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ANALYSIS OF THE SUCCESS OF THE GOOGLE CLASSROOM APPLICATION AT THE UNIVERSITY LEVEL USING THE DELONE MCLEAN MODEL

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Abstract. *Learning media is important to help educator practitioners deliver knowledge to the audience, especially at the university level. It makes sense because the students will be known more observations about the main studied field of knowledge. But many challenges are taken into consideration due to the lack of adequate resources. Therefore, online learning media is used tohelp offline learning, also known as blended learning. One of the most used applications for blended learning is Google Classroom. This application is happening when covid-19 disease thatonline learning is always used at all levels of education. But when the pandemic is over, many lecturers still used the application because they think that more effective when they use BlendedLearning Method. One of the higher education institutions in Purwakarta Regency which has a relatively high representative value is Wastukancana College of Technology. This university hasfive study programs and many of the lecturers who teach still use the Google Classroom application to be used as a Blended Learning learning medium. To assist this research stage, the SEM method and the Delone Mclean research model were used which were consideredappropriate and accurate in analyzing the success of an information system specifically for its use in Blended Learning.*

Keywords: *Application, Analyze, Blended Learning, SEM Methods, Delone Mclean Model*

1. INTRODUCTION

The growth of the education industry is now a lot that uses information technology to support the learning process. This is because there will be an increasing need for support both by teachers in conveying teaching material and students who get learning.Especially when the Covid-19 pandemic hit at the end of 2019 until the end of 2022, allaspects of life must implement social distancing, one of which is the world of education.So that it is possible for students and teachers to need software that can help the learning process even though it is limited by distance and time. One application that iswidely used is Google Classroom. Google Classroom is a platform provided by Googlewhere the media is currently a substitute for face-to-face class meetings. This media includes providing material and assignments with specific deadlines (optional time) integrated into Google Calendar and integrated into Google Drive, teaching materials integrated with YouTube, quizzes integrated with Google Form, online meetings supported by Google Meet, and there is a conversation column regarding the material or assignment given. (Parnabhakti & Puspaningtyas, 2021). Although now at the beginning of 2023, the Covid-19 Pandemic is over, and learning has been carried out face-to-face or known as offline learning, the use of the Google Classroom applicationis still widely used in the world of education. This is because it is easy to use and has many advantages that can support the teaching and learning process. Learning with acombination of online and offline media is known as Blended Learning. In the last decade, at least five meta-analyses have looked at the impact of blended learning environments and how they relate to learning performance. Each of these studies found a small to moderate positive effect in favor of blended learning compared to fully onlineor traditional classroom settings. (Dziuban et al., 2018)

This research will discuss the success of learning with the Blended Learning method with the Delone McLean Model with approaching Structural Equation Modelling(SEM). Delone McLean's model is considered very good in analyzing the successful use of an information system. The success of the information system must be analyzedthrough empirical studies to determine the factors that influence the effectiveness of the information system and to find or develop a model as a frame of reference for action. Information system improvement. Information system success is a multidimensional and interdependent construct, and it is, therefore, necessary to examine the connections switching between dimensions or manage these dimensions. (Kurnianto et al., 2019)

Structural Equation Modelling (SEM) SEM is a comprehensive and flexible approach to modeling the relationship between several variables. Previously, SEM wasmainly used to model the covariance between variables measured on a continuous scale. However, the capabilities of SEM have evolved dramatically to enable the modeling of different types of data using different estimation methods, as well as calculating averages, averaged patterns, and latent interactions. The terms, categoricallatent variables, clustered data, and models are adapted to the needs of researchers working with complex data that historically have not been analyzed using complex multivariate methods. While SEM is not required or even desirable for every hypothesistesting or modeling requirement, its ability is unmatched to address many multivariate hypotheses and diverse modeling needs. (Hoyle, 2012).

Therefore, this study will focus on the results of an analysis of the success of an application which in this case is Google Classroom which can be used as a further discussion regarding the evaluation of blended learning so that it can produce a structured teaching pattern and can be easily understood and used by both students and students. teachers and students who use it.

