Vol. 13, No. 2, April 2024, pp. 682~692

ISSN: 2252-8822, DOI: 10.11591/ijere.v13i2.26619

Student's acceptance of the Nearpod application: an investigation in elementary school

Rizky Amelia¹, Zamzani², Ali Mustadi³, Ahmad Suriansyah¹, Aslamiah¹

Department of Elementary School Teacher Education, Faculty of Teacher Training and Education, Universitas Lambung Mangkurat, Banjarmasin, Indonesia

²Department of Indonesian Language Education, Faculty of Language and Art, Yogyakarta State University, Yogyakarta, Indonesia ³Department of Primary Education, Faculty of Education and Psychology, Yogyakarta State University, Yogyakarta, Indonesia

Article Info

Article history:

Received Jan 18, 2023 Revised Aug 30, 2023 Accepted Sep 28, 2023

Keywords:

Digital learning Elementary school Nearpod application Student's acceptance UTAUT 2 model

ABSTRACT

The use of technology can increase teacher innovation in carrying out mass learning. Innovations that can standardize in terms of media use or digital supporting devices that reduce the learning barrier and help students succeed. One of the components of multimedia-based learning media is the Nearpod application. This research aims to ascertain the purpose and behavior of primary school pupils utilizing the Nearpod application via an extension of the unified theory of acceptance and use of technology 2 (UTAUT 2) model. The researchers employed a quantitative research method by distributing questionnaires to 217 students at Public Elementary School (SDN) 004 Tanjung Redeb, Berau Regency, East Kalimantan, Indonesia. Data from this study were analyzed using partial least square structural equation modeling (PLS-SEM). The findings revealed that behavioral intention (BI) is significantly positively influenced by hedonic motivation (HM), habit (H), and habitual behavior (HB). In addition, habit (H) also has a significant positive effect on use behavior (UB). It can conclude this study can explain that the adoption of technology in the elementary school environment has different causal factors.

This is an open access article under the CC BY-SA license.



682

Corresponding Author:

Rizky Amelia

Department of Elementary School Teacher Education, Universitas Lambung Mangkurat Brigjend Hasan Basry street, Kayu Tangi, 70123, Banjarmasin, Indonesia

Email: rizkyamelia@ulm.ac.id

1. INTRODUCTION

The 21st-century technological era is an era that makes it easier for humans to interact with each other. Humans can engage and communicate through sophisticated devices that are developing today [1]. These devices such as laptops, smartphones, and computers are connected to the internet network and further can connect people worldwide. Thus, the condition of technological era of the 21st century has its opportunities and challenges [2], [3]. One of the opportunities and challenges experienced in the advancement of 21st-century technology is related to the field of education [4], opportunities related to teaching and learning innovation as well as opportunities and innovations in learning assessment [5]. The contribution of technological advances in the 4.0 era and society 5.0 is challenging for teachers, especially in learning by integrating technological skills. Teachers must be able to get to know technology, apply technology, and develop learning products that integrate technology [6], [7]. These three things can be one of the keys to successful learning in the 21st century.

The use of technology can massively increase teacher innovation in carrying out learning [8]. Innovations that can be standardized, for example, in media use or digital supporting devices, make it easier for students to comprehend the material. Teachers can develop android-based media, digital multimedia, or the

development of presentation materials from Power Points and Prezi [9], [10]. Teachers can innovate learning through digital games. Teachers will maximize technological potential if they are able to employ them wisely and optimally. Digitally packaged instructional resources facilitate student learning, increase activities, and have implications for student motivation. Innovative teaching materials are also able to increase the creativity of teachers and students in the classroom [11], students are not easily bored [12], train student independence [13], tend to utilize their gadgets in a more helpful direction [14], and boost technological skills [15].

In education, the influence of the COVID-19 epidemic has been felt, one of which is the use of technological devices and digital learning as a form of adaptation to online learning [16]. Elementary schools have adopted and adapted new learning habits by integrating technology into learning holistically. Teachers can utilize digital technology optimally through digital literacy of synchronous virtual face-to-face learning, asynchronous learning, and blended learning [17], [18]. The results of the field observations showed that, on average, 80-90% found that elementary school students learning independence are still deficient, because students still need a lot of guidance [19]. Furthermore, the pandemic period affected an average of 80% of their learning motivation because learning did not contribute to the heterogeneity of students' modalities or learning styles [20]. The use of online education is also able to accommodate a person's learning style, even able to accommodate a variety of different learning styles [21]. The presence of digital facilities with various features and advantages can provide freedom to students or users to learn according to their wishes [22]. Using online learning as a form of digitization in learning can improve learning strategies carried out by teachers [23]. In addition, teachers and students are also required to be better prepared for learning skills in the 21st-century era [24].

One of the facts in primary education is that teachers have limited knowledge in developing learning tools, especially digital teaching materials. Teachers are not used to using digital teaching materials and have never even developed teaching materials that are packaged digitally to make it easier to carry out online learning [25], [26]. Teachers at the primary school level do not yet fully have the skills to use technology in teaching. That is due to the transformation of face-to-face learning towards virtual learning, so teachers need to adapt again to learning methods that are tailored to their needs [27].

In addition, various factors can encourage students' interest in the learning process in the classroom including complex material when learned, boring learning styles, and unpleasant learning media [28]. A lack of interest in learning can result in a person's interest in a particular subject, and it can even reduce attitudes of rejection toward teachers [29]. Teaching materials that are still glued only to books whose presentation of the material is dense, the appearance is unattractive, the number of questions and the tasks given by the teacher cause students to be saturated in learning [30]. Student satisfaction is a positive behavior over the facilities of the learning and teaching system implemented by the teacher. There needs to be a similarity between what is expected and the reality it receives. The students will feel satisfied if the accepted teaching and learning mechanism facilities are exactly what the students desire. If the service received is unsuitable, students will not utilize it [31].

