

THE INFLUENCE OF SELF INNOVATIVENESS AND SELF EFFICACY ON E-LEARNING IMPLEMENTATION EFFECTIVENESS

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Abstract - *E-learning has become an increasingly popular method in higher education, especially amid the COVID-19 pandemic. To optimize the success of e-learning, individual psychological factors such as self-innovativeness and self-efficacy may play an important role. The purpose of this study is to investigate the influence of self-innovativeness and self-efficacy on the effectiveness of e-learning among lecturers in Surabaya City. This study uses regression analysis method with 30 respondents who are lecturers from several universities in Surabaya City. Data were collected through questionnaires that measured the level of self-innovativeness, self-efficacy, and success of e-learning. The data were then analyzed using multiple linear regression techniques to test the relationship between self-innovativeness, self-efficacy, and e-learning. The results of this study show that self-innovativeness and self-efficacy have a significant effect on the effectiveness of e-learning among lecturers in Surabaya City. Self-innovativeness has a strong positive relationship with the effectiveness of e-learning. Lecturers who have a high level of self-innovativeness tend to experience better success in e-learning. Similarly, self-efficacy also has a significant positive relationship with e-learning, suggesting that lecturers who have high confidence in their ability to face the challenges of e-learning tend to achieve better results. The results of this study have important implications in the development of e-learning among lecturers. In improving the success of e-learning, it is important to encourage and facilitate self-innovativeness and improve lecturers' self-efficacy. Efforts to increase self-innovativeness can be done through training and support that encourages creative thinking and innovative solutions in e-learning. Meanwhile, the development of self-efficacy can be done through self-development programs that provide support and positive feedback on lecturers' ability to face the challenges of e-learning.*

Keywords: *self-innovativeness, self-efficacy, e-learning, lecturers, students.*

INTRODUCTION

Covid-19 since January 2020 that occurred in several countries has impacted the education sector and learning activities. It has also disrupted learning activities with school closures nationwide for most countries (Reimers et al., 2020). It has led to a temporary shift in the form of learning process from traditional face-to-face to e-learning as a response to the pandemic even without adequate preparation and experience. E-learning or online learning is the best solution in order to prevent the halt of educational development in all countries. Regardless, technological advancement must be followed by the ability to use and empower it effectively (Jamaluddin et al., 2013; Mendrika et al., 2021). Technology-related competencies are increasingly relevant to various professions in all industries (Rusman et al., 2007; Mahyanalia et al., 2017).

E-learning is a learning process where individuals have the opportunity to learn independently at the same time from different places by using various methods and techniques in learning activities. Every country has adopted e-learning as a response to the global disruption caused by the pandemic, as evident from the analysis of social media posts, online classes, and interviews (Al Lily et al., 2020). This widespread adoption of e-learning demonstrates the significant impact of the pandemic on traditional education models and the way students are taught.

Challenges have arisen in the practice of e-learning, requiring teachers to be more innovative and more responsible in their involvement in the practice of e-learning (Vidergor, 2023). The development of innovativeness in teaching is an ongoing process that requires continuous practice. Teachers who embrace innovation in their teaching practices enhance the learning experience by making it more interesting and enjoyable for their students. Research conducted by Ucus and Acar (2018) revealed a positive correlation between teachers' level of innovativeness and their adoption of a constructivist teaching approach. This correlation was mediated by the display of creative classroom behavior. Conversely, a negative correlation was observed between innovativeness and the utilization of traditional teaching methods. In the context of e-learning, teachers have taken on multiple roles that include facilitators, mentors, educators, instructional designers, online learning coordinators, and technology integrators (Ferdig et al., 2009). This evolution in the role of teachers reflects the dynamic nature of e-learning and the need for educators to adapt their practices to effectively engage with digital learning environments. This highlights the need for teachers to adapt their practices and acquire the necessary skills to effectively navigate the digital learning environment.

Furthermore, teachers are required to possess self-efficacy. Djazilan et al. (2022) found a close relationship between self-efficacy in teachers and their actual teaching practices, investment in teaching, and the goals they set for themselves. Teachers with strong self-efficacy tend to exhibit openness, responsiveness, and a willingness to experiment, thereby fostering a positive learning environment for their students, even in the context of e-learning (Miller et al., 2017; Tschannen et al., 2001). The presence of self-efficacy, combined with a sense of responsibility, supports teachers in attaining their teaching goals. Regarding e-learning that incorporates technology, it is crucial for educators to possess self-efficacy in effectively applying technology (Yesilyurt et al., 2016). However, a study conducted by Ma et al. (2021) revealed that teaching self-efficacy for online teaching did not exhibit a significant increase, while self-efficacy in technology application demonstrated a notable increase.