2. LITERATURE REVIEW

2.1 Blended Learning

Blended Learning has connections to various academic disciplines like remote learning, educational technology, computer-assisted language learning (CALL), and English teaching style. Three arguments favor blended learning above other teaching strategies. These goals include enhancing access and flexibility, enhancing cost- effectiveness, and improving teaching and learning pedagogies. These three factors may help to explain why instructors, trainers, or students might prefer blended learningto other forms of instruction. Additionally, several layers of blended learning were identified, including activity-, course-, program-, and institutional-level mixing.Depending on the type of learning activity, course, program, or institution, each level employs a mix of conventional teaching methods and online components. The mixed learning environment of traditional (face-to-face) and online learning is shown in Figure1. (Albiladi & Alshareef, 2019)

Blended Learning also has some benefits, such as improving the level of ICT skillsamong the teachers and students who are teaching and offering animal science respectively in colleges. (Prince et al., 2020) And assist teaching processes when physical attendance to universities is suspended due to bad weather warnings or otheremergencies. (Dahmash, 2020)

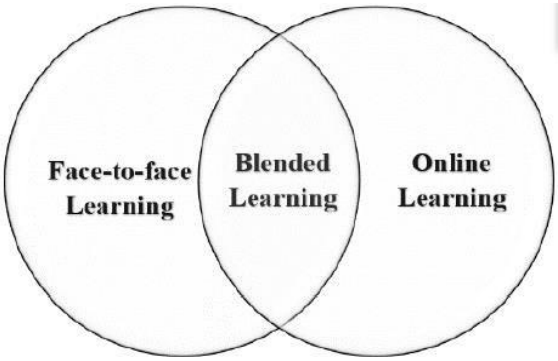

Figure 1. Blended learning environment

(Source: Albiladi & Alshareef (2019)**)**

2.2 Delone McLean Model

Delone McLean's Model has received great interest from researchers in the field of information systems. In 1992, the model was developed initially to measure the approved structure for the success of IS. The information success model has discussed the six dimensions, (as shown in Figure 2) such as information quality, system quality, system use, user satisfaction, individual impact, and organizational impact. (Awad et al., 2022).

Variables or what will be referred to hereinafter as constructs are parts that describe the success of an information system. The constructs in question are SystemQuality, Information Quality, Service Quality, Use, User Satisfaction, and Net Benefit. Information Quality is Information quality refers to the quality of the system outputs. (Sabeh et al., 2021). System Quality is the criteria used to measure the attributes that affect the excellence of an information system. (Elsdaig & Nassar, 2019). Service Quality is system quality is a major factor in how useful the data is. (Kurniawan & Tjhin,2023). Use is a behavior that expresses belief in the goodness of using an informationsystem. (Gonzales & Wareham, 2019). User Satisfaction User satisfaction is the user'sresponse and feedback after using the information system. (Salim et al., 2021). Net Benefit is an indicator that can show whether an organization is considered profitable or unprofitable depending on whether benefits or disadvantages predominate in a particular analysis (always comparing experimental vs. control treatment). (Buyse et al., 2021) Here's the Delone McLean Model in its entirety shown in Figure 2 below.

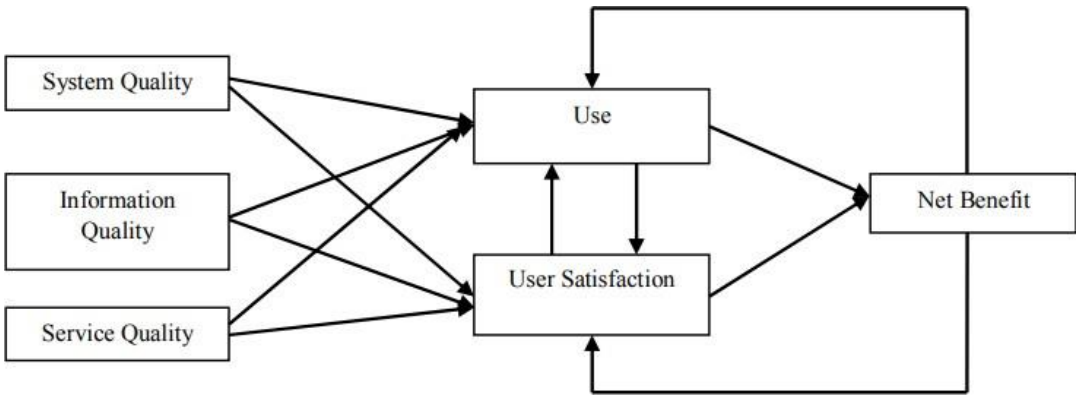

Figure 2. Delone McLean Model

(Source:(Angelina et al., 2019)**)**

2.2 Structural Equation Modelling

Structural Equation Modelling is an expanding family of statistical techniques for simulating the relationships between variables. Although the data used to model and estimate these associations are based on seen data, models may also contain latent,or unobserved, factors. SEM has also been referred to as latent variable modeling because of this. SEM has also been referred to as covariance structure modeling because the fundamental data for the majority of SEM applications are covariances. Additionally, a lot of SEM applications aim to estimate the causal relationshipsbetween variables, which explains why SEM is occasionally referred to as causal modeling. Regardless of the name, this guide's family of techniques referred to as SEM is a thorough, adaptable, and widely used tool for modeling and testing hypotheses in the social and behavioral sciences. (Hoyle, 2012).