Media can assist the educational process and facilitate students to easily understand the learning [32]. Learning media have their characteristics according to their functions. These characteristics can be classified into several types. Various learning media are classified into four parts: i) audio media is media in the form of sound presentation, such as radio or sound recordings; ii) visual media is a medium related to eye function, such as describing various images related to the material; iii) audio-visual media, namely media that combines elements of sound and image in one unit; iv) and multimedia, i.e., media that relates all human senses such as three-dimensional models [33]. One of the components of multimedia-based learning media is the Nearpod application [34].

Nearpod application learning media is a tool teachers can use to teach science subject content and other subject contents [35]. Nearpod is an online educational tool that serves and manages interactions while regulating learning knowledge [36]. One of the particular uses of the Nearpod application is to support the activeness of students learning more actively in class in teaching and learning sessions with various features provided by Nearpod to involve students in a class [34]. Therefore, Nearpod can be a solution to increasing student interaction and participating directly and supporting teaching materials that can be accessed using smartphones, tablets, and laptops [37]. Another study suggests that digital technology in learning is fun and attracts students, thus fostering attitudes and interests in using technology in the learning process [38].

This study experimented to determine the intention and behavior of using the Nearpod application from elementary school students in Indonesia using an extension of the unified theory of acceptance and use of technology (UTAUT) model. One of Venkatesh's most recent technology acceptance model is UTAUT [39]. Eight of the most popular ideas on how technology is accepted are combined into one concept called UTAUT. The UTAUT model explains how users behave when using technology [40]. This model synthesizes eight previously existing practical concepts. Effort expectancy (EE), social impact (SI), facilitating conditions (FC), and Performance Expectancy (PE) are the main constructs that influence user behavior (UB) and behavioral intention (BI) of information technology [41]. The UTAUT model was chosen as the primary research model. It is considered a theory of technological acceptance that has been update, relevant, and well-developed by the

present researchers because it combines previously recognized theories of technical approval [42]. Then, Venkatesh also developed the UTAUT method under the name UTAUT2. The extension of this study is a UTAUT2-based model coupled with two new factors, namely the Nearpod Design and Parental Assistance. These two factors are added to understand user behavior based on the characteristics of elementary students.

This study intends to carry out an identification process related to factors that affect student acceptance of Nearpod applications in elementary school students. This study proposes a UTAUT2-based extension model. Price Value was not listed because the Nearpod application used was free. In addition, moderation factors were also not considered in this study because this study only aimed to find out the factors that determine user acceptance. The hypotheses of the study are: Performance expectation (PE) strongly influences behavioral intention (BI) favorably (H1); E-learning (Nearpod) design (ED) has a substantial beneficial influence on behavioral intention (H2); Effort expectancy (EF) strongly influences behavioral intention favorably (H3); Habit (H) has a substantial, positive influence on behavioral intention (H4); Social influence (SI) significantly positively affects behavioral intention (H5); Hedonic motivation (HM) significantly positively affects behavioral intention (H6); Parental assistance (PA) significantly beneficial effects behavioral intention (H7); Facilitating conditions (FC) significantly beneficial affect behavioral intention (H8); Behavioral intention considerably influences use behavior (UB) (H9); Facilitating conditions alter use behavior in a considerably beneficial way (H10); Habit (H) considerably influences use behavior favorably (H11); and Parental assistance (PA) has a substantial, favorable effect on use behavior (H12).

2. RESEARCH METHOD

2.1. Questionnaire design

This study applied a quantitative method with online surveys. The questionnaire built into the study consisted of two parts. In the first part of the test, participants were asked basic personal details like their names, ages, genders, and educational backgrounds. The questionnaire included 37 items on the Lickert scale. These 37 items are a compilation of previous UTAUT2 research questions and some research related to parental support in education and Nearpod application design for students. References to questionnaire items are listed in Table 1. From the collection of questionnaire items, 37 indicators or questionnaire items were obtained that were used in the study.

Table 1. Questionnaire item reference

No	Questionnaire items	Reference
1	Behavioral intention (BI)	[43]
2	Use behavior (UB)	[41]
3	Performance expectancy (PE)	[39], [43], [44]
4	Social influence (SI)	[43]
5	E-learning design (ED)	[35], [45]
6	Facilitating condition (FC)	[39], [43]
7	Parental assistance (PA)	[46], [47]
8	Effort expectancy (EE)	[48]
9	Habit (H)	[49]
10	Hedonic motivation (HM)	[50]

2.2. Data collection

Data collection in this study used Public Elementary School (SDN) 004 Tanjung Redeb, Berau Regency, East Kalimantan, Indonesia as the case study's target. The respondents were elementary school students of SDN 004 Tanjung Redeb consisting of students in grades 1–6 of elementary school. SDN 004 Tanjung Redeb was chosen as a study participant because this school implemented the Nearpod application as a learning medium during the Covid-19. Questionnaires to collect the data of this study were distributed offline with the help of the teachers.

2.3. Data analysis techniques

Partial least square structural equation modeling (PLS-SEM) was the method of data analysis employed in this research. The statistical modeling method known as structural equation modeling, or SEM, has universal and linear features [51]. Included in SEM include factor analysis, regression, and path analysis. One of the models of SEM is PLS-SEM. The researchers used the PLS-SEM method since it is more suitable for predicting key constructs and validating an extension of a pre-existing theory [52]. In PLS-SEM, the model is divided into outer and inner models. The internal model, or structural model, is a part that serves to display the relationship between constructions or factors to be evaluated. The outer or measurement model assesses

the relationship between indicator variables and related constructions [53]. It was carried out in three stages to test the outer model, namely, the evaluation of loading factor values, convergent validity, and construct reliability. Meanwhile, the assessment of the inner model was carried out by conducting a coefficient of determination test.

3. RESULTS AND DISCUSSION

After collecting data using an online questionnaire that was open for one month, this study found 217 respondents who were considered valid. The respondents were first- through sixth-grade elementary school pupils from SDN 004 Tanjung Redeb. This study employed the PLS-SEM method to analyze the data obtained with the help of the SmartPLS 3 application. The researchers chose this method because PLS-SEM is more suitable for predicting critical constructions and validating an existing model extension. The analysis process was carried out through three stages: testing the model's reliability and validity, measuring the coefficient of determination (R2), and testing hypotheses. The profiles of the respondents are in Table 2.