E-learning, mainly fueled by the development of information and communication technology, has become an increasingly common method used in the education system. E-learning allows learners to access education without having to be in the same physical place as the instructor. On the other hand, in the context of e-learning, teachers also need to face new challenges. They have to adjust to new technologies, design effective learning experiences virtually, and motivate students to stay engaged in e-learning. This is an important point related to the concept of teacher self-efficacy. With high self-efficacy, teachers can create engaging learning experiences, use relevant technology tools and platforms, and overcome barriers that arise in e-learning. Innovativeness and self-efficacy are the main elements related to issues in e-learning. This study will explain the role of these two variables on e-learning so that the purpose of this study is to explain the effect of teacher self-innovativeness and teacher self-efficacy on e-learning.

RESEARCH METHODS

This study employed quantitative associative methods to examine the relationship between the variables of self-innovation, self-efficacy, and e-learning practices. The data were collected from a sample of 30 lecturers who implemented e-learning. The participants were asked to complete an online questionnaire using Google Forms. The study population consisted of 12 females and 18 males, representing various disciplines and several private universities in Surabaya. The age range of the participants was between 32 and 54 years old. To formulate the questionnaire, data obtained from semi-structured interviews conducted with the 30 lecturers were used, which helped in describing the dimensions of each variable.

The self-innovativeness variable comprises the dimensions of exploration, generation, championing, and implementation, as defined by De Jong and Den Hartog (2010). On the other hand, self-efficacy consists of the dimensions of efficacy in instructional strategies, efficacy in student engagement, and efficacy in classroom management, as identified by Robinia and Anderson (2010). The variable of e-learning practice encompasses the dimensions of classroom management, instructional strategies, and success in student engagement, as highlighted in studies by Robinia and Anderson (2010) and Borup et al. (2014). All dimensions are described in the form of closed-ended question items addressed to respondents. All responses will be processed through SPSS and processed by multiple regression analysis which has previously been tested for data quality.

RESULTS AND DISCUSSIONS

All 30 lecturers who became respondents and successfully provided responses with a good level of quality. In the validity and reliability tests, these requirements have been met. All statement items have a corrected item total correlation number with a level of not less than 0.3 and all variables also have an alpha cronbach value of more than 0.7. In testing the normality of the data as shown in Figure 1, it is shown that the data is normally distributed.

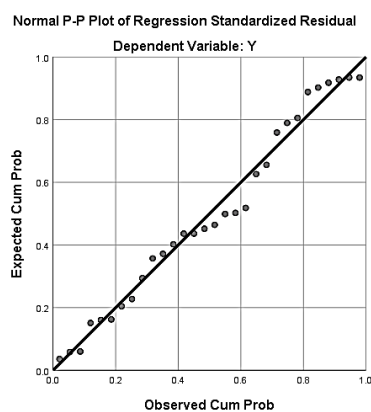


Figure 1. Normality Test
Source: SPSS Output

The autocorrelation test found a Durbin Watson value of 0.989 with a positive value. This indicates that there is no case of autocorrelation in the regression model. Likewise, the VIF and tolerance values are 1.165 and 0.858 which means there is no multicollinearity. Figure 2 is also interpreted as showing no heteroscedasticity.

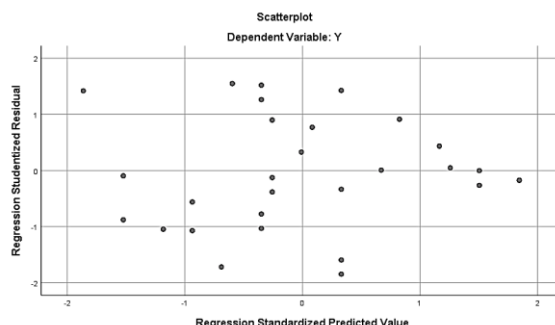


Figure 2. Heteroscedasticity Test
Source: SPSS Output

The formation of the regression model according to the SPSS output obtained $Y = 38.792 + 1.643X.1 + 2.839X.2$. Furthermore, the t-test found the result that both independent variables have a role on e-learning practices. This is shown in the significant value which is at the fulfilled stage not more than 0.05.

Table 1
Coefficients

Model	Unstandardized Coefficients		Standardized Coefficients		t	Sig.
	B	Std. Error	Beta			
1	(Constant)	38.792	4.422		8.772	.000
	X.1	1.643	.657	.328	2.501	.019
	X.2	2.839	.630	.591	4.506	.000

Source: SPSS Output

The F-test was found to be 20.427. This figure supports the finding that simultaneously both independent variables play a role in e-learning practices. As a basis for that is the significant value which is not more than 0.05.

Table 2
ANOVA^a

Model	Sum of Squares	df	Mean Square	F	Sig.	
1	Regression	677.868	2	338.934	20.427	.000 ^b
	Residual	447.999	27	16.593		
	Total	1125.867	29			

Source: SPSS Output

The coefficient of determination found a value of 60.2%. This means that there is a considerable contribution from the variables of self-innovativeness and self-efficacy in shaping e-learning practices. There is only 29.8% contributed from other factors that are not involved in this study.

