

# Computer Self-Efficacy, Task Value, Digital Literacy, Online Learning Perceptions on Indonesian University Students' Learning Satisfaction

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## ABSTRACT

This study examines the relationships of student learning satisfaction with computer self-efficacy, task value, digital literacy, and online learning perception on university students in Indonesia. In this context, a structural equation model is proposed by considering studies in the literature. The proposed model is analyzed and discussed considering the literature. A total of 504 university students from Indonesia participated voluntarily in the study. A scale of readiness for e-learning, a self-regulated online learning scale, and a satisfaction survey were used as data collection tools in the study. The influence of online learning perceptions on online learning satisfaction has a coefficient value of 0.557, indicating that the better students' perceptions of online learning, the higher their online learning satisfaction. Then, the influence of computer self-efficacy on perceptions of online learning has a coefficient value of 0.318, which indicates that the better students' confidence in using computers, the better the perception of online learning. Furthermore, the effect of the task value on the perception of online learning has a coefficient value of 0.316 which means that the higher the student's task value, the higher the perception of online learning. Finally, the influence of digital literacy on the perception of online learning has a coefficient value of 0.122 which means that the higher students' digital literacy, the better the perception of online learning.

**Keywords:** Learning Satisfaction, Computer Self-Efficacy, Task Value, Digital Literacy, Learning Perception.

## 1. INTRODUCTION

Corona Virus Disease (COVID - 19) is a new virus spread in early 2020. This virus was discovered in December 2019 in Wuhan, China. Not only has it spread in China, but since March 2020, this virus has spread to 65 countries globally, one of which is Indonesia. The spread of the virus in Indonesia since March 2, 2020, we are starting from 2 citizens) until now, hundreds of thousands and even millions have been infected. The government is beginning to take action to reduce this virus. One of the actions taken was issuing PP Number 21 of 2020 concerning Large-Scale Social Restrictions (PSBB) to accelerate the handling of the Covid-19 pandemic. One of the articles contains vacations or temporary closures of workplaces, schools, and restrictions on activities in public places.

For learning activities for formal education, an official regulation has been issued by the Ministry of Education and Culture through the Circular Letter of the

Minister of Education and Culture Number 36962/MPK.A/HK/2020, which contains online learning and working at home to prevent the spread of Covid-19. This online learning policy applies to all students, from Early Childhood Education to Higher Education. This online learning process can be carried out at home using various applications such as Zoom Meeting, Google Classroom, WhatsApp, Google Meet, Microsoft Teams, and other internet-based virtual accounts that can be used for the learning process according to a mutual agreement between educators and teachers. Learners.

The success of online learning activities can be seen from how valuable online learning is for students. According to research [1], when understanding user attitudes in online learning, it is possible to make learning activities more effective, efficient, and attractive. That way, researchers want to determine how satisfied students are in online learning activities during this Covid-19. In addition, in dealing with online learning during the Covid-19 pandemic, from a psychological point of view, students experienced several complaints in

utilizing existing digital learning materials, both learning resources and other digital learning tools. So, to minimize or overcome this, a self-efficacy computer is needed from the student to be able to take part in learning well and the ability/skill in managing resources from cyberspace properly. Computer self-efficacy is the belief in students' self-efficacy in using computers. This ability will help students to be more digitally literate.

Recent literature and research on student satisfaction in online learning environments have not succeeded in providing a comprehensive framework in combining the skills expected of online students, the motivational needs of online learners, the psychological aspects of these students, and the instructional designs created because online learning arrangements require self-reliance, students are expected to have self-regulated learning skills. Furthermore, online learning experiences need computers, the internet, and other communication technologies to interact with instructors and classmates for academic and social purposes. Belief in the value of the learning process (task value) of online learning for teaching materials is an essential factor in student satisfaction in their learning experience, referred to in this study as task value as a part of personal factors.

