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The Effect of Behaviour Intention on Academic Performance of Vocational Students in Blended Learning: A Case Study in Information Technology Courses

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Abstract: There are three type of learning models, one of which is blended learning. Blended learning is learning that combines face-to-face instruction with e-learning. Program Vokasi Universitas Indonesia encourages lecturers to implement this model to enhance the quality of vocational students. Universitas Indonesia support for blended learning is shown through the Learning Management System: emas2.ui.ac.id. Behavioural intention in the context of blended learning is crucial, as reflect students readiness as learners to use technology. Studying academic performance is vital in the higher education, as it serves as the primary indicator of the success of the learning process and the achievement of educational goals. The study was conducted to asses the academic performance of vocational students in the blended learning model. This study uses the concept of behaviour intention derived from the Technology Acceptance Model (TAM). This study uses a quantitative approach for the analysis, an online survey was conducted to obtain data from 65 respondents, who have taken information technology courses. The collected data is then processed using SPSS using three stages: validity and reliability test, simple regression and moderation test. For the moderation test, subgroups based on gender and school origin were used. The result showed a significant effect behaviour intention on academic performance among vocational students. The moderation test revealed different results for the indicators: gender (male vs female) and school origin (public vs privat school). Significant result were found for the female and public school as moderation categories.

Keywords: behavior intention, academic performance, blended learning, vocational.

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INTRODUCTION

Education is something that needs attention and support from various parties, such as: teachers, parents and government. Education provides benefits to each person such as increasing their knowledge, potential and skills so that they become competitive human beings (Zuhdi et al., 2021). In addition, education will provide indirect benefits to society such as reducing crime rates. A person with a good education is more aware of their environment and is not easily fooled by irresponsible parties (Sam Howell, 2022).

Education is a basic right for every citizen, to support this sector the Indonesian government budgets 20 per cent of the state budget. Support for education is also realised in the form of an independent learning curriculum. Independent

learning is a learning model that supports children to develop optimally. The independent learning curriculum encourages the use of digital technology (Darlis et al., 2022).

E-learning is studied that uses information and communication technology. Students and teachers do not need to be present in one location. Students can access materials from anywhere and anytime (Linus, 2019). The rapid use of e-learning is affected by the spread of covid-19 disease. However, e-learning-based has disadvantages, i.e,: the absence of interaction between students and teachers, students and students. Studies through e-learning demands an autonomous attitude in order to succeed in completing a course. Students who have low motivation will fail in their studies (Rawashdeh, 2021).

Along with the presence of negative and positive sides in the implementation of e-learning and the 'new normal' condition after covid-19, encouraging teachers and educational institutions to adopt a blended learning model (Aldoori, 2023).

Blended learning was born out of an attempt to overcome the disadvantages of e-learning. Stockwell and Tanaka-Ellis (2012) describe "blended learning", as a combination of two learning components: face-to-face and computer-mediated activities or combines a face-to-face system with a distance learning system, which relies on a website in its teaching and learning activities. There are three forms of blended learning, namely: blended in learning activities, blended between learners, and blended between students and different instructors (Olejarczuk, 2014; Osguthorpe & Graham, 2003)

Blended learning models often rely on technology, which can be met with varying levels of acceptance from students. Acceptance studies help identify which factors influence students' willingness to use the online components of the learning process. These studies focus on behavioral intention, which is a strong predictor of whether students will embrace blended learning and use the technological tools provided.

Measuring acceptance is not only during planning but can be done post-implementation. Technology Acceptance Model (TAM) was built: '...specifically to describe computer user behaviour'. (Tahar et al., 2020). In the context of this study, users believe that blended learning will improve students' performance in learning.

The study of behavioural intention in the context of blended learning is crucial because learners' intention or readiness to use blended learning technologies and methods is the main determinant of the success of blended learning implementation itself. Research shows that strong behavioural intention towards the use of blended learning is positively correlated with improved student academic performance.

Educational institutions need to pay attention to whether academic performance is achieved. Academic performance is important for students and educational institutions, because it describes the output of the learning experience in higher education. Academic performance represents the knowledge, skills, and attitudes that students have (Mappadang et al., 2022). Academic performance is one of the most commonly used ways of assessing students' level of mastery, understanding and excellence in the material that has been taught in the classroom. Academic performance is defined as cumulative grade point average, standardised test scores, and educational attainment (Asencios-Trujillo et al., 2024; Farb & Matjasko, 2012). Academic achievement is the result of the learning process, which is determined by many factors, one of which is the role of individual students. Individual factors (such as cognitive ability, self-regulation strategies in learning, gender) (Latifah & Amelia, 2019).