Table 2. Respondent profile

Category	Information	Sum	Percentage
Grade	1	20	9.22%
	2	18	8.29%
	3	31	14.29%
	4	33	15.21%
	5	60	27.65%
	6	55	25.35%
Gender	Male	102	47%
	Female	115	53%
Age (years)	6	5	2.30%
	7	16	7.37%
	8	15	6.91%
	9	31	14.29%
	10	36	16.59%
	11	65	29.95%
	12	45	20.74%
	13	4	1.84%

3.1. Reliability and validity testing

The first step to measuring a model's reliability and validity was to measure each indicator's loading factor. An indicator must have a loading factor greater than 0.5 to be considered valid. According to previous study, indicators with a loading factor of <0.5 should be discarded [54]. The test results of the model's loading factor value are listed in Table 3.

Table 3. Evaluation of loading factor value

Table 3. Evaluation of loading factor value					
Indicators	Loading factor	Results	Indicators	Loading factor	Results
Behavioral Intention 1 (BI1)	0.832		Effort Expectancy 2 (EE2)	0.739	$\sqrt{}$
Behavioral Intention 2 (BI2)	0.768		Effort Expectancy 3 (EE3)	0.672	$\sqrt{}$
Behavioral Intention 3 (BI3)	0.745		E-learning Design 1 (ED1)	0.881	$\sqrt{}$
Behavioral Intention 4 (BI4)	0.869		E-learning Design 2 (ED2)	0.853	$\sqrt{}$
Performance Expectancy 1 (PE1)	0.645		E-learning Design 3 (ED3)	0.664	$\sqrt{}$
Performance Expectancy 2 (PE2)	0.836	$\sqrt{}$	E-learning Design 4 (ED4)	0.492	X
Performance Expectancy 3 (PE3)	0.749		E-learning Design 5 (ED5)	0.827	$\sqrt{}$
Performance Expectancy 4 (PE4)	0.806	$\sqrt{}$	Habit 1 (H1)	0.661	
Use Behavior 1 (UB1)	0.896		Habit 2 (H2)	0.769	$\sqrt{}$
Use Behavior 2 (UB2)	0.65	$\sqrt{}$	Habit 3 (H3)	0.774	
Use Behavior 3 (UB3)	0.687		Habit 4 (H4)	0.828	$\sqrt{}$
Facilitating Condition 1 (FC1)	0.7	$\sqrt{}$	Parental Assistance 1 (PA1)	0.782	
Facilitating Condition 2 (FC2)	0.654		Parental Assistance 2 (PA2)	0.753	$\sqrt{}$
Facilitating Condition 3 (FC3)	0.694	$\sqrt{}$	Parental Assistance 3 (PA3)	0.706	
Facilitating Condition 4 (FC4)	0.638		Parental Assistance 4 (PA4)	0.754	$\sqrt{}$
Hedonic Motivation 1 (HM1)	0.893	$\sqrt{}$	Parental Assistance 5 (PA5)	0.427	X
Hedonic Motivation 2 (HM2)	0.89	\checkmark	Social Influence 1 (SI1)	0.813	$\sqrt{}$
Hedonic Motivation 3 (HM3)	0.888		Social Influence 2 (SI2)	0.873	$\sqrt{}$
Effort Expectancy 1 (EE1)	0.741	\checkmark			

Information: Valid ($\sqrt{}$) and Invalid (X)

Table 3 shows that out of 37 indicators, two are considered invalid because they have a loading factor value less than 0.5, namely the ED4 indicator with an extreme loading value of 0.492 and PA5 with an extreme loading value of 0.427. According to the assessment criteria of the PLS-SEM method, indicators considered invalid should be omitted from the model because they could not measure their constructs or latent associated variables [53]. The elimination of indicators was continued by re-estimation. The results of retesting the loading factor of the model are in Table 4.

Table 4. Results of re-estimating the value of the loading factor

rable 4. Results of re-estimating the value of the loading factor						
Indicators	Loading factor	Results	Indicators	Loading factor	Results	
Behavioral Intention 1 (BI1)	0.832	V	Effort Expectancy 2 (EE2)	0.739		
Behavioral Intention 2 (BI2)	0.768	\checkmark	Effort Expectancy 3 (EE3)	0.672	\checkmark	
Behavioral Intention 3 (BI3)	0.745	\checkmark	E-learning Design 1 (ED1)	0.881	\checkmark	
Behavioral Intention 4 (BI4)	0.869	\checkmark	E-learning Design 2 (ED2)	0.853	\checkmark	
Performance Expectancy 1 (PE1)	0.645	\checkmark	E-learning Design 3 (ED3)	0.664	\checkmark	
Performance Expectancy 2 (PE2)	0.836	\checkmark	E-learning Design 5 (ED5)	0.827	\checkmark	
Performance Expectancy 3 (PE3)	0.749	\checkmark	Habit 1 (H1)	0.661	\checkmark	
Performance Expectancy 4 (PE4)	0.806	\checkmark	Habit 2 (H2)	0.769	\checkmark	
Use Behavior 1 (UB1)	0.896	\checkmark	Habit 3 (H3)	0.774	\checkmark	
Use Behavior 2 (UB2)	0.65	\checkmark	Habit 4 (H4)	0.828	\checkmark	
Use Behavior 3 (UB3)	0.687	\checkmark	Parental Assistance 1 (PA1)	0.782	\checkmark	
Facilitating Condition 1 (FC1)	0.7	\checkmark	Parental Assistance 2 (PA2)	0.753	\checkmark	
Facilitating Condition 2 (FC2)	0.654	\checkmark	Parental Assistance 3 (PA3)	0.706	\checkmark	
Facilitating Condition 3 (FC3)	0.694	\checkmark	Parental Assistance 4 (PA4)	0.754	\checkmark	
Facilitating Condition 4 (FC4)	0.638	\checkmark	Social Influence 1 (SI1)	0.813	\checkmark	
Hedonic Motivation 1 (HM1)	0.893	\checkmark	Social Influence 2 (SI2)	0.873	\checkmark	
Hedonic Motivation 2 (HM2)	0.89	\checkmark				
Hedonic Motivation 3 (HM3)	0.888	\checkmark				
Effort Expectancy 1 (EE1)	0.741	$\sqrt{}$				

Information: Valid ($\sqrt{ }$) and Invalid (X)

After 35 indicators have loading factor values that are considered valid, the next step in testing validity and reliability was to test the construct reliability of the model. The matrix used in construct reliability testing is the composite reliability value. The combined reliability value considered to meet the criteria is ≥ 0.7 because it indicates that the construct has reliable reliability [54]. The results of the composite reliability test of the model are in Table 5.

