

Unveiling the Dynamics of Blended Learning: The Interplay Between Lecturer Competencies and Students' Digital Experience on Student Subjectivity

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ABSTRACT

This research aims to empirically investigate the impact of lecturer competencies, students' digital experience, and self-regulated learning, moderated by digital learning facilities, on students' subjective perceptions of blended learning. The study utilizes an explanatory quantitative approach with a sample of 273 out of a population of 328 students participating in blended learning courses at universities in Lampung Province. Data analysis is performed using the Moderated Regression Analysis (MRA) model, following preliminary tests for normality and reliability. The results indicate a significant influence of these factors on students' subjective perceptions of blended learning. Notably, students' digital experiences—encompassing knowledge, usage, awareness, information-seeking, and information-sharing skills—emerge as the predominant influence, with a coefficient value close to one (0.975). Future research is recommended to assess the effectiveness of blended learning models by integrating face-to-face classroom interactions with Learning Management Systems (LMS), considering the social, cognitive, and affective environments that support student learning.

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1. INTRODUCTION

The Fourth Industrial Revolution, marked by the massive and disruptive development of digital technology, has transformed various aspects of human life, including in the field of education. Facing the challenges and seizing the opportunities offered by this new era, a fundamental transformation in learning methods has become an inevitable necessity. One significant transformation that has occurred is the shift in the learning landscape, particularly in the context of economics education, toward digital technology-based learning (Qohar et al., 2021; Hafeez & Akhter, 2021). This change encompasses a transition from instructor-dominated learning methods to student centered learning methods (Benlahcene et al., 2020), in line with UNESCO (2023) efforts to enhance the quality of education through the utilization of technology, especially in blended learning and online learning strategies.

Economics education, leveraging technology, has undergone a significant paradigm shift through the integration of online and conventional face-to-face learning, known as the blended learning (Tripathi, 2016). Blended Learning in the economic context involves conventional face-to-face meetings with asynchronous virtual content, utilizing various tools such as slides, cases, podcasts, assignment submissions, brief assessments, and asynchronous discussions on platforms (Turner, 2015). The implementation of blended learning in economics is based on a mixed-learning model that is considered an innovation (Arbaugh et al., 2009).

The advancement of information and communication technology has significantly altered teaching methods. In economic education, technology integration has led to the adoption of a blended learning model, as supported by (Wulandari et al., 2019), which states that current learning models are more developed, such as blended learning models with forms of learning that combine face-to-face learning. in class in general which is continued by using the Learning Management System (LMS) application. Learning Management System (LMS) is a digital application or platform designed to facilitate the online learning process. LMS provides features such as learning content management, evaluation, communication, collaboration, and monitoring learning progress. This concept, as explained by (Pima et al., 2016; Nazarenko, 2015), emphasizes that blended learning is a learning process that utilizes LMS design, integrates information and communication technology (ICT) and other resources. The application of LMS-based learning methods is a crucial element in designing blended learning models (Rasmitadila et al., 2020). The use of online platforms in various universities in Indonesia has produced different results (Satyawan et al., 2021).

The success of blended learning models, based on previous research, focuses on objective assessment measures, such as improved learning outcomes. Studies (Husaini et al., 2019; Thamrin et al., 2022) indicate objective measures of learning success, such as increased subject grades, higher-order thinking learning outcomes, and content understanding. Additionally, according to research findings (Rahman et al., 2020; Budhyani et al., 2022), successful blended learning implementation results in improved academic achievements, cooperation, communication, collaboration, basic design, process skills, and overall better performance.

The success measures based on previous research use objective criteria for learning success, academic achievement, and increased student competencies according to their respective abilities. (Darwish, 2015; Perez et al., 2011) explains that assessing success in learning is multidimensional, emphasizing the central aspect of student experiences (Almusharraf & Khahro, 2020). Additionally, (Ginns & Ellis, 2007) highlight that in the context of e-learning, the focus should not only be on technical capacity and material functions in online activities but should also strive to understand participants' perceptions of the experiences gained during the learning process.

Students' subjective views on learning will influence their attitudes during the learning process. Individual interest in learning activities is a result of their subjectivity and will guide their behavior (Howard et al., 2017). According to (Lwoga, 2014), students are inclined to continue using e-learning in their learning activities based on their perceptions. Furthermore, Bandura (1986) states that subjective norms are measures perceived by individuals to perform certain behaviors. In addition, students' perceptions and satisfaction with online learning experiences are important indicators for evaluating the effectiveness and quality of learning in higher education institutions (Shahzad et al., 2021; Abbasi et al., 2020).

In this context, student perceptions regarding the ease and usefulness of technology during their blended learning experiences are influenced by the initial goals of using technology in education. The success is measured through user acceptance and sustained use (Perez et al., 2011). The Theory of Planned Behavior (TPB) is employed to understand the determinants of behavior, particularly the perceived behavioral control (Ajzen, 1985). The use of the Theory of Planned Behavior in investigating perceptions of students in their learning experiences with blended learning is based on a study conducted by Sugeng & Suryani, (2023). This theoretical foundation plays a crucial role in investigating the interest of accounting educators in adopting 21st-century pedagogical principles in online accounting learning.