This study focuses on individual students' intention to use blended learning and how it affects academic performance. The novelty of this

research; first, it is conducted on the BL model and second, it is conducted in the Indonesian context, especially in vocational education. Previous studies have been conducted in the context of e-learning and in the region of Tanzania (Shatta, 2023). The question in this study is whether there is an effect of intention to use BL on student academic performance? Do gender and school origin moderate the effect of behaviour intention on academic performance?

METHOD

Participants

Samples were taken from 2020 adm office students who experienced the early 'new normal' period and had taken information technology (IT) courses. This course became the object of research because it underwent a blended learning model, such as the availability of learning videos, quizzes, online assignment collection coupled with face-to-face learning. The BL model was used to enhance skills in the course related to pivot table and data visualisation. An explanation of the respondent description can be seen in table 1, below:

Table 1 Respondent description

Category	Number	Percent
Gender		
Male	11	17%
Female	54	83%
School origin		
Public School	47	72%
Private School	18	28%
Entry Path to Universitas Indonesia		
SIMAK UI	30	46%
Invitation (PPkB)	35	54%
Major in higher Education		
Office Administration	9	14%
Exact Science	14	21%
Social Science	42	65%

Based on table 1, the majority of respondents are female as many as 54 people (83%). For the category of high school origin, the majority (47 individuls, 72%) came from public schools. In the entry path category, the majority (35 people/54%) were admitted the invitation pathway (PPKB). Finally, within majors category, the majority (42 individuals,65%) came from Social Sciences (IPS).

Research Design and Procedures

This study employs a quantitative research approach, with a cross-sectional design. This approach is grounded in positivist philosophy and is applied to specific populations or samples. Quantitative methods are used to summarise, find patterns, make predictions, and test cause-and-effect relationships (Rana et al., 2021). To collect data, the researcher distributed questionnaires to the selected sample. The conceptual model illustrating the influence of the independent variable on the dependent variable is presented Figure 1.

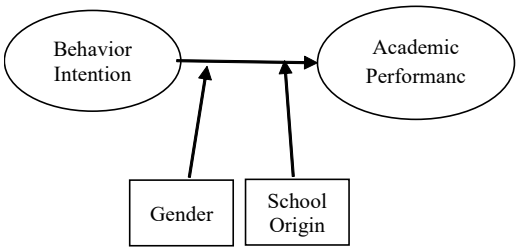

Figure 1. Study model

Based on Figure 1, that there are three hypotheses in this study, i.e.:

H1: There is an influence of behaviour intention (BI) on academic performance (AP)

H2: Gender moderates the effect of behaviour intention (BI) on academic performance (AP)

H3: School origin moderates the effect of behaviour intention (BI) on academic performance (AP).

Research Procedure

Stage 1: Preparation. Literature studies related to blended learning, behavioural intention,

and academic performance. Development and validation of research instruments, such as questionnaires to measure behavioural intention and academic performance data collection.

Stage 2: Data Collection. Distributing questionnaires to students who participated in the blended learning programme in the specified semester.

Stage 3: Data Analysis. Testing the validity and reliability of the questionnaire instrument.

Using correlation and regression statistical analysis to test the relationship between behavioural intention and academic performance.

Interpretation of analysis results and discussion based on theory and previous research.

Stage 4: Reporting. Compile a research report that includes background, methodology, results, discussion, and conclusions.

Instrument

The questionnaire was created in the form of closed-ended questions using a Likert scale. The Likert scale in this research uses four categories: 4 (strongly agree), to 1 (strongly disagree). The question items were divided into two variables: first, Behaviour Intention (BI). BI is measured and adapted from the Venkatesh et al., (2003) and (Lee et al., 2009). Second, academic performance is measured through their perception of the knowledge and skills they have in IT courses. The assessment taken from students perspective.

Table 2. Item measurement

Variable	Indicator
Behavior Intention	Intent to use
	Predict to use
	Plan to use
	Prefer BL
Academic Performance	able to explain pivot table
	able to explain dashboard
	able to practice pivot table
	able to practice dashboard

Data Analysis

This study conducted two stages of analysis: First, data processing using Ms. Excel application. Second, statistical analysis using SPSS software. In data processing activities; clearing, editing, entering and coding activities were carried out. While in the statistical analysis stage, validity, reliability, linear regression tests and subgroup moderation tests (gender and school origin) were carried out.