Table 5. Composite reliability value

	Tuble 3. Composite remainity varie						
No	Constructs	Composite reliability	Information				
1	Behavioral intention (BI)	0.88	Reliable				
2	Use behavior (UB)	0.792	Reliable				
3	Performance expectancy (PE)	0.846	Reliable				
4	Social influence (SI)	0.831	Reliable				
5	E-learning design (ED)	0.885	Reliable				
6	Facilitating condition (FC)	0.767	Reliable				
7	Habit (H)	0.845	Reliable				
8	Parental assistance (PA)	0.84	Reliable				
9	Effort expectancy (EE)	0.761	Reliable				
10	Hedonic motivation (HM)	0.92	Reliable				

From Table 5, the composite reliability test results show that each construct has a combined reliability value of more than 0.7, so all constructs in this study are reliable constructs. The next step was to perform convergent validity testing. Convergent validity is a quantity by which the convergent construct is to explain the variance of its items. The metric used is average variance extracted (AVE). AVE that is considered valid is 0.5 or greater [55]. The AVE test results obtained in this study are in Table 6.

Table 6 shows that this study's 9 out of 10 constructs have an AVE value of more than 0.5. One construct has an AVE value less than the recommended value, namely the FC construct, with an AVE value of 0.451. Based on the principle of the PLS-SEM method, to correct the AVE value that is less than the minimum value, the researchers should remove one indicator on the construct with the lowest loading factor value [55].

Table 6. AVE value				
No	Constructs	AVE		
1	Behavioral intention (BI)	0.648		
2	Use behavior (UB)	0.565		
3	Performance expectancy (PE)	0.582		
4	Social influence (SI)	0.712		
5	E-learning design (ED)	0.661		
6	Facilitating condition (FC)	0.451		
7	Habit (H)	0.578		
8	Parental assistance (PA)	0.567		
9	Effort expectancy (EE)	0.515		
10	Hedonic motivation (HM)	0.792		

Based on Table 6, the FC construct indicator with the lowest loading factor value is the FC4 indicator, so the researchers must remove it and re-estimate it. The re-estimation results of the composite reliability and AVE values are found in Table 7. Table 7 shows data showing that each construct's composite reliability and AVE values exceeded the specified minimum values of 0.7 and 0.5, respectively. Thus, the model is declared to meet the criteria for testing validity and reliability.

Table 7	C	omnosite	reliability	and	ΔVF	re-estima	tion	results
Table /		OHIDOSHE	Temadinity	anu i	$\Delta V L$	16-esuma	ион	resums

	Tuelo // Composito formerinty uno 11 / 2 fo communion festina						
No	Constructs	Composite reliability	AVE				
1	Behavioral intention (BI)	0.88	0.648				
2	Use behavior (UB)	0.792	0.561				
3	Performance expectancy (PE)	0.846	0.582				
4	Social influence (SI)	0.831	0.712				
5	E-learning design (ED)	0.885	0.661				
6	Facilitating condition (FC)	0.767	0.535				
7	Habit (H)	0.845	0.578				
8	Parental assistance (PA)	0.84	0.567				
9	Effort expectancy (EE)	0.761	0.515				
10	Hedonic motivation (HM)	0.92	0.792				

3.2. Coefficient of determination (R2)

The coefficient of determination is the proportion of variation in the predictable dependent variable caused by the independent variable (R2). Figure 1 shows that the R2 values for the two dependent variables, behavioral intention and use behavior, are 0.682 and 0.269, respectively. In other words, 68.2% of the differences in behavioral intentions could be explained by eight latent variables: social influence, performance expectation, facilitating conditions, hedonic motivation, effort expectation, habit, Nearpod design application, and parental assistance. Meanwhile, four variables, namely parental assistance, facilitating condition, behavioral intention, and habit, can explain 26.9% of the variance in use behavior.

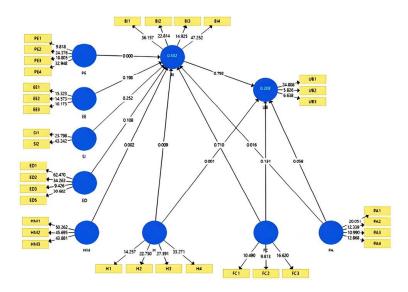


Figure. 1. Model evaluation results

688 □ ISSN: 2252-8822

3.3. Hypothesis test

This study used t-test analysis for the hypothesis testing process. The Bootstrap process was carried out with the help of the SmartPLS application by performing a double-sided test with a significance level of 5% and 1000 subsamples. A hypothesis is accepted if it has a t-test value greater than 1.96 and a p-value smaller than 0.1 [55]. The results of the hypothesis testing of this study are shown in Table 8.

Table 8. Hypothesis testing results

	ruble 6. Hypothesis testing results					
Hypothesis	Variables	t-value	p-value	Result		
H1	$PE \longrightarrow BI$	3.706	0	Significant		
H2	$ED \longrightarrow BI$	1.607	0.108	Insignificant		
H3	$EE \longrightarrow BI$	1.288	0.198	Insignificant		
H4	$H \longrightarrow BI$	2.62	0.009	Significant		
H5	$SI \longrightarrow BI$	1.145	0.252	Insignificant		
H6	$HM \longrightarrow BI$	3.154	0.002	Significant		
H7	PA>UB	1.895	0.058	Insignificant		
H8	$FC \longrightarrow BI$	0.372	0.71	Insignificant		
H9	$BI \longrightarrow UB$	0.263	0.792	Insignificant		
H10	$FC \longrightarrow UB$	1.499	0.134	Insignificant		
H11	$H \longrightarrow UB$	3.266	0.001	Significant		
H12	$PA \longrightarrow BI$	2.409	0.016	Significant		

Table 8 shows that for hypotheses H1, H4, H 6, H11, and H12, there is a strong positive correlation between variables associated with each hypothesis. Each of the hypotheses has a t-value of less than 1.96 and a p-value of less than 0.05. It indicates that there is a positive and statistically significant association between the two variables in each hypothesis. Hence, consistent with the findings of previous studies [44], [56]–[58], that the influence of behavioral intention and habit has a considerable beneficial effect on use behavior.