Environmental factors, such as digital competencies support, system quality, and instructor support, may potentially influence students' perceptions of their blended learning experiences. Digital competencies support by instructors is a crucial factor, especially in a global education context (Instefjord & Munthe, 2016). Professional competencies, as explained by Wulandari et al. (2019), involves the instructor's proficiency in fulfilling their duties, including mastery of the subject matter to be taught along with the methods, and responsibility for their tasks. Additionally, as stated by Apandi & Raman (2020), the role of teachers is identified as a key element in higher education learning.

The success of instructors in implementing technology-based learning is closely related to their ability to operate technology. Inability or low proficiency in using Information and Communication Technology (ICT) can hinder the effectiveness of learning (Sahito & Vaisanen, 2017). Based on the role of instructor competencies in utilizing technology, referring to (Wardoyo et al., 2022), educators use the Learning Management System (LMS) to upload materials created by teachers in PDF, Microsoft Word, and PowerPoint formats available for students to download for independent learning. Furthermore, teachers provide assignments or questions to students online with specified time limits. Additional findings from a study by Perdani & Andayani (2021) reveal that the technological competencies possessed by instructors significantly impacts student readiness to learn. Therefore, instructors are perceived to need competencies in operating information and communication technology, especially in implementing blended learning models.

Cognitive factors, such as students' experiences in using digital technology, are recognized as crucial preparation in e-learning. Without prior experience, technology-based learning may not be effective (Lin & Wang, 2012). This experience can influence digital attitudes, self-confidence, and the quality of student learning. A study by Savara & Parahoo (2018) suggested that students' positive experiences related to their ability to integrate technology into learning positively affect digital attitudes, resulting in stronger self-confidence and influencing learning quality. Other studies indicate that technology-based learning can achieve its learning goals when students have experience overcoming technical difficulties and possess skills in operating computers and navigating the internet (Loukis et al., 2007; Picciano et al., 2012).

Students need to develop affective skills, such as time management and problem-solving, which are integral components of Self-Regulated Learning (SRL) (Zimmerman, 2002). SRL entails focusing on actions aimed at achieving goals through the self-design and monitoring of cognitive and emotional processes during academic tasks (Zimmerman, 2000). These abilities reflect active engagement in learning, encompassing metacognition, motivation, and behavior, which are essential for controlling and managing the learning process (Pons, 2012). Research indicates that students lacking sufficient time management skills may struggle with personal learning responsibilities (Poon, 2013). Eva (2015) asserts that self-regulated learning abilities are crucial for promoting deeper and more meaningful learning among students.

This research aims to analyze students' perceptions of blended learning using social cognitive theory as a theoretical framework. This research seeks to empirically test whether social cognitive theory is proven to influence the perceptions of Economic Education students at universities in the Lampung Province region regarding blended learning, such as lecturer competency, student digital experience, and self-regulated learning, taking into account the digital learning facilities available to students. In this learning model, as a moderating variable, it is possible to strengthen the influence in this relationship. Previous research examined it separately and found that student learning outcomes were influenced by several factors, such as the role of the lecturer, students' technological abilities, and the ability to self-regulate during the learning process, which was related to objective learning outcomes, such as increasing final grades, critical thinking skills, and collaborative skills in learning in general Savara & Parahoo (2018); Poon, (2013); Wulandari et al. (2019). Further identification revealed that previous research did not clearly explain the theoretical basis used, focused on objective measures of learning success, and did not focus on Economics Education students. Therefore, this research aims to fill this gap by identifying learning success based on subjective measures, namely student perceptions of their learning experience using the blended learning model, especially among Economic

Education students, with the basis of social cognitive theory used in determining variables such as lecturer competency, digital experience students, and self-regulated learning. It is important to study students' perceptions of blended learning, especially economics education students. This refers to (Bernard et al., 2004; Moos & Azevedo, 2009). In his explanation, he notes that despite the importance of Blended Learning in the 21st century, the literature shows a lack of emphasis on the economic domain in online-based learning. Therefore, this study aims to address this gap by focusing on students in economics education (Arbaugh et al., 2009).

Furthermore, this study also aims to empirically test whether variables such as digital learning facilities can strengthen the relationship between lecturers' competencies, digital experiences, and self-regulated learning on students' perceptions. Internet access has been recognized as an essential factor in online learning. (Wulandari et al., 2019) revealed that in online learning, the internet enables the creation of networks and connections between students, teachers, learning resources, and other information sources, facilitating a richer and more meaningful learning process. Additionally, previous studies have identified the influence of the Internet on objective learning success, such as improved subject grades and overall learning outcomes, as well as its proven impact in hindering online learning (Hassan, 2020); Miloshevska et al. (2020). In this context, digital learning facilities in the form of internet access are crucial in supporting classroom learning activities followed by the utilization of a learning management system (LMS) outside of class hours. Based on the aforementioned previous research, this study aims to examine whether digital learning facilities are a significant variable that can strengthen the relationship between lecturers' competencies, digital experiences, and self-regulated learning on students' perceptions of blended learning among Economic Education students at universities in the Lampung Province region. In the context of this study, students' perceptions of blended learning are defined as individuals' subjective evaluations of the success of their learning experiences using this learning model.

2. METHODS

This study adopts a quantitative research methodology, emphasizing the collection and analysis of numerical data to generate knowledge. In general, quantitative research involves statistical analysis to confirm and validate hypotheses (Thomas, 2021). The quantitative approach is one of the research methods used to test hypotheses by examining how different factors interact or influence each other.