There are several main stages in SEM analysis, including (1) Creating an SEM Model consisting of a Measurement Model and a Structural Model; (2) Preparing research design and data collection; (3) Model Identification (an identification test is carried out to determine a model that can be further analyzed by calculating the degreeof freedom or also known as Model Fit Testing, followed by Validity Tests, Reliability Tests, and Data Normality Tests); (4) Testing the Model (Model Testing and Estimation,on the Measurement Model and Structural Model). (*Konsep Dasar Dan Aplikasi SEM Dengan Amos 24 - Singgih Santoso - Google Books*, n.d.)

2.2.1 Validation Testing

A validity Test is a test used to measure the level of effectiveness of a measuring instrument or measuring media to obtain data. Usually used to measure how effective a questionnaire is for obtaining data, it is more appropriate for the questions asked in the questionnaire. Validity Testing Criteria by correlating between each indicator item score with the total score of the construct. The significance level used is 0.05. The testcriteria are that H0 will be accepted if the Rcount value is greater than RTable. And howto determine the value of RTabel, namely R table = df (N-2), the significance level of the two-way test. (Miftahul Janna, 2021)

2.2.2 Reliability Testing

Reliability is an index that shows the extent to which a measuring device can be trusted or relied upon. So that the reliability test can be used to determine theconsistency of the measuring instrument, and whether the measuring instrumentremains consistent if the measurement is repeated. A measuring instrument is said to be reliable if it produces the same results even though measurements have been mademany times. (Miftahul Janna, 2021)

2.2.3 Normality Testing

Normality Testing is The SEM model, when estimated using the Maximum Likelihood Estimation, requires the fulfillment of the normality assumption. The easiestnormality test is to observe the skewness value. (Waluyo, 2016)The statistical value fortesting normality is called the z-value (Zcount) which is generated through the following formula:

$$Zcount = \frac{Skewness}{\sqrt{\frac{6}{N}}}$$

Formula 1. Normality Testing – Skewness Curtosis

(Source: (Waluyo, 2016)**)**

2.2.4 Model FIT Analysis

Calculation of the Goodness-of-Fit index (hereinafter referred to as GOF) in assessing whether or not a proposed model is suitable for research. GOF can simply be used in regression testing or is familiarly known as the ANOVA test with statistical output F-count, can also be developed with path analysis techniques (path analysis) which underlies the fulfillment of assumptions to see the significance of the linearity function of a model whether a model is declared linear or not, for example by approximation curve fit. Estimation in a model can be guided by GOF goodness-of-fit itself, which functions to see the potential for the possibility of a confounding factor or anomaly (expressed t value < 1.96, which means that a path is declared insignificant orthe standard solution value is > 1.00). (Zailani et al., 2020)

2.2.5 Estimates Analysis

This test aims to determine whether the independent variable influences the dependent variable simultaneously. The stages of simultaneous regression significance testing are hypothesis testing. Hypothesis testing was carried out to find out whether the data could be analyzed and modeled. (Resti Anggraeni et al., 2018)

2.3 Population and Samples

The population is a generalization domain consisting of existing objects or subjects. They have certain properties and characteristics that have been determined by researchers to study them and draw conclusions from them. (Rosanti & Marlius, 2023) To analyze the required amount of data, the right number of samples is needed so that the analytical measurements are better observed. A sample size justification should consider how informative the data will be given an inferential goal, such as estimating an effect size or testing a hypothesis. (Lakens, 2022) A sample is a group ofelements selected from a larger group with the hope that studying this smaller group (sample) will reveal important information about the larger group (population). (Firmansyah et al., 2022). The sampling technique chosen by the researcher is SimpleRandom Sampling. Simple random samples show that they are more efficient than other types of estimators under certain available theoretical conditions. Numerical representation and simulation studies support the theoretical observations. (Firmansyah et al., 2022). And the formula that is used is Slovin Formula.

$$n = 1 + \frac{N}{1 + N\ (E)^2}$$

Formula 2. Slovin Formula

(Source: Jamil et al., 2023**)**

Description:
n = Number of samplesN = Population
E^2 = Precession set (5%)

3. RESEARCH METHODS

In this study using the SEM approach with the model used is Delone McLean. Inthe Delone McLean Model, there are several hypotheses that describe the relationships between variables. Based on the previous explanation, the following hypotheses will be analyzed further.

