

Influence of Self-Efficacy and Peer Support on Learning Enthusiasm and Digital Competence in Online Distance Learning: A Cross-National Study on Workers and MM Program Postgraduate Students

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Abstract

This study investigates the influence of self-efficacy and peer support on learning enthusiasm and digital competence in the context of online distance learning, specifically focusing on students at the Open University Graduate School. The research employing a quantitative method, conducted from October 2022 to January 2023. 68 students who are also working professionals across various fields were selected as respondents for the survey, through a purposive sampling technique. Data was processed by utilizing SEM-PLS. The results of the study demonstrate that self-efficacy does not have a significant impact on learning enthusiasm, but peer support does have a significant impact on learning enthusiasm. Self-efficacy, peer support, and learning enthusiasm do not cause significant changes in digital competency. This research has practical implications for the Open University. Considering that learning enthusiasm is positively and significantly influenced by peer support, the Open University can formulate learning programs that can encourage the formation of peer support for students to improve their performance and to enhance the digital learning experience.

Keywords: self-efficacy, peer support, learning enthusiasm, digital competency, quantitative method.

1. Introduction

Research on self-efficacy has been conducted extensively, particularly when facing the challenges of the Covid-19 pandemic, according to Septania, S., & Sulastris, S. (2022); Chairina, A., & Primana, L. (2022); Alemayehu, L., & Chen, H. L. (2021); Tang, Y., Tseng, H., & Tang, X. (2022). In connection with online learning activities, particularly since the implementation of movement restrictions during the pandemic, researchers have examined self-efficacy in relation to various aspects, including about learning in independent campuses (AKRIM, A. (2022)) and Digital Education Training Programs in enhancing self-efficacy (Mannila, L., Nordén, L. Å., & Pears, A. (2018, August) & Hampton, D. et al., (2020)).

Self-efficacy is defined as an individual's belief in their own ability to organize and implement actions to produce the desired achievements and results (Sihaloho et.al, 2018). Every individual has their own way of directing or motivating themselves, thus possessing confidence in themselves in each factor that has an effect in the process of something they want to achieve. In Bandura's concept, it can be understood that belief in one's own ability leads to the fact that a person understands tasks more bravely, can easily face them, leading to the reduction of stress and anxiety (Malureanu et al., 2021). Self-

efficacy (individual assessments of their abilities) is a strong indicator of educational achievement, academic success, and many other key factors (Chemers et al., 2001; Feldman and Kubota, 2015; Fathi et al., 2020).

In the research gap that the researchers examined, among other things, there is an influence of Goal Setting Theory and Self-efficacy in online work and self-motivation (Thompson, L. F., Meriac, J. P., & Cope, J. G., 2002). Self-efficacy in the workplace area brings a good influence on motivation and work success, according to Lunenburg, F. C. (2011). Performance can be interpreted as the level of achievement of results or "The degree of accomplishment" (Rue and Byars, 1981). Meanwhile, Schunk, D. H. (1991) states that there is an influence of Self-efficacy in academic motivation, but we need further exploration to be investigated related to the goal the individual wants to achieve.

The emergence of various online-based learning application platforms makes it easy to conduct effective learning (Pratiwi, 2020). The limitations due to social distancing policies during the Covid-19 pandemic have triggered the emergence of creativity and new ideas in the process of digital technology-based learning (Herlina & Suherman, 2020). For example, the emergence of innovative collaborative learning based on online media (Dewi, 2020). The form of the digital revolution is increasingly prominent in virtual classrooms, virtual academic guidance, online exams, virtual guidance and counseling, virtual conferences, webinars, and other academic activities conducted virtually have become a "new tradition" in this Covid-19 pandemic era.

In learning with digital, either online or face-to-face, a negative influence caused by multitasking in learning was found, whereas students who have higher Self Efficacy for Self-Regulated Learning (SESRL) have better academic performance, according to Alghamdi, A., Karpinski, A. C., Lepp, A., & Barkley, J. (2020). Along with this, Tseng, H., Yi, X., & Yeh, H. T. (2019) in their research concluded that graduate students have digital abilities, managerial skills, motivation, and self-efficacy higher than undergraduate students. In addition, goal setting, self-efficacy, and social skills are found to be significant predictors to achieve learning outcome goals.

Self-efficacy, as defined by Sihalo et al. (2018), is an individual's belief in his or her ability to organize and implement actions to produce desired achievements and results. It represents a confident attitude from oneself in carrying out tasks according to the abilities one possesses, thus facilitating the attainment of expected goals.

Given the significance of self-efficacy in online learning, it is clear that further research on this topic is essential. Specifically, a study titled "Influence of Self-Efficacy and Peer Support on Learning Enthusiasm and Digital Competence in Online Distance Learning" is crucial, particularly considering that the target respondents are workers and students at the Open University Graduate School, who reside in diverse cities and different countries. This research is anticipated to offer valuable insights that can contribute positively to improving the performance quality of students at the Open University and enhance the services provided by the Open University.

Based on the research background, this study was conducted with the objective to: (1) To examine the influence of self-efficacy on learning enthusiasm in the context of online distance learning; (2) To examine the influence of peer support on students' learning enthusiasm in an online distance learning environment; (3) To examine the influence of

self-efficacy on students' digital competence; (4) To examine the influence of peer support influences digital competence in an online distance learning context; (5) To examine the influence of learning enthusiasm on digital competence in an online distance learning context.