The research involves a group of respondents, specifically undergraduate students majoring in economic education at a university in Lampung. The respondents consist of students in the 4th, 6th, and 8th semesters, with a total of 273 students. The sample selection is non-random because it includes respondents from specific semesters who have participated in blended learning, which combines in-class instruction with online learning via the Learning Management System (LMS). The sample size is based on complete responses to questionnaires distributed to respondents using Google Form and paper-based questionnaires. Students were asked to fill out the questionnaire, whether using Google Form or paper, with response options on a scale: (5) strongly agree (SA), (4) agree (A), (3) neutral (N), (2) disagree (D), and (1) strongly disagree (SD).

Data collection instruments were used to measure independent, dependent, and moderation variables. The instruments for the teacher competence variable were adopted from (Kabakci et al., 2012), digital experience from (Hong & Kim, 2018), self-regulated learning variable (Zimmerman, 1998), digital learning facilities variable from (Bhuasiri et al., 2012) and student perceptions of blended learning variable from (So & Brush, 2008; Liaw, Huang, & Chen, 2007). The indicators for the research variables utilized in this study are listed in Table 1 below:

Table 1. Indicators of Research Variables

No	Variable	Indicators
1	Teacher Competence (Kabakci et al., 2012),	Designing and implementing learning activities Facilitator of discussions Providing social support Technology facilitator Designing assessments
2	Student Digital Experience (Hong & Kim, 2018),	Application of digital tools Use of digital applications Awareness of digital media Information-seeking skills Sharing information behavior
3	Self-regulated Learning (Zimmerman, 1998),	Goal setting Learning environment conditions/structure Strategies for task or work implementation Time management Seeking help Self-evaluation
4	Digital Learning Facilities (Bhuasiri et al., 2012)	Quality of the internet Availability of the internet
5	Student Perception of Blended Learning (So & Brush, 2008; Liaw, Huang, & Chen, 2007)	Perceived ease by students Perceived benefits by students

All tools used in data collection have been adapted, adjusted, and translated into the Indonesian language. Before implementation, these tools underwent a process of testing, validation, and reliability to ensure the reliability and accuracy of the instruments. A summary of the instrument reliability test results is provided in Table 2 below:

Table 2. Results of the Reliability Test

Variable	Cronbach's Alpha	Description
Competence of Lecturers	0.822	Reliable
Digital Experience	0.783	Reliable
Self-regulated Learning	0.828	Reliable
Student Perception of Blended Learning	0.804	Reliable
Digital Learning Facilities	0.768	Reliable

(Source: Data Processing Results, 2023)

The results of the reliability test indicate that all four variables studied in this research have Cronbach's alpha values ≥ 0.70 . Reliability decision guidelines, according to Chin (1998) and Hair et al. (2014), state that reliability values ≥ 0.70 can be considered as an indication of good reliability.

3. FINDINGS AND DISCUSSION

The results of the moderation regression analysis on the influence of Lecturer Competencies, Students' Digital Experience, and Self-Regulated Learning on economics education students' perceptions of Blended Learning, moderated by the Digital Learning Facilities variable, were evaluated using LISREL 8.8 software. In this study, the findings regarding the model's validity, partial tests, hypothesis tests, and determinant tests will be elaborated upon.

3.1. Model Feasibility Test (F-Test)

Model feasibility test using the F-test is conducted to determine the appropriateness of the constructed linear regression. The calculation results are presented in Table 3 below:

Table 3. Results of Model Feasibility Test (F-Test)

F	Sig	Decision	Conclusion
22.003	0,000	Reject H ₀ and accept H _a	Significant

Source: Data Processing Results 2023

The results in Table 4 show that the Sig F value is < 5% (0.000 < 0.05). Based on the significance of the F value < 0.05, this indicates that the regression model used in this study is feasible. This suggests that independent variables, consisting of lecturer competencies, digital experience, and self-regulated learning, along with the moderating effect of the digital learning facility variable, influence the dependent variable, namely the perception of economics education students about blended learning.

3.2. Data Analysis and Hypothesis Testing

The data analysis in this study utilized multiple linear regression analysis alongside moderated regression analysis (MRA), with the assistance of Lisrel software. The findings from the data analysis are summarized in Table 3 as follows:

Table 4. Results of Moderated Regression Analysis (MRA)

Variable	Coefficient	B	t	Sig t
Constant	-26.777	-0.886	0.376	
Lecturer Competencies (LC)	-0.043	-0.033	-0.113	0.910
Digital Experience (DE)	0.998	0.876	3.022	0.003
Self-Regulated Learning (SRL)	0.407	0.459	3.111	0.002
Digital Learning Facility (DLF)	0.700	0.575	1.244	0.214
LC*DLF	0.007	0.560	1.063	0.289
DE*DLF	-0.013	-0.975	-2.205	0.028
SRL*DLF	-0.002	-0.225	-0.945	0.346

Source: Processed Research Data, 2023

Graphically, hypothesis testing can be presented as follows:

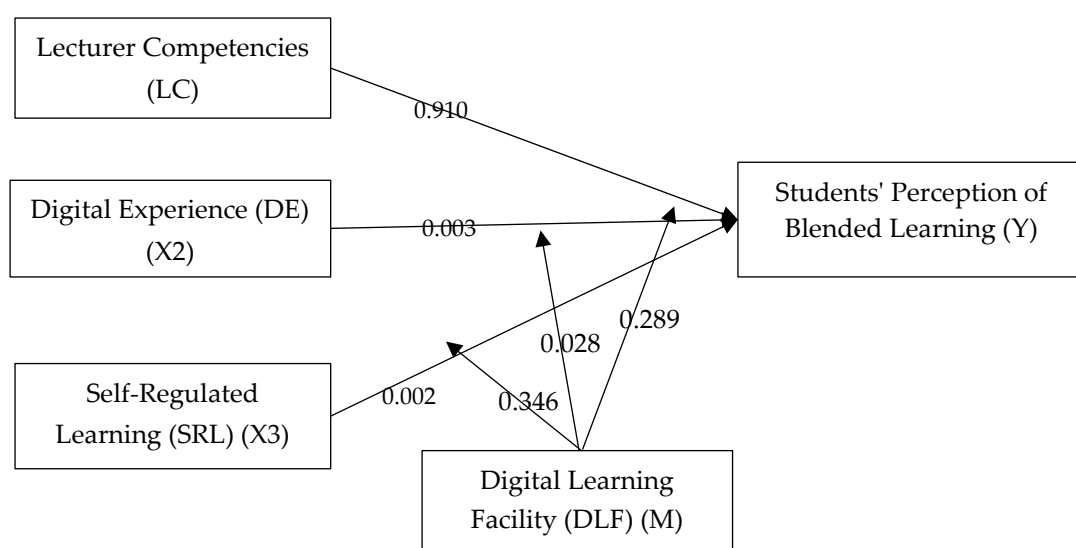


Figure 1. Results of Moderation Regression Analysis

Partial tests are conducted to examine the influence of independent variables on the dependent variable based on statistical significance. Independent variables are deemed to have an impact on the dependent variable if the significance level is less than 0.05. The results of hypothesis testing using the t-test indicate that the independent variables influence the dependent variable in this study. The partial test results can be interpreted as follows:

H1, Lecturer competencies (LC) towards students' perceptions of blended learning (SL)

H4, Lecturer competencies (LC) towards students' perceptions of blended learning (SL) with the moderation of digital learning facilities (DLF)

The analysis results of the lecturer competencies variable show a t-significance value of 0.910, which exceeds the pre-established significance level ($0.910 > 0.05$). This discovery suggests that, in part, the lecturer competencies variable does not significantly affect students' perceptions of blended learning. In simpler terms, the degree of lecturer competencies does not significantly influence how students perceive or assess the implementation of blended learning. In this context, the research rejects Hypothesis 1.

The research findings indicate that the digital learning facilities variable (DLF) does not have a significant influence on students' perceptions of blended learning. With a significance value of 0.214, which is much higher than the pre-established level of significance, i.e., 0.05, this result shows that statistically, there is not enough evidence to support a significant relationship between digital learning facilities and students' perceptions of blended learning. Therefore, Hypothesis 4, which assumes a connection between digital learning facilities and students' perceptions of blended learning, is rejected based on this analysis. Although digital learning facilities may be considered important, there is complexity in other factors that may be more dominant in shaping students' perceptions of the use of blended learning in their educational context. This highlights the need for a deeper understanding of elements that more strongly influence students' perceptions of blended learning.

H2, Digital experience (DE) towards students' perceptions of blended learning (SL)

H5, Digital experience (DE) towards students' perceptions of blended learning (SL) with the moderation of digital learning facilities (DLF)

The research confirms that there is a significant correlation between the digital experience variable and students' perceptions of blended learning. A t-significance value of 0.003, lower than the pre-established level of significance ($0.003 < 0.05$), indicates that the digital experience variable has a significant impact on how students view the use of blended learning. With a positive coefficient of 0.876, this finding indicates that the greater the digital experience students have, the more positively they perceive the use of blended learning. This suggests that digital experience has the potential to be an important factor influencing how students assess and accept the blended learning approach in their learning context.

The research results describe the important role of the digital experience variable in students' perceptions of blended learning with the moderation of learning facilities. A significance value of 0.028 is found, indicating statistical evidence supporting a significant relationship between digital experience and students' perceptions of blended learning with the moderation of learning facilities. Although these results indicate a significant connection, Hypothesis 6, which assumes moderation from the digital learning facilities variable in the relationship between digital experience and students' perceptions of blended learning, must be rejected. The rejection of this hypothesis emphasizes the complexity of other factors that may play a role in moderating the influence of digital experience on students' perceptions of blended learning, highlighting the importance of further research to understand the interaction of variables involved in the context of blended learning.

H3, Self-Regulated Learning (SRL) towards students' perceptions of blended learning (SL)
H6, Self-regulated learning (SRL) towards students' perceptions of blended learning (SL) with the moderation of digital learning facilities (DLF)

The research results indicate a significant influence between the self-regulated learning variable and students' perceptions of blended learning. A significance value of 0.002 indicates that the self-regulated learning variable has a strong influence on how students perceive the use of blended learning. A positive coefficient of 0.459 indicates that the higher the level of self-regulated learning students have, the more positively they perceive blended learning. This finding supports Hypothesis 3 assumed earlier, confirming that self-regulated learning plays an important role in shaping students' perceptions of the use of blended learning in the learning context.

