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ABSTRACT

This study addresses the acceptance of the features of graphic design applications by students in Arts and Culture learning, while scrutinizing the creative context relevance of the utilitarian technology acceptance constructs. This study employed an explanatory sequential mixed-methods approach and combined quantitative PLS-SEM analysis and qualitative data from semi-structured interviews with students. The quantitative study involved 552 high school students, and sought to measure the relationship of intrinsic motivation, perceived ease of use and usefulness, self-efficacy, and acceptance of features of applications. This study was also employed to understand and contextualize the phenomena represented by the quantitative data. The results of the study indicate intrinsic motivation and ease of use by a considerable margin, the strongest predictors of students' acceptance of features of graphic design applications, with self-efficacy being supportive and peripheral, while perceived usefulness, in contrast, had no apparent effect. Participants primarily viewed graphic design applications as environments for creative and playful visual exploration, and not as applications that support or enhance performance. These experiential orientations also explain the low perceived usefulness that was observed in the quantitative model. The study illustrates the context-specific boundaries of utilitarian technology acceptance models within the field of arts-based learning environments. In terms of methodology, it illustrates the benefits of mixed-methods inquiry for examining acceptance constructs beyond shallow validation. From a practical perspective, the findings indicate that the digital tools designed for Arts and Culture education should emphasize supportive intuitive interaction, creative flexibility, and experiential value in order to cultivate meaningful student engagement.

Contribution/Originality: This study contributes to technology acceptance research in Arts and Culture education using PLS-SEM, demonstrating that intrinsic motivation and perceived ease of use outweigh perceived usefulness in students' acceptance of graphic design application features, and highlighting the contextual limits of utilitarian acceptance models in creative learning environments.

1. INTRODUCTION

The rapid expansion and integration of digital technologies have reshaped how learning is organized, delivered, and experienced across educational contexts. Within educational technology research, students' engagement with digital tools has most frequently been examined through the Technology Acceptance Model (TAM) and its extensions, which identify perceived usefulness and perceived ease of use as central predictors of adoption and

continued use (Davis, 1989; Davis, Bagozzi, & Warshaw, 1989; Venkatesh, Morris, Davis, & Davis, 2003). These models are rooted in a predominantly utilitarian logic, where technologies are evaluated in terms of efficiency, performance enhancement, and task completion. Although this perspective has generated substantial empirical insight in performance-oriented learning environments, its applicability to creative and arts-based contexts remains insufficiently examined.

Arts and Culture education occupies a distinctive epistemic space within formal schooling. Rather than prioritizing instrumental outcomes, learning in this domain emphasizes aesthetic experience, creative exploration, emotional engagement, and symbolic meaning-making (Eisner, 2002; Greene, 2001). Learning processes are often interpretive, exploratory, and experiential, involving sustained interaction with visual and expressive forms. As a result, students' engagement with digital technologies in arts education may be shaped less by instrumental evaluation and more by experiential and affective orientations, raising questions about the suitability of dominant technology acceptance frameworks in this context (Loughran, 2019).

Graphic design applications such as Canva and Adobe Illustrator have become increasingly embedded in Arts and Culture learning at both secondary and post-secondary levels. These tools provide accessible environments for visual experimentation and creative expression, enabling students to manipulate images, typography, color, and composition. While prior studies have acknowledged the pedagogical benefits of such tools, particularly in terms of usability and visual clarity (Kędra & Źakevičiūtė, 2019; Pedroso, Sulleza, Francisco, Noman, & Martinez, 2023), their adoption has largely been interpreted through generalized technology acceptance perspectives. Limited attention has been given to whether utilitarian acceptance constructs adequately capture the experiential and creative dimensions that characterize arts-based learning.

Addressing this gap, the present study examines students' acceptance of graphic design application features in Arts and Culture education using an explanatory sequential mixed-methods design. By integrating quantitative structural modeling with qualitative exploration of students' lived experiences, the study seeks to critically assess the relevance and boundaries of utilitarian acceptance constructs within a creative learning environment. In doing so, the research situates technology acceptance within the affective, experiential, and creative conditions that shape digital engagement in arts education.