## **2. LITERATURE REVIEW**

### **2.1. Online Learning Satisfaction**

Satisfaction can provide information about student acceptance, grades, and the quality of the learning experience in online learning [2]. Student satisfaction is considered an important variable in assessing learning effectiveness [3]. Many personal, social, and environmental factors may influence a learner's satisfaction with the learning experience in an online learning environment. Ke & Kwak [4] found that online learning was related to relevance, authentic learning, autonomy, and technological competence, while overall satisfaction with online learning was related to active learning and autonomy. In another study, online learning satisfaction had a positive relationship with teachers' attitudes toward learning, quality of learning, the flexibility of learning time, perceived usefulness and ease of use of e-learning systems, and assessment of diversity, but had a negative relationship with anxiety in using computers [5]. Student satisfaction in online learning has been investigated concerning affective and cognitive variables. Bolinger et al. [6] investigated the relationship between student satisfaction and technology anxiety in an online doctoral program. The results revealed a negative relationship between satisfaction and technology anxiety. Students with low levels of technology anxiety had significantly higher satisfaction levels than students with high levels of technology anxiety.

### **2.2. Perception of Online Learning**

Perceptions of online learning can be defined as students' evaluations of their own learning experiences. Perceived learning outcomes have been used in many studies where the sample size was large, and it was not feasible to measure actual student learning outcomes. Their learning experience takes precedence over achievement scores. [7] show that grades (e.g., GPA) are not representative of what students learn in class because students who study online know that getting grades is based on class participation or timely submission of assignments rather than studying. Perception of learning has been adopted as a variable to measure student learning in various lessons in online learning models (e.g., [8] ; [9]). The literature shows that Perception of learning has a significant positive relationship with online learning flexibility and interaction between students [10], student-instructor interaction [11], cognitive attendance, social presence, and teaching attendance [8] besides, Paechter et al. [12] his research explains that students' expectations regarding subjects, internet skills, and teacher support have predictive power for perceptions of learning in students who study online.

### **2.3. Task Value**

Task Value in online learning in a study conducted by Guo et al. [13] to see the relationship between the background variables of eighth-graders and motivation in predicting learning outcomes in Hong Kong. According to Guo et al. [13], students with high self-concept and high assignment scores gave the best mathematics achievement and educational aspirations. Lawanto et al. [14] studied the value of assignments and self-study in online college engineering courses and concluded that the more students value activity in that learning, the more likely they are to use self-regulation skills such as goal setting, task strategies, evaluation themselves, and seeking help. Lawanto et al. concluded that assignment scores in web-intensive engineering courses significantly correlated with student project performance ( $r = 0.285$ ,  $p = 0.032$ ). Students who value assignments in online learning are more motivated and engaged in mastery. [14] suggest that instructors can support student learning by highlighting the course's usefulness, importance, and interest. In short, task value is an important precursor to self-regulation efforts [15].

### **2.4. Computer Self-Efficacy**

The concept of computer self-efficacy [16]; [17] is deeply rooted in his conception of self-efficacy [18] or individuals' assessments of their ability to organize and carry out the necessary actions to achieve certain types of specified show. A significant emphasis is on the concept of judgment or perception of how one can perform instead of skill evaluation. Self-efficacy is the ability we feel to produce a certain level of performance[19]. No other mechanism is more important in the self-agency model because without the belief that one can produce

results, there is little reason to persevere in the face of adversity and unpleasant times. Similar to standard conceptions of self-efficacy, computer self-efficacy influences capability expectations, emphasizing self-assessment rather than one's skills [20]. Computer self-efficacy is defined as an individual's belief in performing certain computer-related tasks in a general computing domain. Chien [21] investigated the influence of the system and instructor factors on the effectiveness of online learning. Chien concluded that students' computer self-efficacy had a moderate effect on the relationship between the system and training effectiveness. Findings from experimental studies of computer self-efficacy vary widely compared to self-report measures. Liew [22] studied the effect of computer self-efficacy on learner interactions in online learning environments and performance.