The analysis underscores the impact of self-regulated learning on students' perceptions of blended learning, considering the moderation of digital learning facilities. With a significance value of 0.346, statistically, there isn't sufficient evidence to support a significant relationship between self-regulated learning, students' perceptions of blended learning, and the moderation of digital learning facilities. Consequently, Hypothesis 7, which proposes moderation from digital learning facilities in the relationship between self-regulated learning and students' perceptions of blended learning, must be rejected based on this analysis. This rejection underscores the necessity of examining other variables that might exert a stronger influence on the correlation between self-regulated learning, students' perceptions, and the utilization of technology in blended learning contexts.

3.3. Coefficient of Determination (R²)

To demonstrate how much the independent variables contribute to explaining the variation in the dependent variable. The results of the determination coefficient obtained in this study can be presented in Table 5 as follows:

Table 3. Results of the Determination Coefficient (R²)

Construct	Coefficient of Determination (R-Square Value)	Explanation
students' perceptions of blended learning (Y)	0.368	Moderate

Source: Processed Research Data, 2023

According to the data presented in Table 4.15, the coefficient of determination (R Square) is 0.368, or 36.8%. This value signifies the portion of variance in the dependent variable (students' perceptions of blended learning) that can be elucidated by the independent variables in the model. Hence, approximately 36.8% of the variance in students' perceptions of blended learning can be accounted for by lecturer competencies, students' digital experience, self-regulated learning, and the moderating effect of digital learning facilities examined in this study. These findings offer valuable insights into the extent to which the independent variables contribute to students' perceptions within the framework of blended learning. With a resulting value of 36.8%, the remaining 63.2% is influenced by other variables not investigated in this study.

Discussion

The results of the moderation regression analysis reveal several important insights into the influence of lecturer competencies, students' digital experience, and self-regulated learning on economics education students' perceptions of blended learning, with a particular focus on the moderating role of digital learning facilities. The model feasibility test, conducted using the F-test, indicated a significant model fit ($F = 22.003$, $p < 0.05$), demonstrating the appropriateness of the regression model to examine these relationships (Source: Data Processing Results 2023). This suggests that the independent variables and their interactions with the moderating variable significantly impact

students' perceptions of blended learning. The moderation regression analysis provided nuanced insights into the individual contributions and interactions of these variables. For instance, while lecturer competencies did not show a significant direct effect ($p = 0.910$), both digital experience ($p = 0.003$) and self-regulated learning ($p = 0.002$) were significant predictors of students' perceptions. The moderation effect of digital learning facilities was significant for digital experience ($p = 0.028$), indicating that the digital infrastructure plays a role in how students' prior digital experiences shape their perceptions of blended learning.

Further analysis revealed the complexity of these interactions. The rejection of hypotheses concerning the moderation effects of digital learning facilities on lecturer competencies and self-regulated learning ($p > 0.05$ for both) suggests that these relationships are influenced by other factors not accounted for in the model. The coefficient of determination ($R^2 = 0.368$) indicates that approximately 36.8% of the variance in students' perceptions of blended learning can be explained by the studied variables, with the remaining 63.2% potentially influenced by other unexamined factors (Source: Processed Research Data, 2023). This highlights the multifaceted nature of students' perceptions and underscores the importance of considering additional variables in future research. These findings align with previous studies that emphasize the critical role of digital experience in technology-enhanced learning environments (Alammary et al., 2019; Wang et al., 2020), while also pointing to the need for a broader exploration of factors influencing blended learning perceptions (Chen & Jang, 2010). Overall, this study provides valuable insights into the dynamics of blended learning perceptions, contributing to the growing body of literature on educational technology and student engagement.

4. CONCLUSION

This research concludes that faculty competence and digital learning facilities do not primarily influence economics education students' perceptions of blended learning. Instead, students' digital experience and self-regulated learning abilities have a more significant impact, underscoring the need to prioritize these factors in developing effective blended learning strategies. The findings suggest a comprehensive approach to designing blended learning programs, emphasizing the enhancement of students' digital experiences and self-regulated learning to ensure a satisfying educational journey. By challenging the assumption that faculty competence and digital learning facilities are the main determinants, this study highlights the complexity of factors shaping students' perspectives on blended learning. Therefore, development strategies should be based on a deep understanding of students' needs and preferences regarding their digital experience and self-regulated learning. Additionally, the importance of fostering students' interactions and self-directed learning management in utilizing technology within blended learning calls for educators and curriculum developers to understand individual student dynamics thoroughly to create a supportive and motivating learning environment.

The research is limited by its specific focus on economics education students in Lampung Province, which may not be generalizable to other contexts or disciplines. Future research should methodologically analyze the success of blended learning models, integrating traditional face-to-face learning with Learning Management Systems (LMS) while considering the supportive social, cognitive, and affective environments for students. Such an approach would provide a more comprehensive and nuanced understanding, complementing the quantitative findings of this study.