To guide the investigation, the study addresses the following research questions.

RQ1: To what extent do intrinsic motivation, perceived ease of use, perceived usefulness, and self-efficacy influence students' acceptance of graphic design application features in Arts and Culture learning?

RQ2: How do students experience and interpret their engagement with graphic design applications in creative learning contexts?

RQ3: In what ways do qualitative insights help explain the relative influence or limitation of utilitarian acceptance constructs in arts-based learning environments?

2. LITERATURE REVIEW

2.1. *Technology Acceptance and Its Utilitarian Foundations*

The Technology Acceptance Model (TAM) has become one of the most influential frameworks in educational technology research for explaining users' adoption and continued use of digital systems. By positioning perceived usefulness and perceived ease of use as primary determinants of behavioral intention, TAM conceptualizes acceptance as a largely rational evaluation of technological efficiency and performance enhancement (Davis, 1989; Venkatesh et al., 2003). This orientation has been particularly productive in structured and performance-driven learning environments where measurable outcomes are central.

However, the dominance of this utilitarian framing has also attracted sustained critique. Scholars argue that TAM privileges instrumental reasoning while insufficiently accounting for affective, contextual, and experiential dimensions of technology use (Bagozzi, 2007; Benbasat & Barki, 2007). In environments characterized by exploration

and creativity, the assumption that users primarily evaluate tools based on performance improvement may be overly restrictive (Chuttur, 2009; Sun & Zhang, 2006). Empirical studies further suggest that perceived usefulness operates differently across domains, indicating that acceptance constructs are not universally stable but context-sensitive (Straub, Boudreau, & Gefen, 2004). These critiques do not dismiss TAM outright but highlight the need to examine its boundaries in learning contexts where instrumental rationality is not the dominant evaluative logic.

2.2. Intrinsic Motivation and Experiential Engagement in Creative Learning

In contrast to performance-centered models, research in creative and arts-related domains consistently emphasizes intrinsic motivation, enjoyment, and exploratory engagement as central drivers of learning behavior (Deci & Ryan, 2008; Lai, 2021; Ryan & Deci, 2000). Within such environments, technologies are often valued for the opportunities they provide for experimentation, aesthetic expression, and meaning-making rather than for efficiency gains. Engagement emerges through curiosity, play, and personal investment, suggesting that learners' evaluative criteria may extend beyond utilitarian considerations.

Arts and Culture education exemplifies this experiential orientation. Creative tasks frequently involve interpretive processes, symbolic negotiation, and iterative experimentation (Burnard, Colucci-Gray, & Cooke, 2021). In these settings, ease of use may function less as a productivity enhancer and more as an enabling condition for creative exploration. Similarly, intrinsic motivation may shape acceptance more strongly than performance-based judgments. Such dynamics raise questions about whether perceived usefulness, as traditionally operationalized, fully captures the evaluative logic of learners in arts-based contexts.

2.3. Gaps in Technology Acceptance Research within Arts Education

Despite growing recognition of affective and experiential dimensions of learning, empirical research in arts education continues to rely heavily on established acceptance models with limited theoretical adaptation. Many studies employ quantitative modeling in generalized digital learning contexts, often treating creative subjects as extensions of broader e-learning environments rather than as epistemically distinct domains. Even in mixed-methods research, qualitative findings are frequently positioned as complementary rather than as tools for critically interrogating or refining acceptance constructs (Teo, 2011; Winner, Goldstein, & Vincent-Lancrin, 2013).

As a result, there remains limited empirical evidence explaining how and why technology acceptance constructs operate differently in arts-based learning. In particular, few studies have systematically examined whether intrinsic motivation, perceived ease of use, and perceived usefulness hold equivalent explanatory power in creative domains. Given the centrality of aesthetic engagement, visual literacy, and affective involvement in Arts and Culture education, this gap warrants closer examination.