2. Literature Review

Self-efficacy. Self-efficacy refers to a person's belief in their ability to organize and carry out necessary actions to achieve a given outcome (Bandura, 1997). This means that self-efficacy allows a person to answer the question, "Can I do this?", of course, this is a specific situation, and individuals may find that self-efficacy beliefs vary from situation to situation. Peterson and Arnn (2005) stated that self-efficacy is the basis of human performance manifestation. They concluded that research in the area of self-efficacy can provide information that will enhance performance in the workplace. In the context of human learning, Zimmerman and Schunk (2003) agreed, commenting that "the predictive strength of self-efficacy beliefs on students' academic functions have been extensively verified". A person with high self-efficacy will accept negative feedback in a more positive way and use this feedback to improve their performance. Moreover, according to Robert (in Febriani, 2014), self-efficacy can be a determinant of performance success and job implementation. This makes self-efficacy crucial for entrepreneurship where effort, perseverance, and planning become crucial (Shane, Locke, Collins, 2003). Self-efficacy has aspects, namely magnitude (level of difficulty facing tasks), strength (strength), and generality (generality) (Bandura, 1997).

Peer support. Humans, being social creatures, are influenced by the support they receive from their social circles. Cobb (in Smet, 2018) stressed that social support comprises information leading individuals to believe that they are cared for and loved. Information from the social environment that fosters the individual's perception of being a recipient of positive effects, affirmation, or assistance is a manifestation of social support (Gottlieb in, Smet 2018). Rook (in Smet, 2018) views social support as one of the functions of social ties (or bonds) that describes the degree and overall quality of interpersonal relationships. Ritter (in Smet, 2018) asserts that social support refers to emotional, instrumental, and financial assistance sourced from an individual's social network.

Gottlieb (in Smet, 2018) suggests that social support consists of verbal and/or non-verbal information or advice, tangible aid, or action provided by social intimacy or obtained due to their presence, yielding emotional or behavioral impacts for the recipient. Mead (in Sinaga and Kustanti, 2017) posits that peer social support is a system of mutual giving and receiving that is fundamental to the principle of reciprocal respect, sharing responsibility, and a mutual agreement to aid one another. This mutual aid extends to understanding and empathizing with other individuals' situations to help them navigate and share emotional experiences and psychological problems. Moreover, Faulkner and Basset (in Sinaga and Kustanti, 2017) argue that peer social support is a group where members mutually assist one another in achieving shared goals.

There are some factors Influencing Peer Support. According to Stanley (in Sapardo, 2019), factors influencing social support include: 1) Physical needs: Physical necessities such as clothing, food, and shelter can impact social support. If someone's physical needs are unmet, that person is less likely to receive social support; 2) Social needs: Good self-

actualization can make a person more recognized by the community than people who never socialize. Those with good self-actualization tend to seek recognition in community life, emphasizing the importance of recognition; and 3) Psychic needs: Psychic needs such as curiosity, a sense of security, religious feelings cannot possibly be fulfilled without the help of others. Anyone facing a problem, whether minor or severe, will tend to seek social support from those around them.

Myers (in Maslihah, 2011) identifies three important factors that influence a person's willingness to provide social support: 1) Norms and Social: These are beneficial in guiding individuals in fulfilling their life obligations; 2) Empathy: Feeling the hardships of others with the aim of anticipating emotions and motivational behavior to reduce suffering and improve others' welfare; and 3) Social exchange: Reciprocal relationship of social behavior between love, service information. Balance in the exchange will lead to a satisfying condition of interpersonal relationships.

The aspects of Peer Support, according to Cutrano & Gardner, 2004; Uchino, 2004 (in Sarafino, E. P & Smith, T. W. 2011), are: a) Emotional or esteem support; b) Tangible or Instrumental support: This support includes direct assistance, like lending money or helping execute specific tasks; c) Informational support: This support may take the form of advice, guidance, suggestions, or feedback; and d) Companionship support: This support gives a sense of belonging to a group of individuals with similar interests.

On the other hand, House (in Smet, 2018) distinguishes four dimensions of social support as follows: 1) Emotional support: Includes empathy, care, and attention to the person in question; 2) Esteem support: Occurs through expressions of positive respect for the person, encouragement, and agreement with the individual's ideas or feelings; 3) Instrumental support: Includes direct assistance, such as lending money or helping with tasks during times of stress; dan 4) Informative support: Includes providing advice, directions, suggestions, or feedback. We can conclude that the aspects of peer support are Emotional or esteem support, Tangible or Instrumental support, Informational support, and Companionship support

Learning Enthusiasm. Research on the relationship between close friend support and learning enthusiasm and achievement motivation has been conducted previously. Among them, such as a study on 15,000 students in nine different high schools in the United States, Asian American students who have the highest average grades state that they have the highest level of support from close friends in academic achievement. These Asian American students learn together in groups, encourage each other and praise the successes achieved by their peers. (Steinberg, Dombusch, and Brown 1992, in Wade & Tavis, 2007).

In line with this research, there is a similar study by Hilmi (2015) on the "Influence of Close Friend Support on Achievement Motivation of Students at SMKN II Malang" with findings of a positive and significant influence between close friend support and achievement motivation in students at SMKN II Malang. The study shows that the variable of close friend social support simultaneously has a significant effect on achievement motivation. This is reinforced by the opinion proposed by Sardiman (2011), that learning motivation is a non-intellectual psychic factor. Its distinctive role is in terms of fostering enthusiasm, feeling happy, and the spirit to learn. Students who have strong

motivation will have a lot of energy to engage in learning activities. Motivation plays a very important role in improving student learning outcomes.

Students will have high motivation if they already know the goals to be achieved. If students already have high motivation to learn, then they will try harder and more seriously to get high learning outcomes as well. Conversely, if students have low motivation, they will be lazy to participate in learning and even not do the tasks given. This research also strengthens the research results conducted by Muhamad Ilyas. The research concluded that learning motivation has a positive effect on student learning outcomes. With high learning motivation, students' learning outcomes can be improved

Digital Competency. Digital competence, also referred to as digital literacy, entail a range of abilities that allow individuals to use digital technology effectively, efficiently, and ethically. These skills can encompass basic skills, such as the ability to use a computer or smartphone, as well as more complex abilities, such as the ability to evaluate the credibility of online information, communicate digitally, or manipulate digital content (Hobbs, 2010). In the 21st century, digital competence are becoming increasingly important as technology becomes more integrated into our daily lives. They are critical for accessing digital services, participating in the digital economy, and leveraging technology for learning, work, and social interaction (Van Deursen & Van Dijk, 2010).