The validity test was conducted by comparing the calculated r-values with the the r-table, which is 0.2441. For the reliability test, a Cronbach's Alpha value greater than 0.7 was used as the criterion for acceptable reliability. To test the significance of differences in the influence between subgroups (gender and school origin), the Chow test was employed in the moderation analysis. The regression model is presented in the equation below:

$$Y = a + b1X1$$

Y= Academic Performance
a= Konstanta
b1= Variable Coefficient X1
X1= Behavior Intention (BI)

■ RESULT AND DISCUSSION

Validity and Reliability Test

In this section we will explain the results of the validity and reliability tests, i.e.:

Table 3 Validity and reliability test

Variabel	Indicator	r test	Cronbach Alpha
Behavior Intention	BI1	0.853	0.807405
	BI2	0.873	
	BI3	0.850	

	BI4	0.736	
Academic Performance	KA1	0.905	0.854013
	KA2	0.921	
	KA3	0.808	
	KA4	0.711	

Based on table 2, it can be concluded that all four indicators of behaviour intention and all four indicators of academic performance are valid, as their r test values exceed r table value of 0.2441. Furthermore, both variables are deemed reliable, with cronbach alpha value above the 0.7 threshold.

Regression test of variable Behavior Intention on Academic Performance

In this study, a simple regression test was conducted using a t-test. Based on Table 4, the significance value (0.01) is less than 0.05, indicating that H1 is accepted. This means that there is an effect of behavioral intention (BI) on academic performance (AP). The parameter estimation results in Table 4 yield the following equation:

$$Y= 5.765 + .509X1$$

Based on equation 1 shows that academic performance is constant at 5,765, assuming behaviour intention is 0. In regression equation 1 shows the value of X1 = 0.509, this means that a one-point increase in behaviour intention can predict an increase of 0.509 points in academic performance.

Based on Table 6, it can be seen the influence of behaviour intention variable on academic performance. As much as 21.9 percent of academic performance is influenced by behaviour towards blended learning, the rest is influenced by other factors.

This study confirms a significant positive effect of behavioral intention (BI) on academic performance among students engaged in a blended learning environment. These findings align with Shatta, (2023), who reported a significant relationship between students' intention to use e-learning platforms and their academic success ($p < 0.05$).

These findings consist with the study by Aldraiweesh & Alturki, (2023) that students with a high interest in e-learning actively utilize the platform to seek information and complete assignments, which positively affects their academic grades. Additionally, Topping et al., (2022) reported that 83% of respondents perceived blended learning as more effective than fully online learning, as students can revisit difficult materials and enjoy a more comprehensive learning experience.

Despite the positive correlation, this study indicates that behavioral intention is not the sole factor influencing academic performance. Other variables such as self-regulated learning, intrinsic motivation, and instructor support appear to play dominant roles. The relatively modest influence of BI may be due to difficulties some students experience in understanding blended learning materials.

Regression Analysis of Behavior Intention on Academic Performance within Gender Subgroup

In this section, it is divided into two parts male (code 1) and female (code 0). The anova test for male category, can be seen in Table 7. its known that the F sig test value (0.738) >0.05. This shows that there is no effect of behaviour intention on academic performance for the male moderation category.

In Table 8, it is known that the F sig test value (0.001) <0.05. This shows that there is an effect of behaviour intention on academic performance for the female moderation category.

The results of the parameter estimation for female category (see Table 9), yielded the following regression equation:

$$Y = 4.404 + .601X1$$

Based on equation 2, academic performance is constant at 4.404, when behaviour intention is zero. he coefficient for behavioral intention (X) is 0.601, indicating that a one-point increase in behaviour intention predict an increase of 0.601 points in academic performance.

According to Table 10, behaviour intention 27.5% of the variance in academic performance within the female subgroup, while the remaining variance is attributed to other factors.

Chow test for Moderating Variables Gender

Regression analysis for all categories obtained an SSRT value of 285,860, for category (1) or male SSR1 value of zero because it is not significant. While for category (0) or female gender is 243,253. Use the Chow test formula, the following results were obtained:

$$F = \frac{(SSRT - SSRG)/p}{(SSRG)/(n_1 + n_2 - 2p)}$$

$$F = \frac{(285860 - 243253)/2}{(243253)/(65 - 4)}$$

$F = 5.342$

Based on the calculation, the F_{count} value of 5.342 is greater than the F-table value of 3.15, leading to the acceptance of H2. This indicates that gender moderates the effect of behavioral intention on academic performance. Specifically, the regression effect of behavioral intention on academic performance is significant for females compared to males.

The moderation analysis revealing that behavioral intention (BI) significantly influences academic performance for female students but not for males is consistent with existing research highlighting gender differences in technology acceptance and learning behaviors.

Several studies suggest that female students often demonstrate higher motivation, greater conscientiousness, and more positive attitudes toward adopting educational technologies compared to male students (Ong & Lai, 2006). These affective and behavioral tendencies may enhance the strength of the relationship between BI and academic achievement among females.