Performance expectation test findings on the behavior intention to use (BI) variable produce a coefficient of 0 and a t-value of 3.706. This test demonstrates that there is a positive relationship between performance expectation and behavior intention to use. The results show that the variable performance expectations affect what students want to do when they use the Nearpod app [59]. The respondents considered that using the Nearpod application could help them improve their performance/achievement in learning. The students also recognized the ease and speed of completing school assignments, increasing their intention to use the Nearpod application [60].

The results of testing hedonic motivation on students' BI in using the Nearpod application prove that there is a positive influence between the influence of HM on behavior intention to use (BI). In this study, it is known that HM is the pleasure users get from a system or technology [58]. The findings demonstrate that hedonic motivation plays no role in determining users' intent to use the Nearpod app. This study is consistent with the findings of Putra *et al.* [61] that hedonic motivation, or the joy of utilizing technology, influences the intention of users to use the Nearpod application. Table 8 reveals a substantial positive association between Parental Assistance and Behavioral Intention for the Parental Assistance variable, but no important positive link between parental assistance and usage behavior. It indicates that the more intense parental assistance when students learn with the Nearpod application, the more students' desire to use the Nearpod application increases.

It shows no significant relationship between the variables in each hypothesis for H2, H3, H5, H7, H8, H9, and H10. The results of the effort expectancy (EE) test on students' behavior intention to use (BI) in using the Nearpod application prove a coefficient of 0.198<t-count, which implies that effort expectancy has no significant effect on the intention to use the Nearpod application. In this study, it is known that EE is the level of ease felt by an individual related to the use of the system [58]. This study is consistent with the results, which show no positive effect between EE and BI [34]. The end result is brought about as a consequence of student perceptions that are more focused on usability in the context of learning [34]. The students no longer think that the Nearpod application used by schools is a complex system that is easy to learn. That does not affect the intensity of students in using the system.

The results of SI testing on students' behavior intention to use (BI) in the Nearpod application prove no positive influence. It demonstrates that social influence variables do not influence the level of user intention in using the Nearpod application. This hypothesis can occur because using the Nearpod application for students of SDN 004 Tanjung Redeb, Berau Regency is mandatory, so Social Influence is not a factor influencing students' intentions to use the Nearpod application. In this study, it is known that social influence is the extent to which a person believes that other people can influence other people to use the new system [58]. Social influence positively affects user intentions. The respondents felt that the social environment around them, such as friends and family, did not affect their interest in using the Nearpod application.

H2, H3, H5, H7, H8, H9, and H10 showed no significant relationship to the variables on each of the hypotheses. This hypothesis can occur because using the Nearpod application for students of SDN 004 Tanjung Redeb, Berau Regency is mandatory, so Social Influence is not a factor that affects students' intention to use the Nearpod application. Meanwhile, for the facilitating conditions variable that does not have a significant positive relationship to both behavioral intention and use behavior. This may happen because students use the facilities provided by the student's parents, so it is not their concern when using the Nearpod application. Students who are constantly helped out by their parents throughout the learning process have a greater propensity to struggle more when it comes to reacting to new and complicated information, which in turn hinders their ability to acquire new technologies [32]. For the Nearpod design application variable, there is not any significant positive relationship occurs between the ED variable and behavioral intention. That is because the type of Nearpod application used by students of SDN 004 Tanjung Redeb, Berau Regency, only has one application, so students do not have a comparison application related to the design of the Nearpod application.

4. CONCLUSION

This research tries to pinpoint the elements that affect Nearpod application users from the viewpoint of elementary school students. The Nearpod application design and parental assistance factors are two further elements added to the UTAUT2 basic model in the proposed UTAUT extension. This research discovered that hedonic motivation, performance expectation, habit, and parental assistance had a strong beneficial effect on behavioral intention. Additionally, habit significantly improved use behavior. It can be stated that this study explains how the adoption of technology in elementary and higher education environments has distinct root causes. Generally speaking, the suggested model was able to explain 26.9% of the variation for actual usage of Nearpod apps and 68.2% of the variance for students' desire to use Nearpod applications. The students no longer think that the Nearpod application used by schools is a complex system that is easy to learn. That does not affect the intensity of students in using the system. The respondents considered that using the Nearpod application could help them improve their performance/achievement in learning. The students also recognized the ease and speed of completing school assignments, increasing their intention to use the Nearpod application.