Furthermore, research has indicated that there is a digital divide, or gap, in digital competence, with certain populations (such as the elderly, the socioeconomically disadvantaged, and those living in rural areas) having lower levels of digital competence than others. This can result in unequal access to information and opportunities (Hargittai, 2002). To address this divide, educational institutions and policymakers are increasingly emphasizing the need for digital competence education and training programs. For example, schools may integrate digital skills into their curricula, and workplaces may offer training programs to upskill their employees (Bawden, 2008)

Based on the literature review, we propose four hypothesis as follow: (1) H1: Self-efficacy has a positive influence on learning enthusiasm in the context of online distance learning; (2) H2: Peer support influences learning enthusiasm; (3) H3: Self-efficacy influences digital competence; (4) H4: Peer support influences digital competence in the context of online distance learning; (5) H5: Learning enthusiasm influences digital competence in the context of online distance learning.

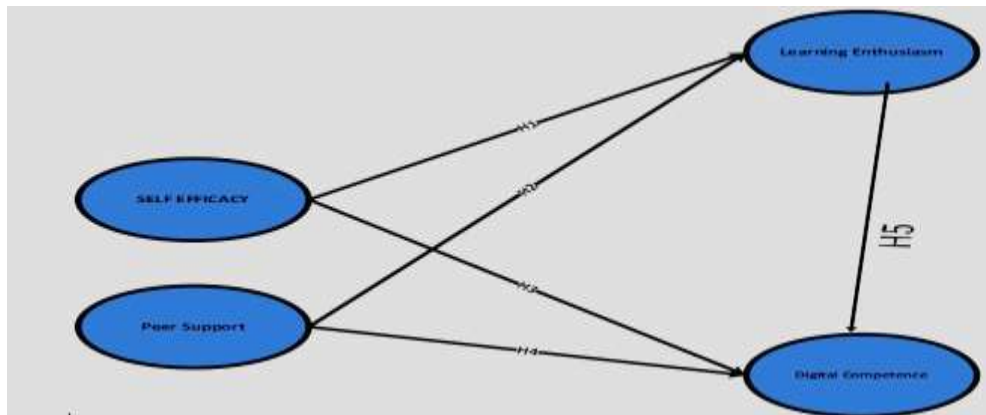


Figure 1: Research Model

3. Research Methods

This research is an ex post facto study, employing a quantitative method to evaluate the impact of self-efficacy and peer support on the learning enthusiasm and digital competence among students of the MM Program Postgraduate at Open University across nations. The study specifically targets students from the 2021.2 to 2022.2 batches. Conducted from October 2022 to January 2023, the study sampled represent total of 800 students representing diverse cities and cross countries. During the initial data collection phase, in-depth interviews were conducted with approximately 25 students. The majority reported a decline in their learning enthusiasm, particularly when they felt their ability to complete academic tasks was compromised. Additionally, many students noted that receiving positive affirmation and support from their close friends helped boost their learning enthusiasm. Following the interviews, a 20-item questionnaire was developed to further investigate the variables under study. The questionnaire items were designed to capture data on four main variables: self-efficacy, support from close friends, learning enthusiasm, and digital competence. Out of the 800 students, 68 students who are also working professionals across various fields were selected as respondents for the survey. This sample was chosen to provide a broad understanding of the relationship between the variables across different professional backgrounds, It's Purposive sampling.

The interpretation of the survey data was conducted in light of the findings from the initial interviews, aiming to confirm, contrast, or enrich the insights derived from the qualitative phase. The statistical analyses sought to quantify the relationships between the variables and to provide robust evidence to support or refute the research hypotheses. To ensure the reliability and validity of the study, the questionnaire was tested for clarity, comprehensiveness, and appropriateness for the study's aim and objectives. The questionnaire was also evaluated for its internal consistency to ensure that each item contributed adequately to the understanding of the variables. The study maintained strict confidentiality and anonymity procedures to uphold the ethical standards of research and ensure the integrity of the data collected.

4. Findings and Discussions

PLS Structural Equation Model Analysis Results (SEM-PLS). Measurement Model Analysis Results. Measurement model analysis or in PLS called the outer model needs to be done first in the structural equation model (SEM) analysis, because this analysis is able to explain the specific relationship between latent variables and each of their manifest variables. The initial results that can be obtained from this outer model are an assessment of the validity and reliability of the constructs used. The assessment of construct validity and reliability must first pay attention to the operationalization of the construct. If the operationalized construct is reflective, then the validity assessment is carried out through measuring content validity consisting of convergent validity and discriminant validity, and the reliability assessment is carried out by measuring internal reliability through measuring the Cronbach's alpha and composite reliability values for each construct. If the construct is formally operationalized, the validity assessment is carried out through substantive content measurement, namely by comparing the relative weight and seeing the significance of the t-statistics of the indicators on the construct. Guidelines for the validity assessment of reflective and formative indicators used in this study refer to the measures as listed in tables 1 and 2.