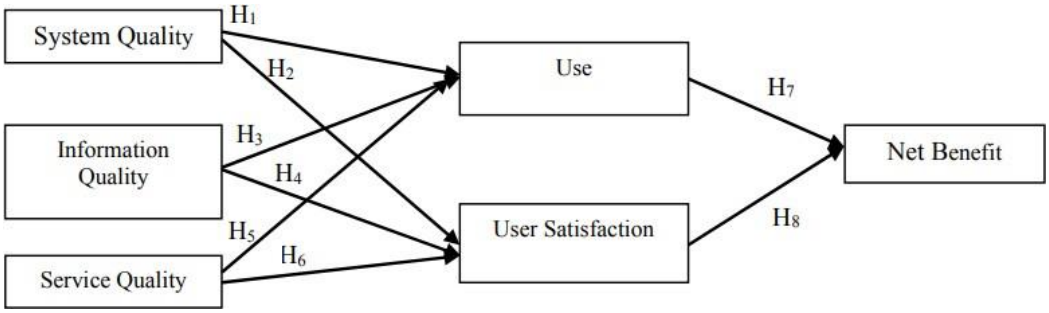

Figure 3. The research model analyzed

Research Hypothesis consist of :

H1 : System Quality will affect Usage
H2 : System Quality will affect
User SatisfactionH3 :
Information Quality will affect
Usage
H4 : Information Quality will affect
User SatisfactionH5 : Service
Quality will affect Usage
H6 : Service Quality will affect
User SatisfactionH7 : Usage
will affect Net Benefit
H8 : User Satisfaction will affect Net Benefit

The following is an explanation of each construct, indicator and code in theresearch model carried out, listed in table 1.

Table 1, Construct, Indicator, and Code

Construct	Indicator	Code
System Quality	Availability	SQ1
(SQ)	Reliability	SQ2
	Security	SQ3
	Performance	SQ4
Information Quality	Accuracy	IQ1
(IQ)	Relevance	IQ2
	Credibility	IQ3
	Timeliness	IQ4
Service Quality	Responsiveness	SR1
(SR)	Tangibles	SR2
	Expertise	SR3
	Customization	SR4
Use	User Interface	U1
(U)	Navigation	U2
	Help Avaibility	U3
	Task Fit	U4
User Satisfaction	Experience	US1
(US)	Communication	US2
	Compability	US3
	Trust	US4
Net Benefit	Financial Benefits	NB1
(NB)	Operational Efficiency	NB2
	Increased Productivity	NB3
	Quality Inprovement	NB4

4. RESULTS AND DISCUSSION

After this hypothesis is made, the next step is to find the number of data samplesfrom the population being analyzed. The following is the result of the calculation of theSlovin sample calculation formula.

$$n = 1 + \frac{N}{1+N\,(E)^2} = 1 + \frac{4058}{1+4058\,(0{,}05)^2} = 364{,}109 \approx 364$$

Based on the data above, it is known that the number of samples required is 364 respondents. After this stage is carried out, it is continued with the validity test, alongwith the results of the validity test which are assisted by using the SPPS Statistics application. The error rate or alpha used is 5%. The following data is the result of a test from respondents data used for validity testing with an RTable value of 0.361. Data is said to be valid if the Rcount data value is more than RTable. The following isthe result of testing its validity.

Table 2, Result of Validation Test

	Rtable	Rcount	Result
SQ1	0.107	0.619	Valid
SQ2	0.107	0.550	Valid
SQ3	0.107	0.717	Valid
SQ4	0.107	0.645	Valid
IQ1	0.107	0.682	Valid
IQ2	0.107	0.754	Valid
IQ3	0.107	0.666	Valid
IQ4	0.107	0.652	Valid
SR1	0.107	0.164	Valid
SR2	0.107	0.489	Valid
SR3	0.107	0.549	Valid
SR4	0.107	0.580	Valid
U1	0.107	0.512	Valid
U2	0.107	0.621	Valid
U3	0.107	0.435	Valid
U4	0.107	0.616	Valid
US1	0.107	0.411	Valid
US2	0.107	0.494	Valid
US3	0.107	0.411	Valid
US4	0.107	0.399	Valid
NB1	0.107	0.358	Valid
NB2	0.107	0.693	Valid
NB3	0.107	0.710	Valid
NB4	0.107	0.679	Valid
TOTAL	1	1	Valid

From the data above it can be seen that the data is valid. Then proceed with reliability testing. Data is said to be reliable if it is at a value above 0.60. The followingis the result of the calculation with the help of the SPSS Statistics application.