REFERENCES

- [1] B. Tarman and S. Dev, "Editorial: Learning Transformation through Innovation and Sustainability in Educational Practices," *Research in Social Sciences and Technology*, vol. 3, no. 1, pp. i–ii, 2018, doi: 10.46303/ressat.03.01.ed.
- [2] C. Ebert and C. H. C. Duarte, "Digital Transformation," IEEE Software, vol. 35, no. 4, pp. 16–21, 2018, doi: 10.1109/MS.2018.2801537.
- [3] S. Zizikova, P. Nikolaev, and A. Levchenko, "Digital transformation in education," in E3S Web of Conferences, 2023, vol. 381, pp. 265–276. doi: 10.1051/e3sconf/202338102036.
- [4] M. A. Ali, N. S. Ashaari, S. F. M. Noor, and S. Zainudin, "Identifying Students' Learning Patterns in Online Learning Environments: A Literature Review," *International Journal of Emerging Technologies in Learning*, vol. 17, no. 8, pp. 189–205, 2022, doi: 10.3991/ijet.v17i08.29811.
- [5] S. Elayyan, "The future of education according to the fourth industrial revolution," *Journal of Educational Technology and Online Learning*, vol. 4, no. 1, pp. 23–30, 2021, doi: 10.31681/jetol.737193.
- [6] L. Kaye, Young Children in a Digital Age: Supporting learning and development with technology in early years. Routledge, 2016.
- [7] D. Uerz, M. Volman, and M. Kral, "Teacher educators' competences in fostering student teachers' proficiency in teaching and learning with technology: An overview of relevant research literature," *Teaching and Teacher Education*, vol. 70, pp. 12–23, 2018, doi: 10.1016/j.tate.2017.11.005.
- [8] K. McKnight, K. O'Malley, R. Ruzic, M. Horsley, J. J. Franey, and K. Bassett, "Teaching in a digital age: How educators use technology to improve student learning," *Journal of Research on Technology in Education*, vol. 48, no. 3, pp. 194–211, 2016, doi: 10.1080/15391523.2016.1175856.
- [9] M. L. Hung and C. Chou, "Students' perceptions of instructors' roles in blended and online learning environments: A comparative study," *Computers and Education*, vol. 81, pp. 315–325, 2015, doi: 10.1016/j.compedu.2014.10.022.
- [10] K. Komalasari and Rahmat, "Living values based interactive multimedia in Civic Education learning," *International Journal of Instruction*, vol. 12, no. 1, pp. 113–126, 2019, doi: 10.29333/iji.2019.1218a.
- [11] K. Maass, P. Cobb, K. Krainer, and D. Potari, "Different ways to implement innovative teaching approaches at scale," *Educational Studies in Mathematics*, vol. 102, no. 3, pp. 303–318, 2019, doi: 10.1007/s10649-019-09920-8.
- [12] M. Henderson, N. Selwyn, and R. Aston, "What works and why? Student perceptions of 'useful' digital technology in university teaching and learning," *Studies in Higher Education*, vol. 42, no. 8, pp. 1567–1579, 2017, doi: 10.1080/03075079.2015.1007946.
- [13] M. M. Fernandez-Antolin, J. M. del Río, and R. A. Gonzalez-Lezcano, "The use of gamification in higher technical education: perception of university students on innovative teaching materials," *International Journal of Technology and Design Education*, vol. 31, no. 5, pp. 1019–1038, 2021, doi: 10.1007/s10798-020-09583-0.
- [14] A. Odeh and I. Keshta, "Impact of COVID-19 pandemic on education: Moving towards e-learning paradigm," *International Journal of Evaluation and Research in Education (IJERE)*, vol. 11, no. 2, pp. 588–595, 2022, doi: 10.11591/ijere.v11i2.21945.
- [15] F. Weng, H. J. Ho, R. J. Yang, and C. H. Weng, "The influence of learning style on learning attitude with multimedia teaching materials," *Eurasia Journal of Mathematics, Science and Technology Education*, vol. 15, no. 1, p. em1659, 2019, doi: 10.29333/ejmste/100389.
- [16] N. Zhiyenbayeva, A. Sabirov, M. Troyanskaya, E. Ryabova, and S. Salimova, "Implementing a conceptual model of participative management into an integrated e-learning system," World Journal on Educational Technology: Current Issues, vol. 14, no. 1, pp. 255–267, 2022, doi: 10.18844/wjet.v14i1.6723.

690 □ ISSN: 2252-8822

[17] C. M. Tang and L. Y. Chaw, "Digital literacy and effective learning in a blended learning environment," *Proceedings of the European Conference on e-Learning, ECEL*, vol. 14, no. 1, pp. 601–610, 2015.