#### **2.4. Digital Literacy**

As social media and the rise of ubiquitous content creation occur, interactions with information change dramatically, which in turn causes education and critical thinking skills to shift Gilster and Glistler [23] introduced a modern form of the term "digital literacy" in their book of the same title, writing that: Now, at the turn of the new century, Web technologies are replacing TV, telephone, and newspapers as the primary tools used to obtain information, Informed and entertained, new information methods require new mindsets for eating, enjoying, and learning, which goes along with them. Bawden [24] foresaw the advent of complex digital identities associated with digital literacy, recognizing that young people are widely engaged with digital artifacts of one kind or another, requiring complex vocabulary and syntax to understand rules for video games, master concepts to operate specific software or technology, to know how to participate effectively in online social spaces, and how to meet the criteria for success in practice or search. This blending of literacy and affinity spaces informs research to be carried out in the next two decades and recognizes the importance of understanding the unique language of the digital environment.

### **3. METHODS**

#### **3.1. Data Analysis Techniques**

The data analysis technique used in this research is the quantitative analysis technique. The analysis tool used is multiple linear regression which produces the coefficient of determination and multiple linear regression equation models. Classical Assumption Test Testing the symptoms of classical assumptions is carried out to provide an initial test of the instruments used in data collection, data forms, and data types to meet the regression analysis results. This classical assumption test consists of the data autocorrelation test, multicollinearity test, heteroscedasticity test, and normality test.

Regression Analysis Multiple linear regression method was used to test the effect of this study. Furthermore, data analysis was carried out using a multivariate Structural Equation Model technique. The data analysis technique used in the study used Structural Equation Modeling (SEM). The structural model or the Inner Model is evaluated to see the exogenous to endogenous relationship and uses R-square for the dependent construct. The structural or inner model is assessed by looking at the percentage of variance explained by the R-square for the dependent latent construct using the Stone-Geisser measure) obtained through the bootstrapping procedure. The goodness-of-fit evaluation of the inner model is evaluated by using the R-square for the latent dependent variable with the same interpretation as the regression. Then from these results, a fit model of this study will be obtained on the four existing variables.

#### **3.2. Respondents**

This study uses quantitative analysis with students in Indonesia (focus on the island of Java: Jabodetabek and East Java) as a population. Data collection pooled by non-probabilistic sampling. The Sample obtained for two months from (June - to July 2021) was 516 respondents with a wide distribution of data. In several cities in Indonesia.

#### **3.3. Measurements**

A measurement scale using an online questionnaire for the measurement and data collection techniques. There are five variables used, and how to measure them are as follows:

##### *3.3.1. Student satisfaction*

Satisfaction is a motivational construct that is difficult to measure because of its complex nature. Arguably, in an educational setting, satisfaction can be measured by considering factors as specific as a 'one-time' learning activity, or in general, as a teacher/lecturer's style of communication with his students. The purpose of this study is to require students to show their level of satisfaction from a broad perspective after completing the online learning they are participating in. Therefore, satisfaction is operationalized as learners' perceptions of valuable and meaningful online learning experiences concerning their personal and professional goals.

##### *3.3.2. Perception of online learning*

Perception of online learning is students' self-evaluation on their knowledge and skills, whether the online learning experience helps them acquire new knowledge and skills. In this study, the perception of online learning is defined as a self-assessment for students who study online on the knowledge and skills, they acquire due to completing the online learning they participate in.

**3.3.3. Computer self-efficacy**

In this study, computer self-efficacy refers to students' self-efficacy beliefs to interact with instructors and classmates for academic and social purposes in using computer devices. The computer self-efficacy scale, created by (Howard 2014), measures the criterion variable in the study, computer self-efficacy with the ever-changing technology in mind, and evidenced by general terms such as "computer" contained in items that reference technology. The Howard scale was developed through process improvements using exploratory and confirmatory analysis (GFI = 0.95). The final instrument has 12 items rated on a Likert scale of appropriateness ranging from 1 (strongly disagree) to 7 (strongly agree).