The present study responds to this need by re-examining acceptance constructs within a creative learning environment, with specific attention to the relative influence of intrinsic motivation, perceived ease of use, perceived usefulness, and self-efficacy in shaping students' acceptance of graphic design application features.

3. METHODOLOGY

3.1. Research Design

This study employed an explanatory sequential mixed-methods design in which quantitative analysis was conducted first, followed by qualitative inquiry to explain and contextualize the quantitative findings (Creswell & Clark, 2018). The design was selected to examine not only the statistical relationships among technology acceptance constructs but also their explanatory relevance within an arts-based learning context. Rather than positioning qualitative data as merely confirmatory, the mixed-methods approach was used to provide interpretive insight into how students experience and make sense of their engagement with graphic design applications.

The quantitative phase focused on modeling the relationships among intrinsic motivation, perceived ease of use,

perceived usefulness, self-efficacy, and students' acceptance of graphic design application features. The subsequent qualitative phase provided explanatory depth by clarifying patterns that were not fully captured by the quantitative model, particularly regarding the relative influence of specific acceptance constructs.

3.2. Participants and Context

The participants for the quantitative phase consisted of 552 students from Semarang City Senior High School, including SMA N 12, SMA N 14, SMA N 9, SMA Teuku Umar, and SMA Mardisiswa. The students are in Grades 10-12 and have utilized graphic design applications, mainly Canva, as part of the Arts and Culture learning activities. A stratified randomized sampling technique was utilized, and school and grade level were used as strata to guarantee even distribution across the different institutional and academic tiers.

The age of the participants was between 15 and 19 years, with 59% female and 41% male participants. About 50% of the participants claimed to have experience with graphic design apps for over 6 months, which is suggestive of a moderate to high familiarity level with digital design tools. The Arts and Culture learning context focused on visual communication, creative investigation, and project-based learning activities, which was a suitable context for exploring the acceptance of technology beyond the instrumental learning goals.

3.3. Quantitative Data Collection and Measures

For the purpose of this study, quantitative data were collected using a questionnaire, which the respondents filled out after the completion of the learning activities in Arts and Culture, which included the use of graphic design applications. All items used a 5-point Likert scale from 1 (strongly disagree) to 5 (strongly agree). The constructs included in the instrument were: intrinsic motivation, ease of use, usefulness, self-efficacy, and acceptance of the features of the applications.

To ensure conceptual alignment and content validity, measurement items were taken from previously validated studies in educational technology and motivational research. Some intrinsic motivation items measured students' enjoyment, interest, and engagement in the application of graphic design (Lai, 2021; Ryan & Deci, 2000). Regarding the literature on technology acceptance, perceived usefulness and ease of use were defined and operationalized (Davis, 1989; Venkatesh et al., 2003). Self-efficacy items measured students' confidence in the use of digital learning tools (Bandura, 1997). Application feature acceptance was centered on students' judgment on the visual clarity, navigation, and usability of design-related functionalities.

All items were translated into Indonesian and evaluated by experts in the domain to ensure clarity of the language and context with respect to high school students. Before the actual data collection, a pilot test was done to ensure that the items were comprehensible.

3.4. Quantitative Data Analysis

Quantitative data were analyzed using Partial Least Squares Structural Equation Modeling (PLS-SEM) in SmartPLS 4. PLS-SEM was selected due to its suitability for predictive analysis involving latent constructs and multiple interrelated variables, as well as its robustness to violations of multivariate normality (Hair, Hult, Ringle, & Sarstedt, 2017). In this study, the method was employed to examine the relative contribution of established technology acceptance constructs within a creative learning context rather than to revalidate the TAM measurement model.

The measurement model was evaluated following established PLS-SEM guidelines, including assessments of indicator reliability, internal consistency reliability, convergent validity, and discriminant validity (Hair et al., 2017). While several indicators exhibited loadings below the conventional 0.70 threshold, items above 0.50 were retained when theoretically justified, consistent with exploratory applications of PLS-SEM in educational research. This approach acknowledges the potential heterogeneity of experiential and affective constructs within creative learning

environments. Structural model evaluation included the examination of path coefficients, t-values, and p-values obtained through bootstrapping with 5,000 resamples. Model explanatory power was assessed using the coefficient of determination (R^2), and effect sizes were evaluated through f^2 statistics. Collinearity was examined using variance inflation factor (VIF) values, and predictive relevance was assessed via blindfolding procedures (Q^2).

