuki, 2018; Al-azawei, 2019).

Hypothesis 3: Self-regulation has a positive effect on e-learner success

Self-reflection includes self-reaction (self-comparison, task mastery) and self-assessment (performance effectiveness, self-evaluation, learning performance, and social attribution) (Davis et al., 2016). Sometimes students make social comparisons with the learning outcomes of classmates, in which it is certainly less profitable than comparisons with themselves (Cheng & Xie, 2021). Previous research has proven that self-effort can influence self-regulation, which in turn has a positive impact on the achievement of successful learners (Safsouf et al., 2020).

Hypothesis 4: Self-effort positively affects e-learner success through self-regulation.

METHOD

This type of research is quantitative. The research method used is an exploratory survey. The exploratory survey was selectively chosen because not many previous studies used such model in their study. The reason is that this study requires an in-depth discussion of the influence of self-regulation and self-effort on the success of online learners. In addition, the population size that is too large is very possible to use survey methods in data collection. This method determines the direct influence of independent business on the success of e-learning and indirectly through self-regulation.

Research data were taken at the end of 2021 when most students in Indonesia were studying online. This study's population was all Social Science students at a State Islamic University in Indonesia. Questionnaires were distributed to 11 State Islamic Universities with a major of Social Science Education throughout Indonesia. There were 923 questionnaires returned and then used as samples in this study. The distribution of questionnaires can be described in Table 1.

Table 1. Respondent

No	University's Name	University's Status	Number of Respondents
1	UIN Tulungagung	Public service agency (BLU)	178
2	UIN Jember	Public service agency (BLU)	196
3	UIN Riau	Public service agency (BLU)	52
4	UIN Medan	Public service agency (BLU)	15
5	IAIN Cirebon	Ordinary work unit	129
6	IAIN Ponorogo	Ordinary work unit	111
7	IAIN Kudus	Ordinary work unit	46
8	IAIN Metro	Ordinary work unit	133
9	IAIN Pare-Pare	Ordinary work unit	12
10	IAIN Madura	Ordinary work unit	33
11	IAIN Palu	Ordinary work unit	18

The dependent variable in this study is e-learner success, the independent variable is self-effort, and the mediating variable is self-regulation. In addition to these three variables, there are five control variables, namely gender, age, semester, University status, and the University's name. The measurement of variables can be described in Table 2.

Table 2. Variable Measurement

Code	Variable	Measurement	Scale
Y	E-learner success	Questioner (Safsouf et al., 2020)	Ratio
X	Self-effort	Questioner (Safsouf et al., 2020)	Ratio
M	Self-regulation	Questioner (Safsouf et al., 2020)	Ratio
C1	Gender	1= if female, 0= if not	Nominal
C2	Age	Number of age	Ratio
C3	Semester	student semester level	Ratio
C4	University's Status	1 = if BLU, 0 = if not	Nominal
C5	University's Name	1= UIN Tulungagung, 2= UIN jember, 3= UIN Riau, 4= UIN Medan, 5= IAIN Cirebon, 6= IAIN Ponorogo, 7= IAIN Kudus, 8= IAIN Metro, 9= IAIN Pare-pare, 10= IAIN Madura, 11= IAIN Palu	Ordinal

Before distributing the questionnaires, the validity and reliability were firstly tested. The validity test is tested by looking at the Pearson correlation value, while the validity test can be seen by looking at the Cronbach alpha value. The test was conducted to determine whether the questionnaire questions were valid and reliable. Decision-making on the instrument's validity was done by comparing the value of r-count with r-table at a significance level of 5%. If r-count > r-table, the instrument is declared valid, but if r-count < r-table, the instrument is invalid (Gujarati & Porter, 2009). The Minitab output results of the validity test using the product-moment correlation method are to see the correlation between each variable and the total score of all variables. Furthermore, the instrument's reliability was also tested by using Cronbach's alpha method. Cronbach's alpha value from 0 to 1 has five reliability grades, from unreliable to very reliable (Gujarati & Porter, 2009). The test was conducted on 48 students who were not respondents in this study. The results of the validity test show the following result.

Table 3. Validity and Reliability Test

Variable	Pearson Correlation	Cronbach Alfa	Result
E-learner success	.687***	0.789	Valid & Reliable
Self-effort	.529***	0.251	Valid & Somewhat reliable
Self-regulation	.651***	0.695	Valid & Reliable

Note: *** significant on the level 1%
Source: Minitab's output

Table 3 shows that the three variables are significant at the 1 % level, which means that each of the three questions from such three variables above is valid. In addition, the above results also prove that all questions are also reliable.

Based on Figure 1, the dependent variable is e-learner success; the independent variable is self-effort; the intervening variable is self-regulation, while the control variable consists of gender, age, semester, university status, and name of university. The direct test on this study uses Ordinary Least Square (OLS), while the indirect effect of the data was tested by using the Sobel test.