- [18] S. N. Ismail, M. N. Omar, Y. Don, Y. W. Purnomo, and M. D. Kasa, "Teachers' acceptance of mobile technology use towards innovative teaching in Malaysian secondary schools," *International Journal of Evaluation and Research in Education (IJERE)*, vol. 11, no. 1, pp. 120–127, 2022, doi: 10.11591/ijere.v11i1.21872.
- [19] R. Perdana, A. N. Apriani, R. Richardo, E. Rochaendi, and C. Kusuma, "Elementary students' attitudes towards STEM and 21st-century skills," *International Journal of Evaluation and Research in Education (IJERE)*, vol. 10, no. 3, pp. 1080–1088, 2021, doi: 10.11591/IJERE.V10I3.21389.
- [20] C. F. Pasani, R. Amelia, and Z. Hassanhassan, "Covid-19 impact in Indonesia's education sector: Challenges and strategy," *Journal of Advanced Research in Dynamical and Control Systems*, vol. 12, no. 7 Special Issue, pp. 1722–1731, 2020, doi: 10.5373/JARDCS/V12SP7/20202281.
- [21] T. K. F. Chiu, T. J. Lin, and K. Lonka, "Motivating Online Learning: The Challenges of COVID-19 and Beyond," Asia-Pacific Education Researcher, vol. 30, no. 3, pp. 187–190, 2021. doi: 10.1007/s40299-021-00566-w.
- [22] C. Moreno-Morilla, F. Guzmán-Simón, and E. García-Jiménez, "Digital and information literacy inside and outside Spanish primary education schools," *Learning, Culture and Social Interaction*, vol. 28, p. 100455, 2021, doi: 10.1016/j.lcsi.2020.100455.
- [23] N. Ronzhina, I. Kondyurina, A. Voronina, K. Igishev, and N. Loginova, "Digitalization of Modern Education: Problems and Solutions," *International Journal of Emerging Technologies in Learning*, vol. 16, no. 4, pp. 122–135, 2021, doi: 10.3991/ijet.v16i04.18203.
- [24] B. E. Penprase, "The fourth industrial revolution and higher education," *Higher Education in the Era of the Fourth Industrial Revolution*, vol. 10, pp. 207–228, 2018, doi: 10.1007/978-981-13-0194-0_9.
- [25] L. Chitkushev, I. Vodenska, and T. Zlateva, "Digital Learning Impact Factors: Student Satisfaction and Performance in Online Courses," *International Journal of Information and Education Technology*, vol. 4, no. 4, pp. 356–359, 2014, doi: 10.7763/ijiet.2014.y4.429.
- [26] K. Sarnok, P. Wannapiroon, and P. Nilsook, "Digital Learning Ecosystem by Using Digital Storytelling for Teacher Profession Students," *International Journal of Information and Education Technology*, vol. 9, no. 1, pp. 21–26, 2019, doi: 10.18178/ijiet.2019.9.1.1167.
- [27] A. Prasetio, G. Anggadwita, and R. D. Pasaribu, "Digital learning challenge in Indonesia," in *IT and the Development of Digital Skills and Competences in Education*, IGI Global, 2020, pp. 56–71. doi: 10.4018/978-1-7998-4972-8.ch004.
- [28] I. T. Awidi and M. Paynter, "The impact of a flipped classroom approach on student learning experience," Computers and Education, vol. 128, no. 2, pp. 269–283, 2019, doi: 10.1016/j.compedu.2018.09.013.
- [29] C. Carmichael, R. Callingham, and H. M. G. Watt, "Classroom motivational environment influences on emotional and cognitive dimensions of student interest in mathematics," ZDM - Mathematics Education, vol. 49, no. 3, pp. 449–460, 2017, doi: 10.1007/s11858-016-0831-7.
- [30] Y. T. Sung, K. E. Chang, and T. C. Liu, "The effects of integrating mobile devices with teaching and learning on students' learning performance: A meta-analysis and research synthesis," *Computers and Education*, vol. 94, pp. 252–275, 2016, doi: 10.1016/j.compedu.2015.11.008.
- [31] I. Engeness, "Developing teachers' digital identity: towards the pedagogic design principles of digital environments to enhance students' learning in the 21st century," European Journal of Teacher Education, vol. 44, no. 1, pp. 96–114, 2021, doi: 10.1080/02619768.2020.1849129.
- [32] E. N. Patrikakou, "Parent Involvement, Technology, and Media: Now What?" School Community Journal, vol. 26, no. 2, pp. 9–24, 2016.
- [33] J. L. Plass and U. Kaplan, "Emotional Design in Digital Media for Learning," in *Emotions, Technology, Design, and Learning*, Elsevier, 2015, pp. 131–161. doi: 10.1016/B978-0-12-801856-9.00007-4.
- [34] A. Feri and Z. Zulherman, "Development of Nearpod-based e module on science material 'energy and its changes' to improve elementary school student learning achievement," *International Journal of Education and Learning*, vol. 3, no. 2, pp. 165–174, 2021, doi: 10.31763/ijele.v3i2.400.
- [35] T. A. Susanto, I. Fathurohman, Rismiyanto, and H. Pratama, "Developing Nearpod E-Media Through Model Discovery to Improve Learning Independence for Elementary School Students," *Uniglobal Journal of Social Sciences and Humanities*, vol. 1, no. 1, pp. 44–53, 2022, doi: 10.53797/ujssh.v1i1.7.2022.
- [36] M. A. A. Musa and J. A. Al Momani, "University Students' Attitudes towards using the Nearpod Application in Distance Learning," Journal of Education and e-Learning Research, vol. 9, no. 2, pp. 110–118, 2022, doi: 10.20448/jeelr.v9i2.4030.
- [37] T. Měkota and M. Marada, "The influence of the Nearpod application on learning social geography in a grammar school in Czecha," Education and Information Technologies, vol. 25, no. 6, pp. 5167–5184, 2020, doi: 10.1007/s10639-020-10214-3.
- [38] R. Amelia, S. I. A. Dwiningrum, Haryanto, Zamzani, and A. Mustadi, "Pandemic Pedagogy in The Era of Digital Transformation," in ACM International Conference Proceeding Series, 2021, pp. 1–7. doi: 10.1145/3516875.3516911.
- [39] S. A. Raza, W. Qazi, K. A. Khan, and J. Salam, "Social Isolation and Acceptance of the Learning Management System (LMS) in the time of COVID-19 Pandemic: An Expansion of the UTAUT Model," *Journal of Educational Computing Research*, vol. 59, no. 2, pp. 183–208, 2021, doi: 10.1177/0735633120960421.
- [40] N. R. W. Mohamed, D. Sharif, and M. N. Muhayiddin, "Literature review on technology acceptance model: The enhanced variables of Venkatesh's UTAUT model on students' acceptance of use on online distance learning," in AIP Conference Proceedings, 2021, vol. 2347, no. 1, p. 20172. doi: 10.1063/5.0051924.
- [41] S. N. Attuquayefio and H. Addo, "Using the UTAUT model to analyze students' ICT adoption," *International Journal of Education and Development Using Information and Communication Technology (IJEDICT)*, vol. 10, no. 3, pp. 75–86, 2014.
- [42] E. M. Bakheet and A. M. Gravell, "Investigating factors based on an extended UTAUT model to confirm computer science instructors' behavioural intention to adopt the flipped classroom," *International Journal of Information and Education Technology*, vol. 10, no. 10, pp. 736–743, 2020, doi: 10.18178/ijiet.2020.10.10.1451.
- [43] V. N. Hoi, "Understanding higher education learners' acceptance and use of mobile devices for language learning: A Rasch-based path modeling approach," *Computers and Education*, vol. 146, p. 103761, 2020, doi: 10.1016/j.compedu.2019.103761.
- [44] G. García Botero, F. Questier, S. Cincinnato, T. He, and C. Zhu, "Acceptance and usage of mobile assisted language learning by higher education students," *Journal of Computing in Higher Education*, vol. 30, no. 3, pp. 426–451, 2018, doi: 10.1007/s12528-018-9177-1.
- [45] M. Hubalovska, "Implementation of E-learning at Primary School Education," in Recent Advances in Educational Technologies, 2015, pp. 74–79. [Online]. Available: http://www.inase.org/library/2015/zakynthos/bypaper/EDU/EDU-13.pdf.