3.5. Qualitative Phase

3.5.1. Participant Selection and Data Collection

After the statistical analysis, a qualitative phase was undertaken to provide an explanation and context for the statistics. From the quantitative sample, 15 students were purposefully selected employing a maximum variation sampling technique to capture diversity across gender, grade, and the length of time spent using graphic design applications. This method was used to obtain a range of experiential diversity, rather than to capture a representative sample statistically.

Semi-structured interviews were used to collect qualitative data. Each interview was approximately 15-25 min long. The interviews were focused on the students' experiences with the various features of the graphic design applications and prompts included, enjoyment, ease of navigation, creative exploration, and confidence in completing the learning tasks. Before the interviews, all participants signed informed consent forms, and the interviews were recorded and transcribed.

3.5.2. Qualitative Data Analysis and Integration

The qualitative data were analyzed using thematic analysis, based on the procedures of Braun and Clarke (2006). The initial phase and subsequent steps of analysis of the data were completed through the stages of the Braun and Clarke (2006) framework to ensure the analysis remained true to the methodology. The analysis of the qualitative data, rather than stating generalizations based on the number of occurrences, focused on identifying and explaining particular experiences that helped to illustrate or raise concerns about the quantitative findings.

In line with an explanatory sequential mixed-methods framework (Creswell & Clark, 2018), integration of quantitative and qualitative findings was done at the interpretation stage. The qualitative themes helped to shed light on the acceptance constructs, more specifically, the perceived usefulness, and the explanatory power of the quantitative model, and the perceived usefulness. The qualitative themes also helped to contextualize how students articulate their engagement with the features of the graphic design applications in Arts and Culture learning.

3.6. Ethical Considerations

Ethical approval for the study was obtained from the relevant institutional review body. The participation was voluntary, and students were briefed on the research objectives and procedures, and their right to withdraw at any stage. The students provided written informed consent, and in some cases, parents and guardians had to provide it. For the purposes of confidentiality, all data were anonymized and were used purely for research purposes.

4. RESULTS AND FINDINGS

In this section, the findings of the study are presented as per the explanatory sequential mixed-methods design. The study aims to provide a more integrated approach in presenting quantitative and qualitative findings, as opposed to presenting the two as separate and distinct entities. The study aims to present the two as distinct entities in order to enhance the statistical patterns with the students' lived experiences.

The quantitative study involved 552 students from five public and private institutions in Semarang City, Indonesia, with approximately equal distribution across schools. The participants included students from SMA N 12 (24.1%), SMA N 14 (20.8%), SMA N 9 (20.3%), SMA Teuku Umar (13%), and SMA Mardisiswa (21.7%).

Most participants were aged from 15 to 17 years, in line with the typical age of senior high school students. The sample comprised 59% of female students and 41% of male students. In terms of the respondents' distribution across the grades, close to 50% were from Grade X, followed by Grade XII and Grade XI, signifying a greater sample representation from the beginning and the end of secondary education.

Concerning the participants of the study, most of the students reported that they had been using graphic design applications for more than six months, indicating that they were at least moderately to highly familiar with digital design programs. The main reasons they mentioned for using graphic design applications were to assist learning and complete school assignments; teacher recommendation and personal interest were minor reasons. In terms of design applications, the majority of students used Canva compared to a minority who used more sophisticated design applications.

These characteristics suggest that the respondents interacted with graphic design applications mainly in educational settings rather than in any professional or specialized design environment. This background is useful for interpreting the subsequent structural delineations and the qualitative insights concerning students' willingness to accept application features.

Table 1. Frequency distribution of sample data.