REFERENCES

- Ajzen, Icek. (1985). From intentions to actions: a theory of planned behavior. *Action Control*, 11–39.
- Alammary, A., Sheard, J., & Carbone, A. (2019). Blended learning in higher education: Three different design approaches. *Australasian Journal of Educational Technology*, 30(4), 440-454.
- Almusharraf, N. M., & Khahro, S. H. (2020). Students' Satisfaction with Online Learning Experiences during the COVID-19 Pandemic. *International Journal of Emerging Technologies in Learning*, 15(21), 246–267. <https://doi.org/10.3991/ijet.v15i21.15647>

- Alobiedat, A., & Saraierh, R. (2010). The student's attitude toward use platform as learning resources at university of Granada. *Review of European Studies*, 2(2), 236–244.
<https://doi.org/10.5539/res.v2n2p236>
- Analisis, K. M. (2015). Strategi Self Regulated Learning dan Prestasi Belajar: Kajian Meta Analisis. *Jurnal Psikologi*, 37(1), 110 – 129–129. <https://doi.org/10.22146/jpsi.7696>
- Apandi, A. M., & Raman, A. (2020). Factors Affecting Successful Implementation of Blended Learning at Higher Education. *Technology, and Social Sciences (IJITSS)*, 1(1), 13–23. Retrieved from www.ijitsc.net
- Arbaugh, J. B., Godfrey, M. R., Johnson, M., Pollack, B. L., Niendorf, B., & Wresch, W. (2009). Research in online and blended learning in the business disciplines: Key findings and possible future directions. *Internet and Higher Education*, 12(2), 71–87. <https://doi.org/10.1016/j.iheduc.2009.06.006>
- Bandura, A. (1986). Fearful expectations and avoidant actions as coefficients of perceived self-inefficacy. *American Psychologist*, 41(12), 1389–1391. <https://doi.org/10.1037//0003-066x.41.12.1389>
- Benlahcene, A., Lashari, S. A., Lashari, T. A., Shehzad, M. W., & Deli, W. (2020). Exploring the perception of students using student-centered learning approach in a Malaysian public university. *International Journal of Higher Education*, 9(1), 204–217.
<https://doi.org/10.5430/ijhe.v9n1p204>
- Bernard, R. M., Brauer, A., Abrami, P. C., & Surkes, M. (2004). The development of a questionnaire for predicting online learning achievement. *International Journal of Phytoremediation*, 25(1), 31–47.
<https://doi.org/10.1080/0158791042000212440>
- Bhuasiri, W., Xaymoungkhoun, O., Zo, H., Rho, J. J., & Ciganek, A. P. (2012). Critical success factors for e-learning in developing countries: A comparative analysis between ICT experts and faculty. *Computers and Education*, 58(2), 843–855. <https://doi.org/10.1016/j.compedu.2011.10.010>
- Budhyani, I. D. A. M., Candiasa, M., Sutajaya, M., & Nitiasih, P. K. (2022). The effectiveness of blended learning with combined synchronized and unsynchronized settings on self-efficacy and learning achievement. *International Journal of Evaluation and Research in Education*, 11(1), 321–332.
<https://doi.org/10.11591/ijere.v11i1.22178>
- Chen, K. C., & Jang, S. J. (2010). Motivation in online learning: Testing a model of self-determination theory. *Computers in Human Behavior*, 26(4), 741–752.
- Ginns, P., & Ellis, R. (2007). Quality in blended learning: Exploring the relationships between on-line and face-to-face teaching and learning. *Internet and Higher Education*, 10(1), 53–64.
<https://doi.org/10.1016/j.iheduc.2006.10.003>
- Hafeez, M., & Akhter, Y. (2021). Effects of Blended Learning in Comparison of Traditional Learning to Provide Safer Learning Environment- A Comparative Review. *International Journal of Educational Research & Social Sciences*, 2(6), 1604–1615. <https://doi.org/10.51601/ijersc.v2i6.209>
- Hargis, J. (2000). The Self-Regulated Learner Advantage: Learning Science on the Internet. *Electronic Journal of Science Education*, 4(4), 1–7. Retrieved from <http://search.proquest.com/docview/62233544?accountid=4840>
- Hassan, W. (2020). COVID-19 Pandemic: Langkawi Vocational College Student Challenge in Using Google Classroom for Teaching and Learning (T&L). *International Journal of Advanced Trends in Computer Science and Engineering*, 9(3), 3299–3307. <https://doi.org/10.30534/ijatcse/2020/127932020>
- Himanshu Tripathi. (2016). Effectiveness of Blended Learning Using LMS-Edmodo in Teaching Economics at Higher Secondary Level. *International Journal of Indian Psychology*, 3(3).
<https://doi.org/10.25215/0303.180>
- Hong, A. J., & Kim, H. J. (2018). College Students' Digital Readiness for Academic Engagement (DRAE) Scale: Scale Development and Validation. *Asia-Pacific Education Researcher*, 27(4), 303–312. <https://doi.org/10.1007/s40299-018-0387-0>
- Howard, R., Restrepo, L., & Chang, C. Y. (2017). Addressing individual perceptions: An application of the unified theory of acceptance and use of technology to building information modelling. *International Journal of Project Management*, 35(2), 107–120.
<https://doi.org/10.1016/j.ijproman.2016.10.012>