Table 3
Model Summary^b

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.776 ^a	.602	.573	4.073	.989

Source: SPSS Output

The primary finding of this study underscores the significance of innovativeness in shaping the effectiveness of e-learning practices. Stecuła and Wolniak's research (2022) emphasizes that the availability of suitable resources is a key determinant of e-learning effectiveness. Furthermore, the presence of innovative resources within educational institutions empowers teachers to play a vital role in determining the success of e-learning practices. Notably, the introduction of new ideas, things, or methods of doing things, defined as innovation, assumes particular importance when aligned with a teacher's personal context. This association prompts teachers to make efforts to develop, adopt, or implement innovative approaches in their teaching practices (Yuan & Woodman, 2010; Djazilan, 2022). Innovation applied to the education

system must be a major part and reinforce the learning process in higher education in order to bring many benefits to students in the learning process (Munir et al., 2022). It should be developed until it becomes an inherent culture of the organization (Ishak et al., 2016; Djazilan & Darmawan, 2021; Irfan & Al Hakim, 2022). Therefore, every university must provide qualified teaching staff who are familiar with the use of technology. The effectiveness of e-learning practices depends on the professional development of teachers such as training. Furthermore, the effectiveness of e-learning practices is influenced by multiple factors such as planning, design, support systems, teacher-student interaction, and assessment of learning outcomes (Simonson et al., 2019). However, it is important to acknowledge that even prior to the pandemic, students already harbored divergent perspectives and opinions regarding e-learning. They expressed a preference for learning with teachers in traditional settings, while on the other hand, they also exhibited an interest in attending e-learning practice sessions within the school environment.

Another finding is that self-efficacy plays a crucial role in determining the effectiveness of e-learning practices. According to Bandura (1997), educators must possess confidence in their ability to perform at a certain level. Moreover, self-efficacy is not solely dependent on an individual's skills but also on their beliefs regarding their capability to apply those skills in specific situations. This finding is supported by a study conducted by Dolighan and Owen (2020), who examined the perceived self-efficacy of fully online teachers during the COVID-19 pandemic. The study revealed that higher scores in online teaching efficacy were associated with attending online courses and participating in professional development sessions. Teaching in virtual environments requires distinct skills compared to face-to-face instruction. These skills encompass managing online classes, designing instructions for online platforms, motivating and engaging online students, developing instructional designs for online environments, and fostering social and learner relationships in online settings (Jackson & Jones, 2019). Although the learning process has been hindered by the pandemic, effective measures have been implemented to address these challenges as well.

DeCoito and Estaiteyeh's (2022) research revealed that teachers encountered various challenges that had a negative impact on their attitudes and perceptions towards online teaching, leading to a sense of inadequate support. Although teachers' experience, self-efficacy, and technological competence demonstrated a modest enhancement in their perspectives on online teaching, it fell short of bringing about significant changes in their mindsets. In light of this, the researchers propose the implementation of impactful professional development initiatives and the provision of comprehensive support to teachers. These measures are aimed at facilitating their transition and fostering a positive shift in their personal perceptions of online teaching.

The rapid shift away from the frontline to teach and learn via Zoom and similar platforms poses some challenges in terms of curriculum and planning, social life of students, assessing, and instructional strategies (Stefanile, 2020; Kurniawan et al., 2022). Moorhouse and Wong (2022) proposed that a blend of both synchronous and online learning modes could be optimized to enhance online learning and suggested a possible role model on engaging teachers in the integration of both synchronous and online digital learning technologies and approaches to instruction. One of the specific challenges is the seamless integration of interactive, well-designed teaching resources in the e-learning classes which may be hard for some educators to do (Stefanile, 2020). With practice of the e-learning over time and the lecturers' personal and professionals' character, though, the effectiveness can be realized.

CONCLUSIONS

The objective of this research is to examine the relationship between teacher self-innovativeness and the influence it has on e-learning practices. The results showed that as the teachers perceived themselves to be innovative, they felt they took responsibility for teaching themselves, were better able to handle e-learning practices in particular, as well as in implementing e-learning activities. As a result of this study, the self-efficacy perceived by the teachers was very high. According to the results of the analysis, it was discovered that teachers' self-efficacy has a significant and positive influence on e-learning practices.

The results of this study can be useful for researchers and university leaders who plan teacher professional development related to e-learning practices and the implementation of multiple technologies in the educational system. To increase personal innovation, current professional development must be personalized, with sustainable programs offering assistance to combine actual working experiences with advice and practice demonstrations on how to effectively implement e-learning practices in the classroom. In order to foster innovation in e-learning, it is important to create an environment where teachers are encouraged to contribute their own innovative ideas based on their learning and teaching experiences. This can be achieved by providing teachers with the flexibility to implement a combination of face-to-face and online learning methods that cater to the needs of students while prioritizing their well-being. Additionally, teachers should continuously enhance their knowledge and skills in utilizing diverse communication tools and technologies to personalize learning experiences. By doing so, they can offer real-time assistance to students when they face difficulties and provide recommendations for further learning activities to challenge and enrich advanced learners.

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