Table 3, Result of Reliability Test

Reliability Statistics

Cronbach's Alpha	N of Items
0.905	24

The results show that the data is reliable because the output value is above 0.60.Then, advancing to the next stage is modeling on SPSS AMOS. Then do the Normalitytest. The data is said to be normal if the Kurtosis and Critical Ratio values are in the range of -2.58 to 2.58. Here are the test results.

Table 4, Assessment of normality

Variable	min	max	skew	c.r.	kurtosis	c.r.
US1	2,000	5,000	-,029	-,212	-,580	-2,156
US3	2,000	5,000	-,421	-3,133	-,303	-1,126
SR1	1,000	5,000	-,546	-4,059	,146	,544
SQ1	1,000	5,000	-,388	-2,887	-,607	-2,256
U3	1,000	5,000	-,567	-4,217	-,412	-1,532
SR2	2,000	5,000	,001	,010	-,526	-1,957
NB1	2,000	5,000	-,441	-3,281	-,436	-1,623
SQ4	1,000	5,000	-,671	-4,994	-,262	-,976
U2	1,000	5,000	-,455	-3,388	-,733	-2,727
U1	1,000	5,000	-,518	-3,855	-,367	-1,363
SR3	2,000	5,000	-,232	-1,724	-,491	-1,826
IQ4	2,000	5,000	-,316	-2,349	-,726	-2,699
SQ2	1,000	5,000	-,691	-5,137	,012	,045
NB4	2,000	5,000	-,299	-2,221	-,849	-3,158
NB3	2,000	5,000	-,206	-1,535	-,846	-3,147
NB2	2,000	5,000	-,251	-1,866	-,761	-2,831
US2	2,000	5,000	-,356	-2,646	-,426	-1,584
US4	2,000	5,000	-,320	-2,382	-,696	-2,590
U4	1,000	5,000	-,513	-3,815	-,462	-1,719
SR4	2,000	5,000	-,257	-1,909	-,640	-2,379
IQ1	1,000	5,000	-,139	-1,036	-,839	-3,120
IQ2	1,000	5,000	-,396	-2,948	-,733	-2,727
IQ3	2,000	5,000	,038	,279	-,992	-3,690
SQ3	1,000	5,000	-,576	-4,282	-,533	-1,981
Multivariate					5,991	1,545

The results show that the data is said to be normal because it fits the required value criteria. The final stage is testing the estimation of the model. Following are theresults of calculations performed with the help of SPSS AMOS. Here are the early models of AMOS

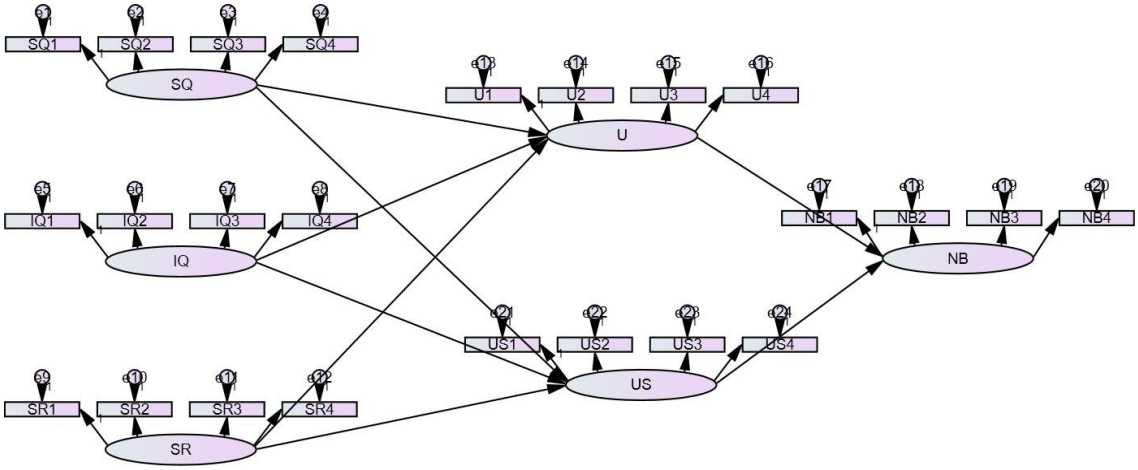

Figure 4. The initial model of research

Here the result of the model fit analysis of the initial model of research is explainedin Table 5.