Characteristic	Item	Total	Percentage (%)
School	SMA N 12	133	24.1%
	SMA N 14	115	20.8%
	SMA N 9	112	20.3%
	SMA Teuku Umar	72	13%
	SMA Mardisiswa	120	21.7%
Age	15 years old	210	38%
	16 years old	151	27%
	17 years old	154	28%
	18 years old	36	7%
	19 years old	1	0.1%
Gender	Female	325	59%
	Male	227	41%
Grade	X	268	49%
	XI	90	16%
	XII	194	35%
Usage Time	>6 months	272	49%
	1-3 months	202	37%
	3-6 months	78	14%
Reason	Supporting the learning	227	41%
	Task demand	170	31%
	Teachers' recommendation	87	16%
	Training the hobby	68	12%
Application Type	Canva	481	87%
	Photoshop	41	7%
	Adobe Illustrator	20	4%
	CorelDraw	10	2%

Table 1 presents the frequency distribution of the sample characteristics, including school affiliation, age, gender, grade level, duration of application use, reasons for use, and types of graphic design applications utilized by students. The table shows that the sample is relatively well distributed across schools, with the largest proportion coming from SMA N 12 (24.1%) and SMA Mardisiswa (21.7%). Most participants are aged between 15 and 17 years, with a predominance of female students (59%). In terms of experience, nearly half of the respondents have used graphic design applications for more than six months (49%), indicating a moderate to high level of familiarity. Canva emerges as the dominant application (87%), reflecting its accessibility and relevance within the Arts and Culture learning context.

4.1. Reliability and Validity Test (Revised)

Before testing the structural model, the measurement model was evaluated to see the dimensions of the constructs of the research model for reliability and validity. Reliability was assessed using indicator loadings and measures of internal consistency, specifically, Cronbach's alpha, and composite reliability, according to the guidelines of PLS-SEM (Hair et al., 2017). The results show that the Perceived Usefulness (PU) construct has good psychometric properties. The indicators of the PU construct have good factor loadings. Moreover, the construct has an alpha of 0.900, a composite reliability of 0.930, and a mean variance extracted (AVE) of 0.769. Since these values meet the required thresholds, it can be concluded that the construct has good internal consistency and convergent validity.

There are some indicators for the Feature of Application (FA), Intrinsic Motivation (IM), Perceived Ease of Use (PEU), and Self-Efficacy Motivation (SEF) constructs that have factor loadings between 0.52 and 0.62. Though this range of loadings does not meet the 0.70 cut-off for sufficient loadings, they are still considered acceptable, especially for exploratory PLS-SEM studies that deal with subjective and experiential phenomena in the educational domain (Ghozali & Latan, 2015). The theoretical relevance of the indicators was considered to maintain appropriate representation of the underlying constructs. Convergent validity was also checked with AVE values. Three constructs met the recommended average of 0.50: PU (0.769), IM (0.508), and SEF (0.521). On the other hand, AVE values for FA (0.469) and PEU (0.495) are just below the requested thresholds, but given the exploratory nature of this study and the supportive qualitative findings, they are considered marginally acceptable. Fornell–Larcker criterion and the HTMT ratio evaluate discriminant validity. The Fornell–Larcker results show that for every construct, the AVE square root is greater than the inter-construct correlation. All HTMT values are also below the threshold of 0.90, which means there are no major issues with the constructs related to discriminative validity (Henseler, Hubona, & Ray, 2016). The measurement model is reliable and valid, leading to conclusions about technology acceptance in an arts-based learning environment. The combination of qualitative and quantitative analyses, especially for the findings that are most affected by the experiential and affective components, provides greater confidence in the results.

Table 2. Measurement model assessment results.