Table 1. Rule of thumb of validity and reliability assessment of reflective indicators

Validity and Reliability	Parameters & Rule of Thumb
Convergent Validity: Argues that the manifest variables of a construct should be highly correlated (Campbell DT & Fiske D, 1959)	It is said to be valid if: - the outer loading value on the indicator >0.708 for confirmatory research; 0.6-0.7 for exploratory research is still acceptable (J. F. Hair et al., 2013), and - Average Variance Extracted (AVE) value >0.50 (Fornel C & Larcker D, 1981; J. F. Jr. Hair et al., 2014)
Discriminant Validity: Argues that the manifest variables of different constructs should not be highly correlated (Campbell DT & Fiske D, 1959)	It is said to be valid if: - the outer loading value of an indicator on a construct $>$ all its cross-loading values with other constructs (Hair et al., 2013), or - The square of the correlation between latent constructs $<$ AVE of each related construct (Fornel C & Larcker D, 1981)
Reliability: Proves the accuracy, consistency, and precision of the instrument in measuring the construct.	It is said to be reliable if: - Cronbach's Alpha > 0.70 for Confirmatory Research, and > 0.60 is still acceptable for Exploratory Research (J. F. Hair et al., 2013)), or - Composite Reliability > 0.708 for Confirmatory Research, 0.60 - 0.70 is still acceptable for Exploratory Research (J. F. Hair et al., 2013)

Adopted from: (Chin, 1998), (Fornel C & Larcker D, 1981), (J. F. J. Hair et al., 2014)

Table 2. Rule of thumb of the assessment of validity and reliability of formative indicators

Criteria	Parameters & Rule of Thumb
Significance Weight:	>1.65 for significance level = 10% >1.96 for significance level = 5 % >2.58 for significance level = 1 %
Multicollinearity:	$VIF < 10$ or < 5 Tolerance > 0.10 or > 0.20

The measurement model analysis in this research uses SmartPLS3 software with the second order construct (SOC) or higher order construct (HOC) method, which is a modeling method in which the construct is reflected or formed by a dimensional latent construct. The Higher Order Construct (HOC) modeled in this study uses HOC type 3 where the lower order and higher order measurement levels are both done reflectively.

Measurement Model. Initial Measurement Model is presented in Figure 2.

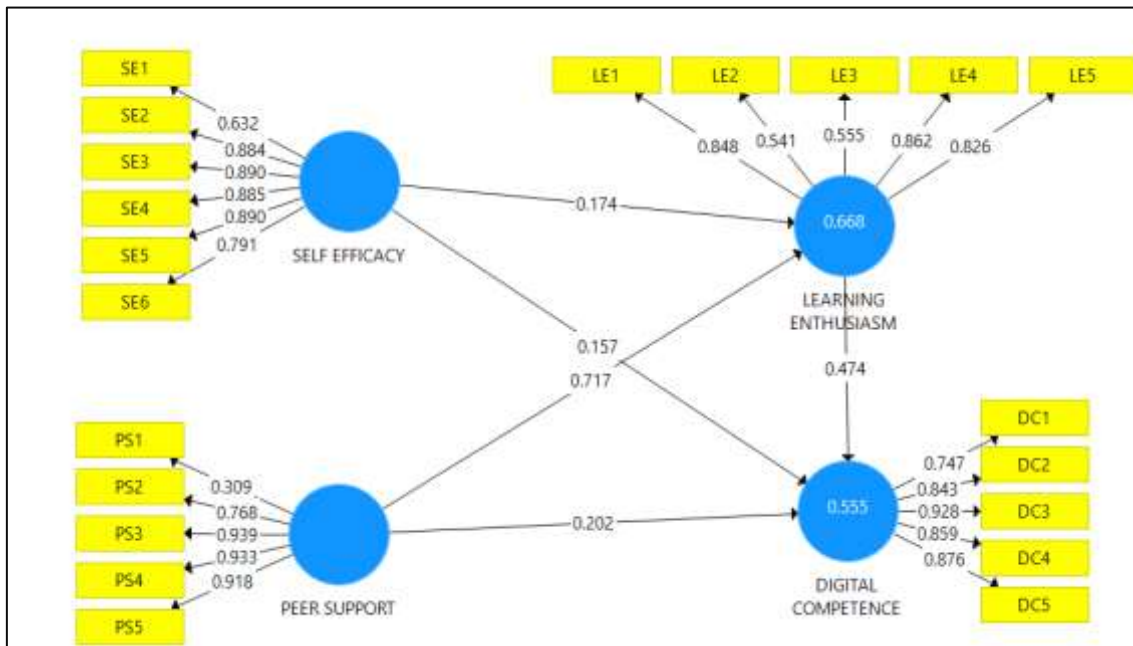


Figure 2. Initial measurement model

The initial measurement model in the lower order explains the manifest variables that are correlated with the construct (outer loading).

Table 3. outer loading in the initial measurement model

Indicator	Digital Competence	Learning Enthusiasm	Peer Support	Self-Efficacy	Description
DC1	0.747				Valid
DC2	0.843				Valid
DC3	0.928				Valid
DC4	0.859				Valid
DC5	0.876				Valid
LE1		0.848			Valid
LE2		0.541			Not Valid
LE3		0.555			Not Valid
LE4		0.862			Valid
LE5		0.826			Valid
PS1			0.309		Not Valid

PS2	0.768	Valid
PS3	0.939	Valid
PS4	0.933	Valid
PS5	0.918	Valid
SE1	0.632	Not Valid
SE2	0.884	Valid
SE3	0.890	Valid
SE4	0.885	Valid
SE5	0.890	Valid
SE6	0.791	Valid

Based on Table 3, it is seen that outer loading on the Digital Competence variable, all indicators are worth more than 0.7, so all valid indicators can be stated. The outer load value on the Learning Enthusiasm variable has only three indicators worth more than 0.7, so only three are valid. The outer load value on the Peer Support variable has only four indicators worth more than 0.7, so only four are valid. The outer loading value on the Self-Efficacy variable is only five indicators with a value of more than 0.7, so only 5 indicators are valid. The reliability values of the initial model are shown in Table 4.

Table 4. Reliability test results for each variable

Variable	Cronbach's Alpha	Rho_A	Composite Reliability	Average Variance Extracted (Ave)	Description
Digital Competence	0.905	0.922	0.930	0.727	Reliable
Learning Enthusiasm	0.788	0.833	0.854	0.549	Reliable
Peer Support	0.839	0.900	0.897	0.656	Reliable
Self-Efficacy	0.910	0.922	0.931	0.696	Reliable

Table 4 shows that the variables digital competence, learning enthusiasm, peer support, and self-efficacy are reliable because of $CR > 0.7$ and $AVE > 0.5$.