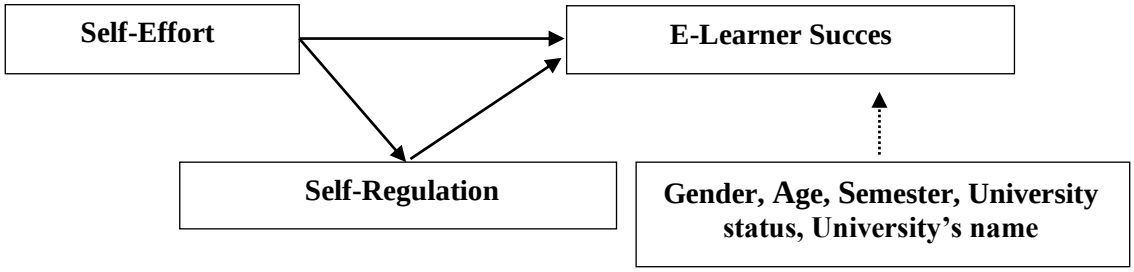

Figure 1. Research Model (Source: Zimmerman, 2013 modified)

RESULT AND DISCUSSION

In Table 4 below, the distribution of the data can be seen from the results of the following descriptive statistical outputs. Based on Table 4, it can be explained that demographic data show that 72.81 % of respondents are women, with an average age of 19 years old, an average of sitting in semester 3.48 % of them studying on the campuses with BLU status, and coming from 11 State Islamic University in Indonesia. The value of E-learner success is a minimum of 1 and a maximum of 4, with an average value of 2.84. This result shows that there are still students who have not been successful in their online learning, although the average score is quite good, namely 2.84 or close to 3, which means success in learning. In contrast, the value of self-effort has a higher average value of 3.05, almost the same as the average value of self-regulation of 3.00. These data indicate that students have made high self-effort balanced with high self-regulation.

Table 4. Statistic Descriptive

No	Variable	N	Mean	Std Dev	Min	Max
1	E-learner success		2.8483	0.7402	1	4
2	Self-effort		3.0538	0.6782	1	4
3	Self-regulation		3.0011	0.7373	1	4
4	Gender	923	0.7281	0.4452	0	1
5	Age		19.432	1.451	3	29
6	Semester		3.0585	2.1345	1	9
7	University's status		0.4800	0.4999	0	1
8	University's name		4.5049	2.9528	1	11

Source: Minitab's output

Self-Effort on E-Learner Success

Based on the running data performed on the Minitab software, the following research equations were obtained:

$$Y = 0{,}956 + 0{,}6308\ X + 0{,}0765\ C1 - 0{,}0127\ C2 + 0{,}0231\ C3 + 0{,}1658\ C4 + 0{,}0017\ C5$$

Table 5 shows the results of the direct effect test between self-effort on e-learner success and control variables. Based on Table 5, the P-value indicates that self-effort positively affects e-learner success. Meanwhile, of the five proposed control variables, three variables are proven to influence e-learner success, namely gender, semester, and university status. This result shows that the higher the semester students provide the level of thinking maturity, the more successful online learning is. This evidence proves that the status of BLU can positively impact the success of online learning. Female students have more effort than male ones into influencing online learning success. However, this is not the case

with the age and name of the university, which has proven not to affect the achievement of students' online learning success.

Table 5. Test the Direct Effect of Self-Effort on E-Learner Success

Term	Coef	SE Coef	P-Value	Result
Self-effort	0.6308	0.0293	0.000***	Accepted
Gender	0.0765	0.0451	0.090*	Accepted
Age	-0.0127	0.0190	0.503	Rejected
Semester	0.0231	0.0135	0.086*	Accepted
University's Status	0.1658	0.0821	0.044**	Accepted
University's Name	0.0017	0.0144	0.906	Rejected

This fact shows that the number of age and the university they study in do not significantly impact e-learner success. Therefore, the feasibility of the direct influence model of self-effort on e-learner success can be seen in Table 6.

Table 6. Model Summary

S	R-sq	R-sq(adj)	R-sq(pred)
0.593785	36.07%	35.65%	34.99%

Source: Minitab's output

Table 6 shows that the research model with self-effort as an independent variable with e-learner success, as the dependent variable, and added with five control variables, namely gender, age, semester, university status, and university name, has a relatively high R-square value of 36.07 %. It means that these variables influence 36.07 % of e-learner success, while other variables influence the rest.

Students who set excellence goals proactively, monitor their learning purposefully, use strategies effectively, and respond to personal feedback adaptively, achieve mastery more quickly and are more motivated to sustain their learning efforts (Zimmerman, 2013). When the learning strategy (time and environment) is successful, there will be a satisfaction for students related to their learning. On the other word, e-learning success has been achieved. This fact points out the importance of self-effort, especially in taking strategies to manage time and learning environments independently for students (Choi, 2016).