Construct	Item	Loading	Cronbach's alpha	Composite reliability (rho_c)	AVE
Feature of Application (FA)	FA 1	0.572	0.657	0.663	0.469
	FA 10	0.562			
	FA 2	0.582			
	FA 3	0.553			
	FA 4	0.541			
	FA 5	0.604			
	FA 6	0.578			
	FA 7	0.593			
	FA 8	0.592			
	FA 9	0.522			
Intrinsic Motivation (IM)	IM 1	0.579	0.610	0.636	0.508
	IM 2	0.589			
	IM 3	0.612			
	IM 4	0.596			
Perceived Ease of Use (PEU)	PEU 1	0.578	0.601	0.631	0.495
	PEU 2	0.574			
	PEU 3	0.621			
	PEU 4	0.571			
Perceived Usefulness (PU)	PU 1	0.883	0.900	0.930	0.769
	PU 2	0.872			
	PU 3	0.898			
	PU 4	0.854			
Self-Efficacy Motivation (SEF)	SEF 1	0.601	0.617	0.641	0.521
	SEF 2	0.606			
	SEF 3	0.597			
	SEF 4	0.601			

The results from the Assessment of the Measurement Model using Partial Least Squares Structural Equation Modeling (PLS-SEM) are displayed in Table 2. In the table, the author presents the indicator loadings, Cronbach's alpha, Composite Reliability, and Average Variance Extracted (AVE) for each of the constructs. In accordance with theory and the guidelines for exploratory PLS-SEM, the author kept indicators with loadings greater than 0.50.

Table 3. Discriminant validity (Fornell–Larcker).

Construct	AVE	FA	IM	PEU	PU	SEF
Features of application (FA)	0.469	0.570				
Intrinsic motivation (IM)	0.508	0.541	0.594			
Perceived ease of use (PEU)	0.495	0.533	0.530	0.586		
Perceived usefulness (PU)	0.769	0.494	0.540	0.534	0.609	
Self-efficacy motivation (SEF)	0.521	0.504	0.542	0.525	0.528	0.601

Table 3 illustrates the evaluation of discriminant validity based on the Fornell–Larcker criterion. The values on the diagonal show the square root of the Average Variance Extracted (AVE) for each construct, while the values off the diagonal show the correlations between different constructs. The square root of the AVEs is greater than the inter-construct correlations, indicating that discriminant validity holds.

Table 4. Heterotrait–monotrait ratio (HTMT).

Construct	FA	IM	PEU	PU	SEF
Features of application (FA)					
Intrinsic motivation (IM)	0.592				
Perceived ease of use (PEU)	0.588	0.606			
Perceived usefulness (PU)	0.535	0.608	0.603		
Self-efficacy motivation (SEF)	0.549	0.614	0.597	0.590	

In Table 4, the values of the Heterotrait–Monotrait Ratio (HTMT) are reported to assess the in-built discriminant validity among the constructs. Given that all HTMT values are below the stringent threshold of 0.90, it can be concluded that the model sufficiently establishes discriminant validity.

4.2. Structural Equation Modeling Analysis (Revised)

Before analyzing the structural relationships, collinearity among the predictor constructs was evaluated to determine if bias in the path coefficient estimations due to multicollinearity would be an issue. The variance inflation factors (VIF) of each of the constructs ranged from values of 1.942 to 2.112, which is well below the conservative cut-off of 5. Thus, collinearity is not an issue for the structural model.

In line with Partial Least Squares Structural Equation Modeling (PLS-SEM) guidelines, model evaluation emphasized predictive and explanatory power rather than global goodness-of-fit criteria typical of covariance-based SEM (Hair et al., 2017). Model adequacy was assessed using approximate fit indicators, including the Standardized Root Mean Square Residual (SRMR), RMS_theta, and the Normed Fit Index (NFI).

The SRMR value of 0.054 indicates an acceptable model fit, as it falls below the recommended threshold of 0.08 (Hu & Bentler, 1999). The RMS_theta value (0.107) suggests acceptable reflective measurement model quality, remaining below the recommended threshold of 0.12 (Henseler et al., 2016). The NFI value (0.597) is reported as supplementary information, as this index is sensitive to model complexity and sample characteristics in PLS-SEM.

Overall, the approximate fit indices and collinearity diagnostics suggest that the proposed structural model is adequate to be used for prediction and exploration in the context of PLS-SEM. These results will allow for the examination of structural path relationships and explained variance to proceed.

Table 5. Collinearity assessment (Variance Inflation Factor).