The revision of the measurement model is carried out through the iteration process by removing invalid indicators, and the final model is obtained as in Figure 3.

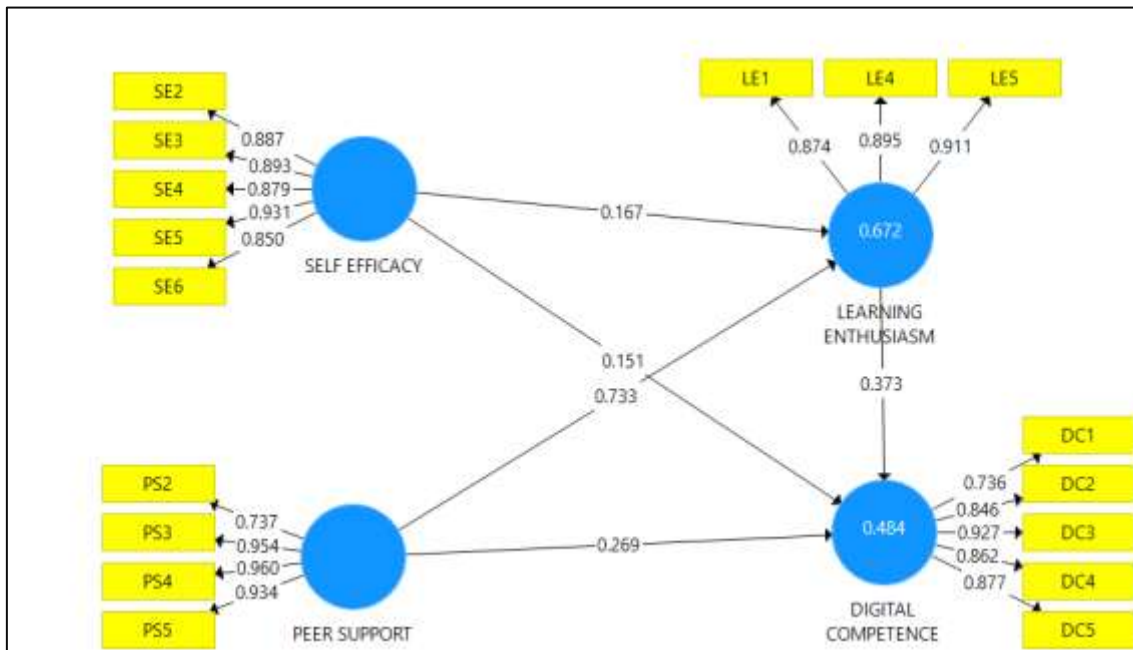


Figure 3. Revised Measurement Model

The revised measurement model in the lower order explains the manifest variables that correlate with the construct (outer loading). The results of the measurement model in its higher order explain the value of the path coefficients between constructs as in Table 5.

Table 5. Outer loading for Revised Measurement Model

Indicator	Digital Competence	Learning Enthusiasm	Peer Support	Self - Efficacy	Self-Efficacy
DC1	0.736				Valid
DC2	0.846				Valid
DC3	0.927				Valid
DC4	0.862				Valid
DC5	0.877				Valid
LE1		0.874			Valid
LE4		0.895			Valid
LE5		0.911			Valid
PS2			0.737		Valid
PS3			0.954		Valid
PS4			0.960		Valid

PS5	0.934	Valid
SE2	0.887	Valid
SE3	0.893	Valid
SE4	0.879	Valid
SE5	0.931	Valid
SE6	0.850	Valid

The results of the revised measurement model on each variable are able to produce validity and reliability parameter values that meet the rule of thumb. All outer loading values on manifest variables on constructs, as well as construct outer loading values are above 0.7, and produce reliable construct values. The AVE and CR values generated in each construct of each variable are also above the value of 0.7 for AVE and above 0.5 for CR, so it can be said that the convergent validity of all variables and their manifestations is met as shown in Table 6.

Table 6. Reliability on Revised Model

Variable	Cronbach's Alpha	rho_A	Composite Reliability	Average Variance Extracted (AVE)	Desc.
Digital Competence	0.905	0.925	0.929	0.726	Reliable
Learning Enthusiasm	0.873	0.875	0.922	0.798	Reliable
Peer Support	0.920	0.943	0.945	0.812	Reliable
Self-Efficacy	0.934	0.964	0.949	0.790	Reliable

Furthermore, the validity measurement is continued by measuring discriminant validity. The first method of measuring discriminant validity is by using criteria (Fornel C & Larcker D, 1981). A latent variable is said to meet discriminant validity if the square value of the correlation between latent constructs < AVE of each related construct, or the square root of AVE > correlation between latent constructs. Based on the test results tabulated in table 6, it is found that all the squared values of the correlation between latent constructs < AVE of each related construct, so it can be said that all latent variables meet discriminant validity, Variables are reliable because CR> 0.7 and AVE> 0.5 ((Fornel C & Larcker D, 1981).

Table 7. Correlation value between variable constructs

	Digital Competence	Learning Enthusiasm	Peer Support	Self - Efficacy
Digital Competence	0.852			
Learning Enthusiasm	0.662	0.893		

Peer Support	0.634	0.806	0.901	
Self-Efficacy	0.448	0.486	0.435	0.889

The table 7 above shows that all squared correlation values between latent constructs < AVE of each related construct, so it can be stated that discriminant validity is met (Fornell C & Larcker D, 1981). Measurement of discriminant validity with the second method, carried out by comparing the outer loading value of indicators on a construct which must be greater than all cross-loading values with other constructs (J. F. Jr. Hair et al., 2014; Henseler et al., 2009).). This method also shows that the outer loading value for each construct is above the cross-loading value between the measured construct and other constructs so that discriminant validity is met.