Self-Effort on Self-Regulation

Research equations regarding the positive influence of self-effort on self-regulation can be presented below:

$$M = 0{,}6685 + 0{,}7638\ X$$

Furthermore, the results of hypothesis testing from the above equation can be presented in Table 7.

Table 7. Hypothesis Testing the Effect of Self-Effort on Self-Regulation

Term	Coef	SE Coef	P-Value	Result
Self-effort	0.7638	0.0255	0.000	Accepted

Source: Minitab's output

Table 7 above shows that self-effort has a significant positive effect on student self-regulation. The higher the effort is made by each student, the higher their self-regulation is. Table 8 presents the feasibility test of the model.

Table 8. Model Summary

S	R-sq	R-sq(adj)	R-sq(pred)
0.524934	49.37%	49.31%	49.13%

Source: Minitab's output

Based on Table 8 above, the R-square value of the relationship between self-effort and self-regulation shows a reasonably high value, 49.37 %, which means that self-regulation is influenced by almost half of their efforts. This result indicates that other variables affect self-regulation, in addition to self-effort. Several aspects of SRL learning include cognitive, metacognitive, affective, behavioral, emotional and motivational. The SRL learning model is influenced by

many variables studied holistically and comprehensively (Panadero, 2017). Some factors, including self-effort, influence self-regulation. Then, self-regulation itself is also influenced by the quality of the learning system and service (Safsouf et al., 2020; Albelbisi et al., 2021).

Students need to set environmental and time strategies. A conducive environment and appropriate study time will improve the quality of learning. Self-ability in managing learning with their efforts is necessary in independent learning. The online learning environment is strongly influenced by students' self-regulation (Cheng & Xie, 2021).

Self-Regulation on the e-Learner Success

The following research equation examines the direct effect of self-regulation on e-learner success.

$$Y = 0{,}660 + 0{,}6819\ M + 0{,}0134\ C1 + 0{,}0005\ C2 + 0{,}0164\ C3 + 0{,}1263\ C4 + 0{,}0026\ C5$$

Based on the above equation, the results of hypothesis testing are obtained as following.

Table 9. Hypothesis Testing the Effect of Self-Regulation on E-Learner Success

Term	Coef	SE Coef	T-Value	P-Value	Result
Self-Regulation	0,6819	0,0246	27,74	0,000	Accepted
Gender	0,0134	0,0410	0,33	0,744	Rejected
Age	0,0005	0,0172	0,03	0,976	Rejected
Semester	0,0164	0,0122	1,35	0,178	Rejected
University's Status	0,1263	0,0742	1,70	0,089	Accepted
University's Name	0,0026	0,0130	0,20	0,844	Rejected

Source: Minitab's output

Table 9 shows that self-regulation has a direct positive effect on e-learner success. The higher the self-regulation is, the more successful students are in learning online. In addition, one control variable is proven to influence the success on online learning, namely the status of Higher Education (PT). PT status is significant, with a level of 10 %. It shows that university status, namely BLU status, can positively impact e-learner success. It happens because universities with BLU status have more flexibility in managing their finances to encourage the creation of better university governance. However, this is not the cases with gender, age, semester, and the university's name which proves not to affect the e-learner success. In addition, the feasibility test of the model shows the following results.

Table 10. Model Summary

S	R-sq	R-sq(adj)	R-sq(pred)
0.537080	47.70%	47.36%	46.71%

Source: Minitab's output

Based on Table 10, the model of self-regulation and five control variables on student online learning success shows a reasonably high R square value of 47.70 %. Almost half of student learning success is influenced by self-regulation and PT status. The SRL assessment instrument measures students' cognition and motivation, and then SRL can support their efforts to increase their online learning success (Koivuniemi et al., 2021). SRL implicit theory is more strongly related to student achievement goals, learning strategies, and metacognitive knowledge than the implicit intelligence theory (Zimmerman, 2013). Moreover, the implicit theory of SRL is mainly unrelated to students' demographics and personality traits (Hertel & Karlen, 2021).

Self-regulation plays an essential role in successful online learning. Previous research that examined independent learning in the implementation of online learning found that learning strategies were effective in

pursuing student achievement (Lin & Wang, 2012). However, this research is not sufficient to provide evidences of successful learning in online learning (Choi, 2016). The results of this study can provide new empirical evidences that self-regulation can increase e-learner success. This result is in line with previous research, which found a positive effect of self-regulation on e-learner success (Safsouf et al., 2019).

Self-regulation is the knowledge, awareness, and cognitive control which consists of planning, monitoring, and regulating learning activities. Self-regulation in online learning is more necessary than the traditional one. The online environment requires students to be active and independent to achieve learning success (Kwiek, 2015). SRL theory is oriented toward motivation and learning strategies used by students (Zimmerman, 2013). Self-regulation is highly correlated with learning achievement in online learning and e-learner success (Safsouf et al., 2020).