Moreover, research by Durndell & Haag, (2002) indicates that females tend to engage more thoroughly with learning platforms and employ more self-regulated learning strategies, which could mediate the stronger impact of BI on their academic outcomes. In contrast, males may exhibit a more utilitarian approach to technology use, leading to a weaker association between intention and performance (Gefen & Straub, 1997).

Andriani et al., (2022) revealed that 11.1% of students expressed dissatisfaction with the assessment methods employed by lecturers. Assessment serves to evaluate students' cognitive comprehension of the course material, as well as their affective and psychomotor behaviors. The moderation analysis for the female subgroup (see Table 9) indicates a higher R-squared value for behavioral intention compared to the male subgroup. This suggests that female students demonstrate a stronger inclination towards blended learning.

Regression Analysis of the Relationship Between Behaviour Intention on Academic Performance in the School Origin Subgroup

This section it is divided into two parts public school (code 1) and private school (code 0). The anova test result for public schools shows that the sig value (0.001) <0.05 (see Table 11). This indicates that behaviour intention has a significant effect on academic performance in public schools category. Based on the results of the public-school parameter test (see Table 12), the following equation is obtained:

$$Y = 4.997 + .561X1$$

Based on regression equation 3, academic performance is constant at 4,997, when behaviour

intention is zero. The coefficient for behavioral intention (X) is 0.561, indicating that a one-point increase in behavioral intention predicts an increase of 0.561 points in academic performance.

Based on Table 13, the influence of behaviour intention variable on academic performance in the school category is evident, with 25.1 percent of academic performance is influenced by behaviour intention towards blended learning, the rest is influenced by other factors. In Table 14, the significant value 0.125 is greater than 0.05. indicating that does not have a significant effect on academic performance within the private schools subgroup.

Chow Test for Moderating Variables of School Origin

Regression analysis for all categories obtained SSRT value of 285.860, for category (1) or public school SSR1 value of 210.951. While for category (0) or private school is 0, because it has an insignificant value. Using the Chow test formula, the following results are obtained:

$$F = \frac{(SSRT - SSRG)/p}{(SSRG)/(n_1 + n_2 - 2p)}$$

$$F = \frac{(285860 - 210951)/2}{(210951)/(65 - 4)}$$

F= 10.831

Based on the calculation, the F_{count} value is 10.831 is greater than 3.15 (F_{table}) leading to the accepting of H3. This indicates that the school origin variable moderates the effect of behaviour intention on academic performance. Specifically, the regression effect of behaviour intention on academic performance is significant for students from public schools compared to those from private schools.

This finding may reflect differences in prior exposure to technology, learning readiness, and cultural factors influencing self-directed learning. This result is in contrast to a Korean study that showed students who graduated from private schools performed better in academic performance (Hahn et al., 2014). Private schools in Indonesia usually offer more adequate facilities, lower student-teacher ratios, and a greater focus on the quality of learning. The author suspects that the respondents are not students from top private schools, unlike in the Korean context, where entry into private schools requires passing a rigorous exam.

■ CONCLUSION

Based on the discussion section, it can be concluded that there is an influence of behaviour intention on academic performance in the blended learning model. Although the influence of BI on blended learning is in the low category in information technology courses. Regarding gender-based moderation category, there is a difference in influence between male and female. Similarity, school origin-based moderation reveals differences in the effect between students from public and private schools.

Further studies related to the academic performance of vocational students can be carried out by adding other variables such as self-regulated learning. Self-regulated learning is one of the factors for students' academic performance to reach their targets. To draw better conclusions related to moderating variables, the author suggests using a combination of gender and school origin of respondents.

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APPENDIX

Table 4. t test

Model		t	sig
1	(Constant)	3.513	<.001
	Behaviour Intention	4.201	<.001

Table 5. Estimasi parameter

Model		B
1	(Constant)	5.765
	Behaviour Intention	.509

Table 6. Model summary

Model	R	R Square
1	.468[a]	.219

Table 7. Anova test for male category

Category	Sum of Squares	F	Sig
Regression	0.335	0.119	.738
Residual	25.302		

Table 8. Anova test for female category

Category	Sum of Squares	F	Sig
Regression	92.080	19.684	<.001
Residual	243.253		

Table 9 Female category parameter test

Model		B
1	(Constant)	4.404
	Behaviour Intention	.601

Table 10 Model summary for female category

Model	R	R Square
1	.524	.275

Table 11. Anova test of public-school category

Category	Sum of Squares	F	Sig
Regression	70.794	15.102	<.001
Residual	210.951		

Table 12. parameter test for public school

	Model	B
1	(Constant)	4.997
	Behaviour Intention	.561

Table 13. Model summary for public school

Model	R	R Square
1	.501	.251

Table 14. Anova test private school

Category	Sum of Squares	F	Sig
Regression	11.784	2.625	.125
Residual	71.827		