Table 5, Model Fit Analysis for The Initial Model

Number	Criteria	Acceptance Level	Result	Info
1	Chi-Square(CMin)	Between Saturated & IndependenceModel	1030.533	Fitted
2	RMSEA	< 0.07	.097	Fitted
3	GFI	0 < result < 1.0	.811	Fitted
4	AGFI	0 < result < 1.0	.768	Fitted
5	CMIN/DF	0 < result < 1.0	4.223	Fitted

And there the result of the estimation test of the initial model of research is explained in Table 6. Critical ratio (C.R) points must be more than 2,000 and Probability Points (P) must be less than equal to 0.05.

Table 6, Estimation Analysis for The Initial Model

Hypothesis				Estimate	S.E.	C.R.	P	Info
H1	U	<---	SQ	0,302	0,11	2,752	0,006	significant
H2	US	<---	SQ	0,334	0,058	5,805	***	significant
H3	U	<---	IQ	0,042	0,131	0,323	0,747	not significant
H4	US	<---	IQ	0,375	0,064	5,858	***	significant
H5	U	<---	SR	0,169	0,128	1,323	0,186	not significant
H6	US	<---	SR	0,394	0,066	5,927	***	significant
H7	NB	<---	U	-0,006	0,016	-0,357	0,721	not significant
H8	NB	<---	US	0,412	0,095	4,34	***	significant

Based on the above model, it is known that the model already meets the fit criteriabut does not fulfill the model estimation test. Therefore, it is necessary to modify the model so that the values match the required criteria.

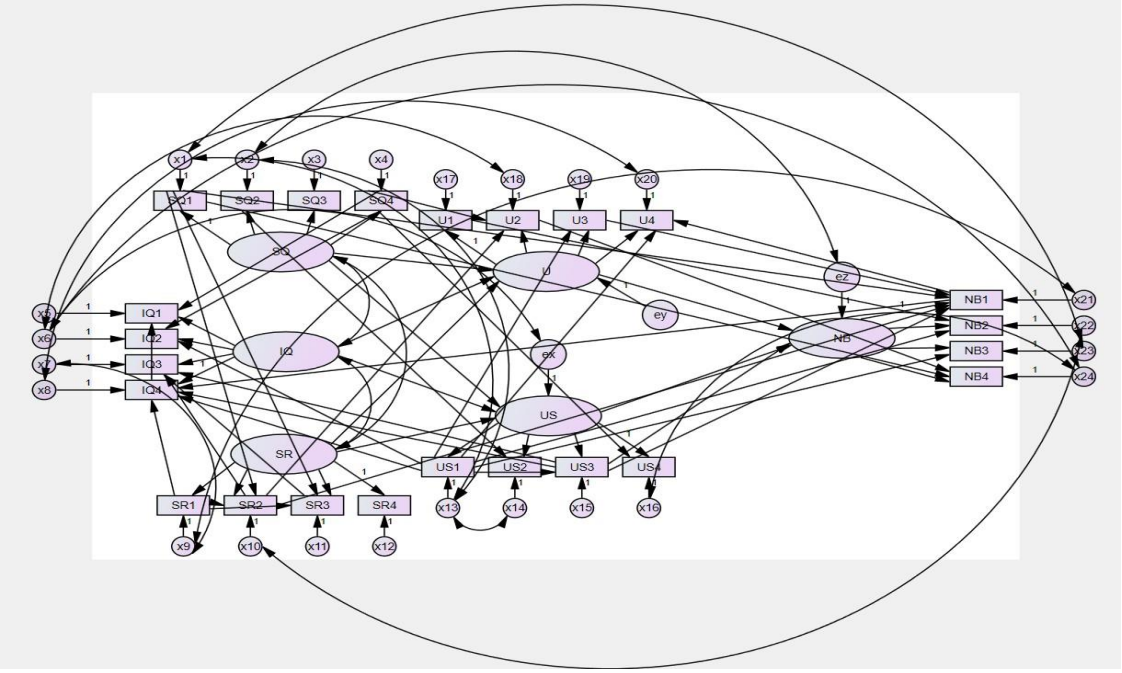

Figure 5. The modification model of research

After modifying the model, the following results of the fit model analysis can be seen in Table number 7.