Indirect Effect of Self-Effort on e-Learner Success Through Self-Regulation

Finally, a test of the indirect effect of the self-effort variable on e-learner success through self-regulation was carried out. The test was done by using the online Sobel test on the website: http://quantpsy.org/sobel/sobel.htm. Data on coefficient values and SE coefficients are needed in testing the indirect effect, obtained from the results of direct hypothesis testing that have been carried out previously (Hair et al., 2012)

Table 11. Coefisien and SE Coefisien

Term	Coef	SE Coef
X =>M	0.7638	0.0255
M =>Y	0.6819	0.0246

Source: Minitab's output (Table 7 and 9)

Table 11 is obtained from the coefficient and SE coefficient values in Table 7 and 9, which are then used to perform the Sobel test. The coefficient value, which shows the number > 0.67, indicates that the proposed independent variable, in this case, is self-effort and the mediating variable, self-regulation, has a strong positive influence on the achievement of e-learner success. Furthermore, the values in Table 11 are entered in the online Sobel test, resulting in the following output values:

Table 12. Sobel Test

Term	t-Statistic	Std Error	P-Value	Hypo-theses
X=>M=>Y	20.3445	0.0256	0.00	Accepted

Source: Sobel test output

Table 12 proves that self-regulation can be an intervening variable in the relationship between self-effort and student online learning success. It shows that self-effort can increase self-regulation, further increasing e-learner success. Self-regulation, intention to learn, and to use LMS can support student satisfaction, which can increase E-learner success (Radwan, 2014; Safsouf et al., 2020). In line with these results, other studies have proven that the factors that support student performance are student satisfaction, perceived benefits, and system use (Al-Adwan et al., 2021).

The traditional cognitive psychological theory states that learning strategies depend on self-regulation processes, but there are other ways of looking at social process much influenced by the environment and behavior (Zimmerman, 2013). Learning strategies are defined as processes and actions which are directed in order to be able to acquire skills and information in regarding of the goals, instruments, and agency of learners to improve their self-regulation (Choi, 2016).

Increasing self-regulation to students will encourage a high sense of responsibility in learning. In this study, students were able to self-regulate during online learning. They are responsible for completing class assignments. Based on

this research, one strategy which can be offered is to increase students' self-regulation, which is also supported in traditional cognitive psychological theory. These results show that even modern learning still requires traditional theory.

The use of e-learning systems in modern learning is a rational effort to accommodate the demands of 21st century education. One of the challenges is how to utilize the technology of information and communication in learning process more effectively. Through high self-regulation, students are able to master skills needed in the 21st century, those of which are creative, communicative, collaborative and critical thinking.

In modern learning, the essential topics are required to do futher research. For instance, the computer is a medium for self-regulation. The role of computer in learning process is increasing over time. In one hand, this trend trigers a reactive self-regulation, but, on the other hand, it also offers an opportunity for a proactive self-regulation. The next is the increased self-regulation in traditional instructional contexts. Teachers can encourage students to improve their self-regulation when homework is given in online learning. The encouragement can be in the form of students' sense of responsibility to complete their tasks in online learning, so that it can stimulate high self-regulation. To support it, teachers can provide rewards for students who submit assignments on time and give penalties for those who are late. Then, as the last consideration, it is important to integrate between self-regulation and process performance. Research on the difference between self-regulation in the learning and performance processes needs to be investigated further (Zimmerman, 2013).

The results of this study would like to answer the above-mentioned issues by combining self-effort and self-regulation in achieving e-learner success. Self-effort is required in online learning, within which students are much insisted to more independence. Self-effort can encourage self-regulation which ultimately improve students' performance in learning process.

CONCLUSION

The results of this study can prove that self-effort has a direct and indirect positive influence on e-learner success through self-regulation. Students with high self-effort are able to improve their self-regulation which impacts on their e-learning success. This evidence shows e-learning requires students' independence to succeed academically.

This research provides a theoretical contribution to the development of e-learning theory. Not only are the sound e-learning system and reliable teachers needed, but the self-effort and self-regulation of each student are also very much required. Based on the results of this study, State Islamic University throughout Indonesia needs to provide additional classes and significantly increase student motivation to have high self-effort and self-regulation in their online learning. For example, it can be designed by adding material about self-effort and self-regulation in educational psychology courses. Besides that, special additional classes can also be held outside of learning time, such as basic computer training, e-learning training, and web mastery to support online learning. The success of student learning at State Islamic University plays a significant role to improve the quality of graduates, in which it can bring the positive reputation for the university where they study. Thus, further research presumably can expand other variables which affect e-learner success with various models and theories.

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