Table 8. Cross loading of revised model

	Digital Competence	Learning Enthusiasm	Peer Support	Self-Efficacy
DC1	0.736	0.327	0.336	0.324
DC2	0.846	0.492	0.530	0.420
DC3	0.927	0.625	0.611	0.418
DC4	0.862	0.665	0.592	0.384
DC5	0.877	0.625	0.568	0.362
LE1	0.649	0.874	0.723	0.519
LE4	0.526	0.895	0.739	0.295
LE5	0.592	0.911	0.698	0.476
PS2	0.430	0.535	0.737	0.663
PS3	0.604	0.755	0.954	0.325
PS4	0.624	0.773	0.960	0.326
PS5	0.604	0.806	0.934	0.349
SE2	0.314	0.285	0.273	0.887
SE3	0.431	0.401	0.372	0.893
SE4	0.439	0.518	0.400	0.879
SE5	0.466	0.541	0.522	0.931
SE6	0.264	0.308	0.277	0.850

From table 8 it is seen that the cronbach's alpha value of each dimensional structure and variable is above 0.7, and the composite reliability value of every dimensional construction and variable is also above 0.7 so that it can be said that all variables and their manifestations have good reliability. Based on the outer measurement of the model on the latent variable of the revision result, it can be concluded that all the structures of the variable are valid and reliable. Structural Model Analysis Results (Structural Model) is presented in Figure 4.

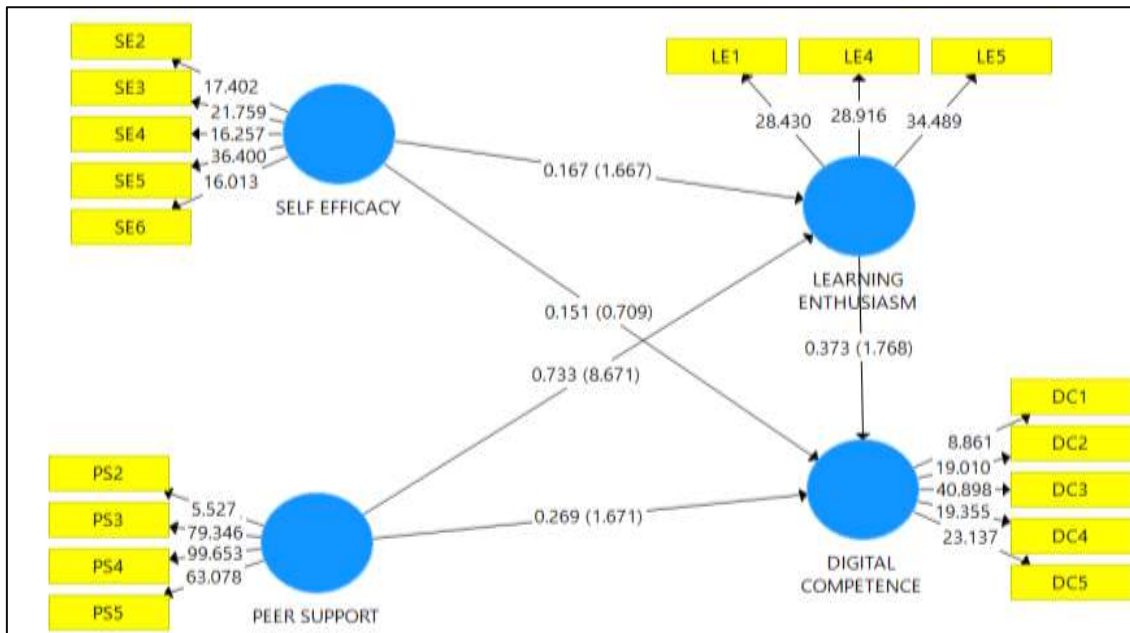


Figure 4. Estimation and testing of the structural model

Full model above model shows the relationship between the latent variables exogenous and endogenous. The values displayed are large path coefficients on each relationship that show a large direct influence of the exogenous variable on the endogenic variable. At the formation of this full model, the validity and reliability of the indicators are no longer seen, but the indicator can be reduced if it has no statistically significant influence or is not theoretically supported. For that it is necessary to see the test results of the model using bootstrapping steps on the SmartPLS, then obtain the results as in Figure 5 below.

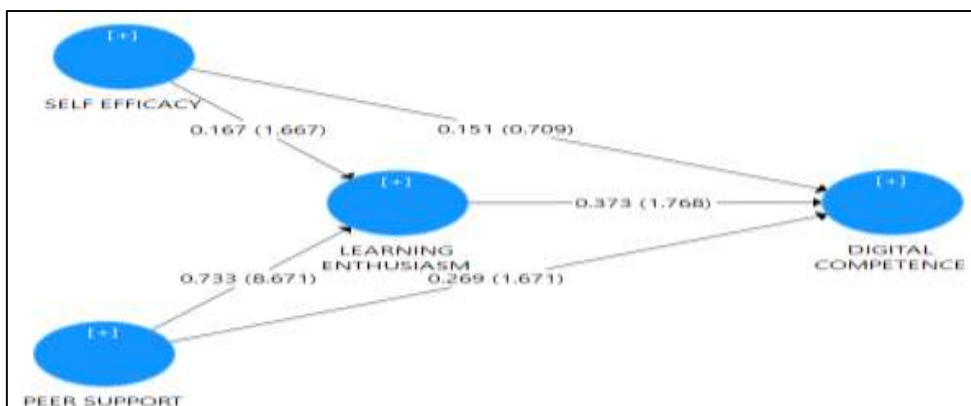


Figure 5. Hypothesis Testing on Structural Models

Figure 5 shows the coefficient value between the variables and the t-value value on the curve that is the test result. Below is a tabulation of the results of testing the model of the overall structural equation (full model) that is described based on path coefficients or relationships between latent variables as in Table 9.