Construct	VIF
Features of application (FA)	1.942
Intrinsic motivation (IM)	1.942
Perceived ease of use (PEU)	2.112
Perceived usefulness (PU)	2.112
Self-efficacy motivation (SEF)	1.942

The variance inflation factor (VIF) in Table 5 shows the evaluation of collinearity in the structural model. Because all VIF values are below the five threshold, the PLS-SEM analysis indicates that multicollinearity is not an issue for the predictor constructs.

Table 6. Approximate model fit indices.

Fit Index	Value	Recommended Threshold
SRMR	0.054	< 0.08
NFI	0.597	Supplementary
RMS_theta	0.107	< 0.12

Table 6 summarizes the model fit indices, indicating adequate fit for exploratory and predictive analysis.

4.3. Path Analysis

The relationships between each of the constructs were evaluated using Partial Least Squares Structural Equation Modeling (PLS-SEM). The significance of the paths was determined via a bootstrapping technique, which is used to compute and test the significance of each path coefficient (Hair et al., 2017).

Intrinsic motivation is a strong positive predictor of the Feature of Application, and is attributed the highest positive impact out of the predictor variables. The relationship between perceived ease of use and the feature of the application is also positive and significant, which implies that students' assessments of the features of an application are aligned largely with how simple and easy the interface is to navigate. The influence of self-efficacy is positive and minimal, meaning that self-efficacy had an indirectly supportive role in feature acceptance.

On the contrary, perceived usefulness does not show any impact with statistical significance on the Feature of Application. This means that evaluations of performance improvement or any other functional benefit were not critical to the students' acceptance of the graphic design application features within the context of Arts and Culture learning.

In general terms, the configuration of pathway correlations indicates that the acceptance of application features is primarily motivated by experiences and feelings, rather than the more rational features such as usefulness or functionality. These correlations provide a constructive interpretative framework regarding the model's explanatory strength and the contextual significance of the results.

The hypotheses testing results, along with the path coefficients, can be found in Table 7, and the structural model's R^2 , as well as f^2 values, can be found in Table 8.

Table 7. Path analysis verification.

Correlation	Path Coefficient	T-Value	P-Value	Hypothesis
IM -> FA	0.253	5.163	<0.001	H1 Supported
PEU -> FA	0.233	7.288	<0.001	H2 Supported
PU -> FA	0.065	1.013	0.216	H3 Not Supported
SEF -> FA	0.097	2.120	0.034	H4 Supported