Table 7, Model Fit Analysis for Modification Model

Number	Criteria	Acceptance Level	Result	Info
1	Chi-Square (CMin)	Between Saturated & Independence Model	170.316	Fitted
2	RMSEA	< 0.07	.000	Fitted
3	GFI	0 < result < 1.0	.960	Fitted
4	AGFI	0 < result < 1.0	.939	Fitted
5	CMIN/DF	0 < result < 1.0	.873	Fitted

And there the result of the estimation test of the initial model of research is explained in Table 8. Critical ratio (C.R) points must be more than 2,000 and Probability Points (P) must be less than equal to 0.05.

Table 8, Estimation Analysis for Modification Model

Hypothesis				Estimate	S.E.	C.R.	P	Info
H1	U	<---	SQ	0,85	0,323	2,628	0,009	significant
H2	US	<---	SQ	0,507	0,181	2,798	0,005	significant
H3	U	<---	IQ	-1,119	0,535	-2,091	0,037	significant
H4	US	<---	IQ	-0,487	0,319	-1,526	0,127	not significant
H5	U	<---	SR	0,737	0,347	2,12	0,034	significant
H6	US	<---	SR	0,655	0,225	2,917	0,004	significant
H7	NB	<---	U	-0,022	0,038	-0,578	0,563	not significant
H8	NB	<---	US	1,038	0,226	4,599	***	significant

Based on the results of the model test on the modified model, it is known that itmeets the fit test. However, in the model estimation test, only six hypotheses were accepted out of the eight hypotheses analyzed.

CONCLUSION

The results that can be concluded from testing the Google Classroom Application using the Delone and McLean Model approach, it is known that System Quality has a significant effect on Use and User Satisfaction, Information Quality has asignificant effect on Usage, Service Quality has a significant effect on User Use and Satisfaction, and Customer Satisfaction has a significant effect significant to NetBenefit. However, there is no significant effect between the relationship between Information Quality and Customer Satisfaction, and Use of Net Benefits. Based on theresults of research in the field, this is because at the research locations studied, the respondents thought the information presented was still inadequate, so that not all students and lecturers used it which resulted in no effect on net benefits.

REFERENCES

Albiladi, W. S., & Alshareef, K. K. (2019). Blended learning in english teaching and learning: A review of the current literature. *Journal of Language Teaching and Research*, *10*(2), 232–238. https://doi.org/10.17507/jltr.1002.03

Angelina, R. J., Hermawan, A., & Suroso, A. I. (2019). Analyzing E-Commerce Successusing DeLone and McLean Model. *Journal of Information Systems Engineering and Business Intelligence*, *5*(2), 156. https://doi.org/10.20473/jisebi.5.2.156-162

Awad, R., Aljaafreh, A., & Salameh, A. (2022). Factors Affecting Students' Continued Usage Intention of E-Learning During COVID-19 Pandemic: Extending Delone & Mclean IS Success Model. *International Journal of Emerging Technologies in Learning*, *17*(10). https://doi.org/10.3991/ijet.v17i10.30545

Buyse, M., Saad, E. D., Peron, J., Chiem, J. C., De Backer, M., Cantagallo, E., & Ciani,

O. (2021). The Net Benefit of a treatment should take the correlation between benefits and harms into account. *Journal of Clinical Epidemiology*, *137*. https://doi.org/10.1016/j.jclinepi.2021.03.018

Dahmash, N. Bin. (2020). 'I Couldn't Join the Session': Benefits and Challenges of Blended Learning amid COVID-19 from EFL Students. *International Journal of English Linguistics*, *10*(5). https://doi.org/10.5539/ijel.v10n5p221

Dziuban, C., Graham, C. R., Moskal, P. D., Norberg, A., & Sicilia, N. (2018). Blended learning: the new normal and emerging technologies. *International Journal of Educational Technology in Higher Education*, *15*(1). https://doi.org/10.1186/s41239-017-0087-5

Elsdaig, M., & Nassar, D. A. (2019). Evaluation of healthcare information system usingdelone and mclean quality model, case study ksa. *International Journal of Advanced Trends in Computer Science and Engineering*, *8*(1.4S1). https://doi.org/10.30534/ijatcse/2019/8181.42019

Firmansyah, D., Pasim Sukabumi, S., & Al Fath Sukabumi, S. (2022). Teknik Pengambilan Sampel Umum dalam Metodologi Penelitian: Literature Review. *Jurnal Ilmiah Pendidikan Holistik (JIPH)*, *1*(2), 85–114. https://doi.org/10.55927

Gonzales, R., & Wareham, J. (2019). Analysing the impact of a business intelligence system and new conceptualizations of system use. *Journal of Economics, Financeand Administrative Science*, *24*(48). https://doi.org/10.1108/JEFAS-05-2018-0052

Hoyle, R. H. (2012). *Handbook Structural Equation Modelling*.