Table 9. Value of *path coefficients, t-statistics significance, p-value*

Relation	Original Sample (O)	Sample Mean (M)	Standard Deviation (STDEV)	T Statistics (O/STDEV)	P Values
Self-Efficacy -> Learning Enthusiasm	0.167	0.208	0.100	1.667	0.096
Peer Support -> Learning Enthusiasm	0.733	0.709	0.085	8.671	0.000
Self-Efficacy -> Digital Competence	0.151	0.215	0.212	0.709	0.479
Peer Support -> Digital Competence	0.269	0.285	0.161	1.671	0.095
Learning Enthusiasm -> Digital Competence	0.373	0.304	0.211	1.768	0.078

From Table 9, it is seen that of the five hypotheses, only one is acceptable, namely the following: (1) There was a positive influence of self-efficacy on learning enthusiasm of 0.167, but it was statistically insignificant because of the t-count value of 1.667 (lower than 1.96), or the p-value of 0.096 (greater than 5%). This condition suggests that self-efficacy has no significant impact on increased learning enthusiasm; (2) There was a positive peer-support effect on learning enthusiasm of 0.733 (73.3%) and statistically significant due to obtaining a t-count value of 8.671 (larger than 1.96) or a p-value of 0,000 (less than 5%). This condition suggests that the better peer support, the more learning enthusiasm will increase; (3) There was a positive impact of self-efficacy on digital competence of 0.151, but it was statistically insignificant because of a t-calculate value of 0.709 (lower than 1.96), or a p-value of 0.479 (greater than 5%). This condition shows that self-efficacy has no significant impact on increased digital competence; (4) There was a positive impact of peer support on digital competence of 0.269, but it was statistically insignificant because of a t-calculated value of 1.671 (lower than 1.96), or a p-value of 0.095 (larger than 5%). This condition shows that peer support has no significant impact on increased digital competence; (5) There was a positive impact of learning enthusiasm on digital competence of 0.373, but it was statistically insignificant because of a t-calculate value of 1.768 (lower than 1.96), or a p-value of 0.078 (larger than 5%). This condition shows that learning enthusiasm has no significant impact on increased digital competence. (6) The only acceptable hypothesis is the second one where peer support has a positive and significant influence in building learning enthusiasm. This may be due to the limitation of the sample.

The results of testing the first hypothesis revealed that increased self-efficacy did not lead

to a significant increase in learning enthusiasm. According to Robert (in Febriani, 2014), self-efficacy can be a determinant of performance success and job implementation. There are several factors that can affect the relationship between self-efficacy and learning enthusiasm, such as environmental factors or past experiences. A supportive learning environment can affect the level of learning enthusiasm. Furthermore, individual experiences in achieving previous success in learning can affect their self-efficacy. If individuals have previous positive experiences in achieving learning goals, they may have a high level of self-efficacy. However, a high level of self-efficacy does not always directly result in a high appetite for learning. Thus, although self-efficacy plays an important role in individual motivation, it cannot immediately increase learning enthusiasm. Learning enthusiasm can be influenced by other factors beyond self-efficacy, such as peer support, as demonstrated in the results of hypothesis 2 testing.

According to the second hypothesis test, peer support affects increased learning enthusiasm. The findings support Hilmi (2015) that show positive and significant influence of close friend support on the achievement motivation in students. Information from the social environment fosters the individual's perception of being a recipient of positive effects, affirmation, or assistance is a manifestation of social support (Gottlieb in, Smet 2018). Peer support can increase learning enthusiasm because humans being are influenced by the support they receive from their social circles. Cobb (in Smet, 2018) stressed that social support comprises information leading individuals to believe that they are cared for and loved, which will encourage increased motivation to do something. Peer support significantly enhances learning enthusiasm by serving as a reference for identity formation and self-progress (Wentzel et al., 2010), fostering positive emotions and social support (Wentzel, 1998), and promoting collaborative learning (Vygotsky, 1978). In self-efficacy context, despite self-confidence, peer interaction is a critical driver for amplifying motivation, learning enthusiasm, and achievement.

The test results of the third hypothesis showed that self-efficacy did not have a significant impact on increased digital competence. Students who have high self-effectiveness will not immediately improve digital competence. Self-efficacy refers to a person's belief in their ability to organize and carry out necessary actions to a given outcome (Bandura, 1997, p. 3). However, in this regard, although self-efficacy can affect the motivation and effort of an individual in developing a skill, it is not the only factor that determines a person's digital abilities. To be competent in the digital field, it is necessary to be supported with relevant technical knowledge and skills. Self-efficacy can affect the motivation and self-confidence of individuals in learning and developing such skills, but without proper knowledge and training, self-efficiency alone is not enough. In addition, in strengthening digital competencies, also requires accessibility to digital technologies. Interest factors also play a role in encouraging people to develop their digital competencies.

The fourth hypothesis test revealed that peer support had no significant impact on digital competence. Although people get peer support, but if they don't have a high interest or drive to have digital competencies, it doesn't lead to an effort that leads to digital competence. People may just be encouraged to use digital media as needed without a deeper interest in mastering it.

The test of the fifth hypothesis revealed that learning enthusiasm in the context of online distance learning also did not have a significant impact on increased digital competence. In the 21st century, digital competence is becoming increasingly important as technology becomes more integrated into our daily lives. They are critical for accessing digital services, participating in the digital economy, and leveraging technology for learning, work, and social interaction. (Van Deursen & Van Dijk, 2010). This is likely because the students surveyed tend to use the facilities in online distance learning only as necessary, so they feel no need to be an expert.

Overall, the findings reveal the important role of peer support in encouraging Open University students to have learning enthusiasm but do not encourage the development of digital competencies. Self-efficacy is not a determining factor for increased learning enthusiasm and digital competence. On the other hand, learning enthusiasm is not a significant factor for increasing digital competency among Open University students. This means that there are other factors that can enhance digital competence among them.