**3.3.4. Task value**

Task value is the value that participants feel from the results of a particular task. In this study, the assignment value was operationalized as the perceived value of online learners and the mediation of course materials. Online students' perceptions of the importance of the course material and their interest in the course material are considered part of the value of the assignment.

**4. RESULT AND DISCUSSION**

To see the correlation, we used bivariate correlation analysis using Pearson correlation. From the table, it can be concluded that all variables are significantly correlated between one variable and another. The correlation between KBD and CSE, KBD with TV, KBD with DL, CSE with TV, CSE with DL, and DL with PPD has a correlation value below 0.5 which means that the correlation is positive but weak. Meanwhile, KBD and PPD correlate 0.5, indicating that the correlation is positive and strong. The TV variable with DL has a significance above 0.05, which shows that TV and DL are not correlated (Table 1).

The fit indices model of this path analysis model is:  $\chi^2=11,914$ ;  $df = 3$ ;  $p$ -value: 0.0077; RMSEA value: 0.076; CFI value 0.976; TLI value of 0.945. The fit path analysis model criteria are when the RMSEA value is < 0.08 with the CFI and TLI values > 0.90. From the fit indices model, it can be concluded that the model fits the data.

**Table 1.** Matrix Pearson Correlation Research Variables

<b>Variables</b>	<b>KBD</b>	<b>CSE</b>	<b>TV</b>	<b>DL</b>	<b>PPD</b>
Online Learning Satisfaction (KBD)	1.000				
Computer Self Efficacy (CSE)	0.286**	1.000			
Task Value (TV)	0.139**	0.335**	1.000		
Digital Literacy (DL)	0.123**	0.152**	0.008	1.000	
Perception of Online Learning (PPD)	0.557**	0.442**	0.423**	0.173**	1.000

Note: \*\*  $p < 0.01$

**Table 2.** Indirect effect for Independent Variables

<b>Path</b>	<b>Coefficients</b>	<b>S. E</b>	<b>t-value</b>	<b>p-value</b>	<b>Description</b>
CSE to KBD via PPD	0.177	0.024	7.419	0.000	Sig.
TV to KBD via PPD	0.176	0.024	7.441	0.000	Sig.
DL to KBD via PPD	0.068	0.021	3.211	0.001	Sig.

Note: KBD is Online Learning Satisfaction; CSE stands for Computer Self Efficacy; TV is a Task Value; DL is Digital Literacy, and PPD is Perception of Online Learning

Furthermore, Table 2 shows the path analysis of the indirect relationship (indirect effect) between the variables of computer self-efficacy, task value, and digital literacy on online learning satisfaction through online learning perceptions. The influence of the computer self-efficacy variable on online learning satisfaction through the perception of online learning has a coefficient of 0.177, which means that the higher the confidence in operating the computer, the higher the student's online learning satisfaction is mediated by the perception of online learning. Then the effect of the task value on the perception of online learning has a coefficient value of 0.176 which means that the higher the task value of students, the higher the satisfaction of online learning if mediated by the perception of online learning.