Jamil, M. H., Tika, N., Fudjaja, L., Tenriawaru, A. N., Salam, M., Ridwan, M., Muslim, A. I., & Chand, N. V. (2023). Effectiveness of Agricultural Extension on Paddy Rice Farmer's Baubau City, Southeast Sulawesi, Indonesia. *Sustainability (Switzerland)*, *15*(4). https://doi.org/10.3390/su15043773

Konsep Dasar dan Aplikasi SEM dengan Amos 24 - Singgih Santoso - Google Books.(n.d.). Retrieved June 25, 2023, from https://books.google.co.id/books?hl=en&lr=&id=BLFfDwAAQBAJ&oi=fnd&pg=PP1&dq=tahapan+sem+analisis&ots=-c-ou3I7wr&sig=dwkyKop2pgSVx4d22X6Z--WV0EQ&redir_esc=y#v=onepage&q=tahapan%20sem%20analisis&f=false

Kurnianto, S., Kurniawansyah, D., & Fitri Ekasari, W. (2019). MENILAI KEBERHASILAN SISTEM KEUANGAN DESA (SISKEUDES): VALIDASI MODELKEBERHASILAN SISTEM INFORMASI DELONE DAN MCLEAN. *Jurnal Riset Akuntansi Dan Bisnis Airlangga*, *4*(2), 687–706. www.jraba.org

Kurniawan, E., & Tjhin, V. U. (2023). Measuring geospatial information system succes(„on individual performance impact. *Indonesian Journal of Electrical Engineering and Computer Science*, *30*(2). https://doi.org/10.11591/ijeecs.v30.i2.pp1128-1139

Lakens, D. (2022). Sample Size Justification. In *Collabra: Psychology* (Vol. 8, Issue 1). https://doi.org/10.1525/collabra.33267

Miftahul Janna, N. (2021). KONSEP UJI VALIDITAS DAN RELIABILITAS DENGAN MENGGUNAKAN SPSS. *OPAC (Perpustakaan STAI DDI Makasar)*.

Parnabhakti, L., & Puspaningtyas, N. D. (2021). PERSEPSI PESERTA DIDIK PADA MEDIA POWERPOINT DALAM GOOGLE CLASSROOM. *Jurnal Ilmiah Matematika Realistik (JI-MR*, *2*(1).

Prince, D. E., Dewodo, C., & Atiglah, P. B. (2020). ICT skills, and benefits of teaching and learning animal science with blended learning at colleges of education in Ghana. *Journal of Education and Learning (EduLearn)*, *14*(2). https://doi.org/10.11591/edulearn.v14i2.14921

Resti Anggraeni, W., Nessyana Debataraja, N., & Wira Rizki, S. (2018). ESTIMASI PARAMETER REGRESI RIDGE UNTUK MENGATASI MULTIKOLINEARITAS. In *Buletin Ilmiah Mat. Stat. dan Terapannya (Bimaster)* (Vol. 07, Issue 4).

Rosanti, I. A., & Marlius, D. (2023). Pengaruh Sistem Kerja, Kompensasi Dan Kesejahteraan Terhadap Kinerja Tenaga Outsourcing di Bank BNI Kota Padang. *Jurnal Publikasi Ilmu Manajemen (JUPIMAN)*, *2*(2), 152–168. https://doi.org/10.55606/jupiman.v2i2.1656

Sabeh, H. N., Husin, M. H., Kee, D. M. H., Baharudin, A. S., & Abdullah, R. (2021). A Systematic Review of the DeLone and McLean Model of Information Systems Success in an E-Learning Context (2010-2020). In *IEEE Access* (Vol. 9). https://doi.org/10.1109/ACCESS.2021.3084815

Salim, M., Alfansi, L., Anggarawati, S., Saputra, F. E., & Afandy, C. (2021). The role ofperceived usefulness in moderating the relationship between the delone and mclean model and user satisfaction. *Uncertain Supply Chain Management*, *9*(3). https://doi.org/10.5267/j.uscm.2021.4.002

Waluyo, M. (2016). *Mudah Cepat Tepat Penggunaan Tools Amos dalam Aplikasi SEM*.Zailani, A. U., Husain, T., & Budiyantara, A. (2020). Analisis Simulasi Sistem PenunjangKeputusan: Model Matematis Dengan Pendekatan Goodness-of Fit Berbasis Structural Equation Model. *SMARTICS Journal*,*6*(1), 10–14. https://doi.org/10.21067/smartics.v6i1.4157