5. Conclusion

The present study investigated the relationships between self-efficacy, peer support, learning enthusiasm, and digital competence among students of the MM Program Postgraduate at Open University. The results showed that self-efficacy did not have a significant impact on learning enthusiasm, but peer support had a significant effect on learning enthusiasm. Self-efficacy, peer support, and learning enthusiasm do not lead to significant changes in digital competence. Peer support significantly enhances learning enthusiasm by serving as a reference for identity formation and self-progress (Wentzel et al., 2010), fostering positive emotions and social support (Wentzel, 1998), and promoting collaborative learning (Vygotsky, 1978). In self-efficacy context, despite self-confidence, peer interaction is a critical driver for amplifying motivation, learning enthusiasm, and achievement. The study has a limitation on the number of respondents, so further research can examine the variables in this study by taking a larger number of samples to obtain more representative results. This research has practical implications for the Open University. Considering that learning enthusiasm is positively and significantly influenced by peer support, the Open University can formulate learning programs that can encourage the formation of peer assistance for students to improve their performance and to enhance the digital learning experience.

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References

- AKRIM, A. (2022). Covid-19 Dan Kampus Merdeka Di Era New Normal (Ditinjau Dari Perspektif Ilmu Pengetahuan). *Aksaqila Jabfung*.
- Alemayehu, L., & Chen, H. L. (2021). The influence of motivation on learning

engagement: The mediating role of learning self-efficacy and self-monitoring in online learning environments. *Interactive Learning Environments*, 1-14.

Bandura, A. (1997). *Self-Efficacy (The Exercise of Control)*. New York: W. H. Freeman and Company.

Bawden, D. (2008). Origins and concepts of digital literacy. In *Digital Literacies: Concepts, Policies and Practices* (pp. 17-32).

Campero, A., Raileanu, R., Küttler, H., Tenenbaum, J. B., Rocktäschel, T., & Grefenstette, E. (2020). Learning with amigo: Adversarially motivated intrinsic goals. *arXiv preprint arXiv:2006.12122*.

Chairina, A., & Primana, L. (2022). Efikasi diri sebagai mediator antara strength-based parenting dan academic buoyancy pada masa pandemi COVID-19.

Cherian, J., & Jacob, J. (2013). Impact of self efficacy on motivation and performance of employees.

Hampton, D., Culp-Roche, A., Hensley, A., Wilson, J., Otts, J. A., Thaxton-Wiggins, A., ... & Moser, D. K. (2020). Self-efficacy and satisfaction with teaching in online courses. *Nurse educator*, 45(6), 302-306.

Hargittai, E. (2002). Second-level digital divide: Differences in people's online skills. *First Monday*, 7(4).

Hobbs, R. (2010). *Digital and media literacy: A plan of action*. Washington, DC: The Aspen Institute.

Lunenburg, F. C. (2011). Self-efficacy in the workplace: Implications for motivation and performance. *International journal of management, business, and administration*, 14(1), 1-6.

Mannila, L., Nordén, L. Å., & Pears, A. (2018, August). Digital competence, teacher self-efficacy and training needs. In *Proceedings of the 2018 ACM Conference on International Computing Education Research* (pp. 78-85).

Mayer, R.E. (2009). *Multimedia learning: Prinsip-prinsip dan aplikasi*. (Terjemahan Baroto Tavip Indrojarwo) Yogyakarta: Pustaka Pelajar. (Buku asli diterbitkan tahun 1999)

Santrock, J.W. (2003). *Adolescence Perkembangan remaja*. Jakarta :PT.Erlangga.

Santrock, J.W. (2015). *Perkembangan Anak*. Edisi kedua. Jakarta : PT.Erlangga.

Sarafino, E.P & Smith, T.W. (2011). *Health Psychology: Biopsychology Interactions* 7th edition. Canada: John Wiley & Sons, Inc.

Sardiman A.M. (2011). *Interaksi dan Motivasi Belajar Mengajar*. Jakarta: PT Raja Grafindo Persada.

Schunk, D. H. (1991). Self-efficacy and academic motivation. *Educational psychologist*, 26(3-4), 207-231.

Septania, S., & Sulastri, S. (2022). EFIKASI DIRI DAN MINAT ENTREPRENEURSHIP MAHASISWA SELAMA MASA PANDEMI COVID-19. *Jurnal RAP (Riset Aktual Psikologi Universitas Negeri Padang)*, 12(2), 161-172.

Sides, J. D., & Cuevas, J. A. (2020). Effect of goal setting for motivation, self-Efficacy, and performance in Elementary mathematics. *International Journal of Instruction*, 13(4), 1-16.

Sihaloho et.al. (2018). Pengaruh Efikasi Diri (Self Efficacy) Terhadap Hasil Belajar Ekonomi Siswa Kelas XI IPS SMA Negeri Se-Kota Bandung.

Sulasmi, E., Sibuea, M. B., Eriska, P., & AirLangga, E. (2020). COVID 19 & KAMPUS MERDEKA Di Era New Normal. *Kumpulan Buku Dosen*.

Tang, Y., Tseng, H., & Tang, X. (2022). The impact of information-seeking self-efficacy and online learning self-efficacy on students' performance proficiency. *The Journal of Academic Librarianship*, 48(5), 102584.

Thompson, L. F., Meriac, J. P., & Cope, J. G. (2002). Motivating online performance: The influences of goal setting and Internet self-efficacy. *Social Science Computer Review*, 20(2), 149-160.

Van Deursen, A. J., & Van Dijk, J. A. (2010). Internet skills and the digital divide. *New Media & Society*, 13(6), 893-911.

Vygotsky, L. S., & Cole, M. (1978). *Mind in society: Development of higher psychological processes*. Harvard university press.

Wentzel, K. R. (1998). Social relationships and motivation in middle school: The role of parents, teachers, and peers. *Journal of Educational Psychology*, 90(2), 202.

Wentzel, K. R., Battle, A., Russell, S. L., & Looney, L. B. (2010). Social supports from teachers and peers as predictors of academic and social motivation. *Contemporary Educational Psychology*, 35(3), 193-202.

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