- Husaini, A., Syarifuddin, H., & Usmani, U. (2019). The Practicality of Learning Devices Cooperative Models Based on Blended Learning to Improve Learning Outcomes of 10th-Grade MA Students. *International Journal of Trends in Mathematics Education Research*, 2(3), 157–160. <https://doi.org/10.33122/ijtmr.v2i3.121>
- Instefjord, E., & Munthe, E. (2016). Preparing pre-service teachers to integrate technology: an analysis of the emphasis on digital competence in teacher education curricula. *European Journal of Teacher Education*, 39(1), 77–93. <https://doi.org/10.1080/02619768.2015.1100602>
- Kabakci Yurdakul, I., Odabasi, H. F., Kilicer, K., Coklar, A. N., Birinci, G., & Kurt, A. A. (2012). The development, validity and reliability of TPACK-deep: A technological pedagogical content knowledge scale. *Computers and Education*, 58(3), 964–977. <https://doi.org/10.1016/j.compedu.2011.10.012>
- Kember, D., McNaught, C., Chong, F. C. Y., Lam, P., & Cheng, K. F. (2010). Understanding the ways in which design features of educational websites impact upon student learning outcomes in blended learning environments. *Computers and Education*, 55(3), 1183–1192. <https://doi.org/10.1016/j.compedu.2010.05.015>
- Liaw, S. S., Huang, H. M., & Chen, G. D. (2007). Surveying instructor and learner attitudes toward e-learning. *Computers and Education*, 49(4), 1066–1080. <https://doi.org/10.1016/j.compedu.2006.01.001>
- Lin, W. S., & Wang, C. H. (2012). Antecedences to continued intentions of adopting e-learning system in blended learning instruction: A contingency framework based on models of information system success and task-technology fit. *Computers and Education*, 58(1), 88–99. <https://doi.org/10.1016/j.compedu.2011.07.008>
- López-Pérez, M. V., Pérez-López, M. C., & Rodríguez-Ariza, L. (2011). Blended learning in higher education: Students' perceptions and their relation to outcomes. *Computers and Education*, 56(3), 818–826. <https://doi.org/10.1016/j.compedu.2010.10.023>
- Loukis, E., Georgiou, S., & Pazalos, K. (2007). A value flow model for the evaluation of an e-learning service. *Proceedings of the 15th European Conference on Information Systems, ECIS 2007*, 370–382.
- Lwoga, E. (2014). Critical success factors for adoption of web-based learning management systems in Tanzania. *International Journal of Education and Development Using Information and Communication Technology (IJEDICT)*, 10(1), 4–21.
- Lwoga, E. T. (2014). Critical success factors for adoption of web-based learning management systems in Tanzania. In *International Journal of Education and Development using Information and Communication Technology (IJEDICT)* (Vol. 10).
- Magolda, M. B. B., & Astin, A. W. (1993). What “Doesn’t” Matter in College? *Educational Researcher*, 22(8), 32. <https://doi.org/10.2307/1176821>
- Miloshevska, L., Gajek, E., Dzanić, N. D., & Hatipoğlu, Ç. (2020). Emergency online learning during the first Covid-19 period: Students' perspectives from Bosnia and Herzegovina, North Macedonia, Poland and Turkey. *ExELL*, 8(2), 110–143. <https://doi.org/10.2478/exell-2021-0002>
- Moos, D. C., & Azevedo, R. (2009). Learning with computer-based learning environments: A literature review of computer self-efficacy. *Review of Educational Research*, 79(2), 576–600. <https://doi.org/10.3102/0034654308326083>
- Nazarenko, A. L. (2015). Blended Learning vs Traditional Learning: What Works? (A Case Study Research). *Procedia - Social and Behavioral Sciences*, 200(October), 77–82. <https://doi.org/10.1016/j.sbspro.2015.08.018>
- Nikmah, F., Hermawan, A., Wardoyo, C., & Hasan, H. (2021). TOE PERSPECTIVE: TECHNOLOGY ADOPTION BY SMEs IN FACING THE INDUSTRIAL REVOLUTION 4.0. *European Journal of Business, Economics and Accountancy*, 9(1), 2021. Retrieved from www.idpublications.org
- Perdani, B. U. M., & Andayani, E. S. (2021). Pengaruh Kemampuan Technological Pedagogical Content Knowledge (Tpack) Terhadap Kesiapan Menjadi Guru. *Jurnal Pendidikan Akuntansi Indonesia*, 19(2), 99–115. <https://doi.org/10.21831/jpai.v19i2.46021>
- Picciano, A. G., Seaman, J., Shea, P., & Swan, K. (2012). Examining the extent and nature of online