- [46] G. Silinskas and E. Kikas, "Parental Involvement in Math Homework: Links to Children's Performance and Motivation," *Scandinavian Journal of Educational Research*, vol. 63, no. 1, pp. 17–37, 2019, doi: 10.1080/00313831.2017.1324901.
- [47] R. Novianti and M. Garzia, "Parental Engagement in Children's Online Learning During COVID-19 Pandemic," Journal of Teaching and Learning in Elementary Education (JTLEE), 2020, vol. 3, no. 2, p. 117. doi: 10.33578/jtlee.v3i2.7845.
- [48] M. Al-Okaily, H. Alqudah, A. Matar, A. Lutfi, and A. Taamneh, "Dataset on the Acceptance of e-learning System among Universities Students' under the COVID-19 Pandemic Conditions," *Data in Brief*, vol. 32, p. 106176, 2020, doi: 10.1016/j.dib.2020.106176.
- [49] P. Tak and S. Panwar, "Using UTAUT 2 model to predict mobile app based shopping: evidences from India," *Journal of Indian Business Research*, vol. 9, no. 3, pp. 248–264, 2017, doi: 10.1108/JIBR-11-2016-0132.
- [50] R. Madigan, T. Louw, M. Wilbrink, A. Schieben, and N. Merat, "What influences the decision to use automated public transport? Using UTAUT to understand public acceptance of automated road transport systems," *Transportation Research Part F: Traffic Psychology and Behaviour*, vol. 50, pp. 55–64, 2017, doi: 10.1016/j.trf.2017.07.007.
- [51] K. Gana and G. Broc, "Structural Equation Modeling," Structural Equation Modeling with lavaan, John Wiley & Sons, Inc., 2018, doi: https://doi.org/10.1002/9781119579038.ch1.
- [52] J. F. Hair, J. J. Risher, M. Sarstedt, and C. M. Ringle, "When to use and how to report the results of PLS-SEM," *European Business Review*, vol. 31, no. 1, pp. 2–24, 2019, doi: 10.1108/EBR-11-2018-0203.
- [53] M. A. Memon, T. Ramayah, J. H. Cheah, H. Ting, F. Chuah, and T. H. Cham, "Pls-Sem Statistical Programs: a Review," *Journal of Applied Structural Equation Modeling*, vol. 5, no. 1, pp. i–xiv, 2021, doi: 10.47263/JASEM.5(1)06.
- [54] R. K. Yin, Case study research: Design and methods (applied social research methods). Thousand Oaks, CA: Sage Publications, 2014.
- [55] M. I. Nasution, M. Fahmi, Jufrizen, Muslih, and M. A. Prayogi, "The Quality of Small and Medium Enterprises Performance Using the Structural Equation Model-Part Least Square (SEM-PLS)," *Journal of Physics: Conference Series*, 2020, vol. 1477, no. 5, p. 52052. doi: 10.1088/1742-6596/1477/5/052052.
- [56] A. Raman and Y. Don, "Preservice teachers' acceptance of learning management software: An application of the UTAUT2 model," International Education Studies, vol. 6, no. 7, pp. 157–164, 2013, doi: https://doi.org/10.5539/ies.v6n7p157.
- [57] S. Hao, V. P. Dennen, and L. Mei, "Influential factors for mobile learning acceptance among Chinese users," Educational Technology Research and Development, vol. 65, no. 1, pp. 101–123, 2017, doi: https://doi.org/10.1007/s11423-016-9465-2.
- [58] V. Venkatesh, J. Y. L. Thong, and X. Xu, "Consumer acceptance and use of information technology: Extending the unified theory of acceptance and use of technology," MIS Quarterly: Management Information Systems, vol. 36, no. 1, pp. 157–178, 2012, doi: 10.2307/41410412.
- [59] M. Sanmugam, A. Selvarajoo, B. Ramayah, and K. W. Lee, "Use of Nearpod as interactive learning method," 13th International Technology, Education and Development Conference, 2019, vol. 1, pp. 8908–8915, doi: https://doi.org/10.21125/inted.2019.2219.
- [60] J. Wang and I. Chia, "Engaging students via Nearpod® in synchronous online teaching," Management Teaching Review, vol. 7, no. 3, pp. 245–253, 2022, doi: https://doi.org/10.1177/2379298120974959.
- [61] A. P. Putra, M. Arafik, and I. Pratiwi, "Use of Nearpod to Enhance Student Engagement in Online Learning," in 2021 7th International Conference on Education and Technology (ICET), 2021, pp. 298–303, doi: 10.1109/icet53279.2021.9575062.

BIOGRAPHIES OF AUTHORS



Rizky Amelia is Lecturer in Department of Elementary School Teacher Education, Universitas Lambung Mangkurat, Banjarmasin, Indonesia. She successfully completed her doctoral program in Primary Education at Universitas Negeri Yogyakarta on 2023. She received awards from Elsevier as a reviewer in the journal Heliyon (Scopus Q1), Educational Research Review (Scopus Q1), and the Journal of Computer Speech & Language (Scopus Q2). Her research focuses on teaching and learning in primary school, linguistic education, digital learning, writing skill, learning design, and Indonesian language education. She can be contacted at email: rizkyamelia@ulm.ac.id and rizkyamelia.2020@student.uny.ac.id.



Zamzani D S s s a Senior Professor of Indonesian Language Education Department and Chairman of the Senate of Universitas Negeri Yogyakarta, Yogyakarta 55281, Indonesia. His research focuses on Indonesian language learning, language skill education, linguistics, teaching and learning education, and learning evaluation. He can be contacted at email: zamzani@uny.ac.id.

692 □ ISSN: 2252-8822





Ahmad Suriansyah is a senior Professor of researcher in undergraduate of Elementary School Teacher Education Department, Master and Doctoral Program of Management Education Department, Post Graduate, Universitas Lambung Mangkurat, and Director of Postgraduate Program in Universitas Lambung Mangkurat. His research focuses on leadership management, management education, transformational leadership, character education, education in primary school, digital transformation, and learning strategy. He can be contacted at email: a.suriansyah@ulm.ac.id.



Aslamiah is a senior Professor of researcher in undergraduate of Elementary School Teacher Education Department, Master and Doctoral Program of Management Education Department, Post Graduate, Universitas Lambung Mangkurat. Her research focuses on leadership management, transformational leadership, management education, character education, education in primary school, digital transformation, and learning strategy. She can be contacted at email: aslamiah@ulm.ac.id.