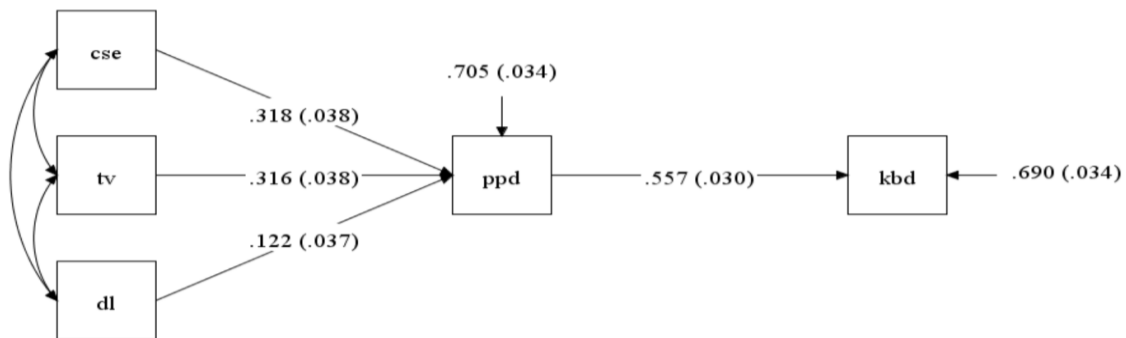
Finally, the influence of digital literacy on the perception of online learning has a coefficient value of 0.068. The higher the digital literacy of students, the better the online learning satisfaction is mediated by the perception of online learning.

All variables are significantly correlated between one variable and another. The correlation between Online Learning Readiness and Computer Self Efficacy, Online Learning Readiness and Task Value, Online Learning Readiness and Digital Literacy, Computer Self Efficacy and Task Value, Computer Self Efficacy and Digital Literacy, and Digital Literacy with Online Learning Perception has a correlation value below 0.5 which means that the correlation is positive but weak. Meanwhile,

Online Learning Readiness and Online Learning Perception correlate 0.5, indicating that the correlation is positive and strong.

All tested paths have significant coefficients at the 0.05 level. The influence of online learning perceptions on online learning satisfaction has a coefficient value of 0.557, indicating that the better students' perceptions of online learning, the higher their online learning satisfaction. Then, the influence of computer self-efficacy on perceptions of online learning has a coefficient value of 0.318, which indicates that the better

students' confidence in using computers, the better the perception of online learning. Furthermore, the effect of the task value on the perception of online learning has a coefficient value of 0.316 which means that the higher the student's task value, the higher the perception of online learning. Finally, the influence of digital literacy on the perception of online learning has a coefficient value of 0.122 which means that the higher students' digital literacy, the better the perception of online learning. Path analysis test data carried out from the model through the online learning perception path has a positive influence with a coefficient value that is not too large



**Figure 1.** Standardized effect of computer self-efficacy (cse), task value (tv), digital literacy (dl) online learning satisfaction (kbd) mediated through online learning perception (ppd).

To see the indirect effect, an indirect effect path analysis was carried out between the variables of computer self-efficacy, task value, and digital literacy on online learning satisfaction through online learning perceptions. The influence of the computer self-efficacy variable on online learning satisfaction through the perception of online learning has a coefficient of 0.177 which means that the higher the confidence in operating the computer, the higher the student's online learning satisfaction is mediated by the perception of online learning. Then the effect of the task value on the perception of online learning has a coefficient value of 0.176 which means that the higher the task value of students, the higher the satisfaction of online learning if mediated by the perception of online learning. Finally, the influence of digital literacy on the perception of online learning has a coefficient value of 0.068 which means that the higher the digital literacy of students, the better the online learning satisfaction is mediated by the perception of online learning. From the fit indices model, it can be concluded that the model fitted with the data.

**5. CONCLUSION**

Online learning activities can undoubtedly have various impacts, one of which is the opinion that online learning activities can be a process of self-development and the expansion of knowledge, which is done in the classroom but can be done outside the classroom with the help of the internet. Thus, students' teaching and learning process is not only done indoors and meets face to face

with lecturers, but can be done anywhere. The digital learning process even though students are now familiar with digital learning tools and resources so that students can follow digital learning well, there are other variables needed, namely task value or can be explained as the value felt by students and learning provided online. Students' perceptions of the importance of teaching materials and their interest in them are considered part of the assignment's value. These four variables, and how students perceive how the online learning process has been accepted so far, will increase student learning satisfaction with online learning activities.

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