- learning in American K-12 Education: The research initiatives of the Alfred P. Sloan foundation. *Internet and Higher Education*, 15(2), 127–135. <https://doi.org/10.1016/j.iheduc.2011.07.004>
- Pima, J. M., Odetayo, M., Iqbal, R., & Sedoyeka, E. (2016). Assessing the available ICT infrastructure for collaborative web technologies in a blended learning environment in Tanzania: A mixed methods research. *International Journal of Education & Development Using Information & Communication Technology*, 12(1), 37–52. Retrieved from <http://search.ebscohost.com/login.aspx?direct=true&db=eue&AN=115161972&lang=es&site=ehost-live%5Cnhttp://content.ebscohost.com/ContentServer.asp?T=P&P=AN&K=115161972&S=R&D=eue&EbscoContent=dGJyMNLe80Sep7Y4v%2BvIOLCmr06ep7FSsKq4SrKWxWXS&ContentCustomer=dGJ>
- Poon, J. (2013). Multimedia education resource for learning and onlineteching (MERLOT) Blended learning: An institutional approach for enhancingstudents' learning experiences. *Journal of Online Learning and Teaching*, 9(2), 271–288. Retrieved from <http://hdl.handle.net/10536/DRO/DU:30057995>
- Qohar, A., Susiswo, Nasution, S. H., & Wahyuningsih, S. (2021). Development of Android-Based Mathematics Learning Game on the Topic of Congruence and Similarity. *International Journal of Interactive Mobile Technologies*, 15(9), 52–69. <https://doi.org/10.3991/ijim.v15i09.20723>
- Rahman, Z., Rijanto, T., Basuki, I., & Sumbawati, M. S. (2020). The Implementation of Blended Learning Model on Motivation and Students' Learning Achievement. *International Journal for Educational and Vocational Studies*, 2(9), 767–775. <https://doi.org/10.29103/ijevs.v2i9.2694>
- RamadanDarwish, N., & M. Rizk, N. (2015). Multi-Dimensional Success Factors of Agile Software Development Projects. *International Journal of Computer Applications*, 118(15), 23–30. <https://doi.org/10.5120/20823-3453>
- Rasmitadila, Widyasari, Humaira, M. A., Tambunan, A. R. S., Rachmadtullah, R., & Samsudin, A. (2020). Using blended learning approach (BLA) in inclusive education course: A study investigating teacher students' perception. *International Journal of Emerging Technologies in Learning*, 15(2), 72–85. <https://doi.org/10.3991/ijet.v15i02.9285>
- Sahito, Z., & Vaisanen, P. (2017). Effect of ICT Skills on the Job Satisfaction of Teacher Educators: Evidence from the Universities of the Sindh Province of Pakistan. *International Journal of Higher Education*, 6(4), 122. <https://doi.org/10.5430/ijhe.v6n4p122>
- Satyawan, I. M., Wahjoedi, W., & Swadesi, I. K. I. (2021). The Effectiveness of Online Learning Through Undiksha E-Learning During the Covid-19 Pandemic. *Journal of Education Technology*, 5(2), 191. <https://doi.org/10.23887/jet.v5i2.32364>
- Savara, V., & Parahoo, S. (2018). Unraveling determinants of quality in blended learning: are there gender-based differences? *International Journal of Quality and Reliability Management*, 35(9), 2035–2051. <https://doi.org/10.1108/IJQRM-11-2017-0233>
- So, H. J., & Brush, T. A. (2008). Student perceptions of collaborative learning, social presence and satisfaction in a blended learning environment: Relationships and critical factors. *Computers and Education*, 51(1), 318–336. <https://doi.org/10.1016/j.compedu.2007.05.009>
- Sugeng, B., & Suryani, A. W. (2023). Using the theory of planned behaviour to investigate Indonesian accounting educators' pedagogical strategies in online delivery. *Accounting Education*, 1–29. <https://doi.org/10.1080/09639284.2023.2168127>
- Thamrin, T., Saidun Hutasuhut, Aditia, R., & Putri, F. R. (2022). The Effectiveness of the Hybrid Learning Materials with the Application of Problem Based Learning Model (Hybryd-PBL) to Improve Learning Outcomes during the COVID-19 Pandemic. *IJORER : International Journal of Recent Educational Research*, 3(1), 124–134. <https://doi.org/10.46245/ijorer.v3i1.178>
- Thomas, G. C. (2021). Research Methodology and Scientific Writing. In *Research Methodology and Scientific Writing*. <https://doi.org/10.1007/978-3-030-64865-7>
- Turner, Y. (2015). Last orders for the lecture theatre? Exploring blended learning approaches and accessibility for full-time international students. *International Journal of Management Education*,

- 13(2), 163–169. <https://doi.org/10.1016/j.ijme.2015.04.001>
- UNESCO. (2023). *UNESCO: Professional Development for Teachers for Blended Learning and Online Strategies - Pilot Project*. Available at: <https://en.unesco.org/online-teacher-capacity-training> (accessed 12 December 2023). (December), 2023.
- Wang, Q., Woo, H. L., & Zhao, Y. (2020). Investigating the effects of self-regulated learning in MOOCs. *Journal of Educational Technology & Society*, 23(2), 1-11.
- Wardoyo, C., Satrio, Y. D., & Kusuma, C. (2022). the Perception and Application of Blended Learning As a Learning Alternative in the Industry 4.0 Era. *Refleksi Edukatika : Jurnal Ilmiah Kependidikan*, 13(1), 28–35. <https://doi.org/10.24176/re.v13i1.6906>
- Wulandari, D., Shandy Narmaditya, B., Hadi Utomo, S., & Hilmi Prayi, P. (2019). Teachers' Perception on Classroom Action Research. *KnE Social Sciences*, 3(11), 313. <https://doi.org/10.18502/kss.v3i11.4015>
- Zimmerman, B. J. (1998). Academic studying and the development of personal skill: A self-regulatory perspective. *Educational Psychologist*, 33(3), 73–86. <https://doi.org/10.1080/00461520.1998.9653292>
- Zimmerman, B. J. (2000). Chapter 2: Attending self-regulation A social cognitive perspective. *Handbook of Self-Regulation*, 13–39.
- Zimmerman, B. J. (2002). Zimmerman - 2002 - *Becoming a Self-Regulated Learner An Overview*. 41(2), 64–70.