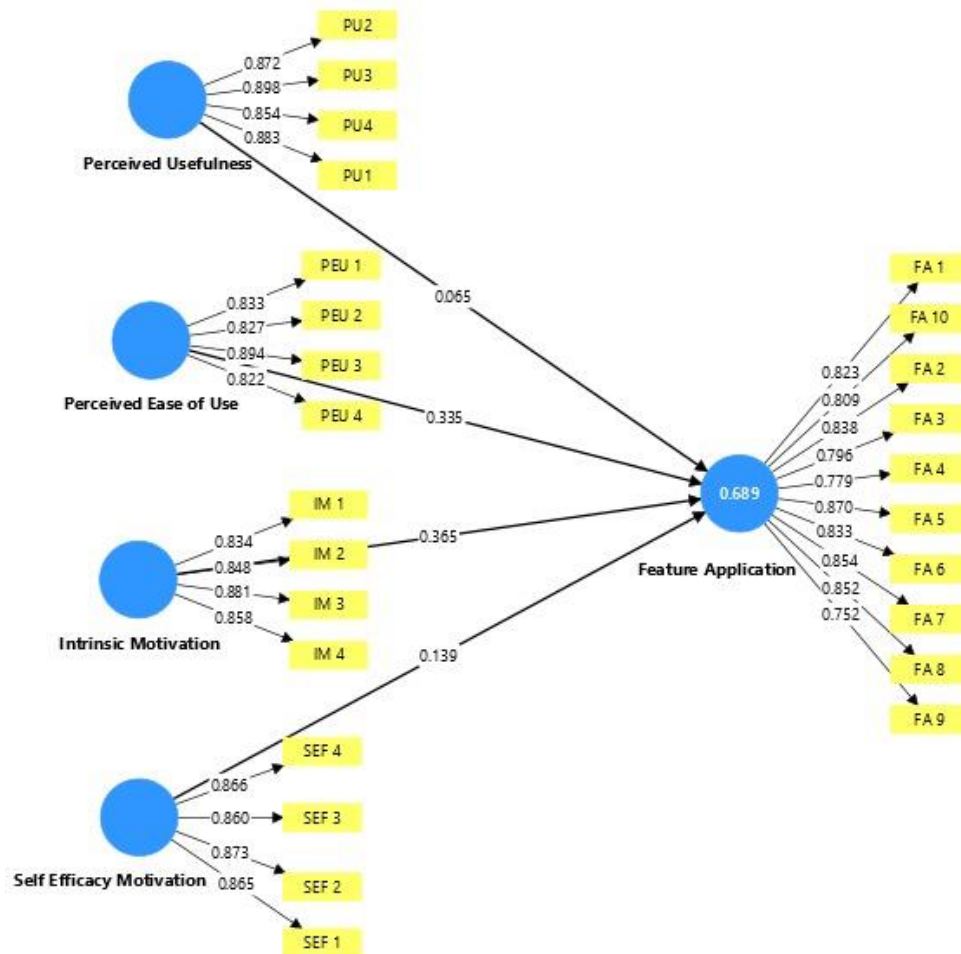


Figure 1. SEM PLS model analysis diagram.

Figure 1 illustrates the structural model of the PLS-SEM analysis, showing the relationships among intrinsic motivation, perceived ease of use, perceived usefulness, self-efficacy, and the acceptance of application features. The diagram presents the direction and strength of the path coefficients, highlighting intrinsic motivation and perceived ease of use as the most influential predictors, while perceived usefulness does not exhibit a significant effect.

Table 8. R² value and f² value.

Correlation	R ²	R ² Adjusted	f ²
Feature of application	0.689	0.686	
IM → FA			0.123
PEU → FA			0.113
PU → FA			0.004
SEF → FA			0.019

The Intrinsic Motivation (IM) has a positive impact on Feature of Application (FA) ($\beta = 0.253$, $t = 5.163$, $p < 0.001$). This corresponds to the strongest impact among the other variables, showing the role of students' enjoyment and personal involvement in determining the acceptance of the application features of a graphic design tool. Perceived Ease of Use (PEU) also positively impacts FA ($\beta = 0.233$, $t = 7.288$, $p < 0.001$), supporting H2 and reiterating the value of simple and intuitive operational design in students' assessments.

Self-Efficacy Motivation (SEF) also positively impacts FA ($\beta = 0.097$, $t = 2.120$, $p = 0.034$), supporting H4, even though this impact is relatively weaker compared to the other variables, suggesting that self-efficacy plays more of a supporting role, rather than a major influence in determining acceptance of application features.

On the contrary, Perceived Usefulness (PU) does not affect FA ($\beta = 0.065$, $t = 1.013$, $p = 0.216$), which means H3 is not supported. This outcome shows improvement in performance evaluations, or the functional benefit, did not hinge on the acceptance of the students on the features of graphic design applications in the Arts and Culture learning context.

The model's explanatory power is reflected in an R^2 value of 0.689 (adjusted $R^2 = 0.686$) for Feature of Application. Intrinsic Motivation, Perceived Ease of Use, Perceived Usefulness, and Self-Efficacy Motivation, together, account for 68.9 percent of the variance in students' acceptance of the features of an application. This is a considerable explanatory power in the context of a PLS-SEM framework (Hair et al., 2017).

Analyzing effect sizes (f^2) for each study construct shows specific allocation for each component. Among all the variables, the strongest contributors to the model were the Intrinsic Motivation ($f^2 = 0.123$) and Perceived Ease of Use ($f^2 = 0.113$) variables to the model, indicating small to moderate practical impacts. Self-Efficacy Motivation shows a small effect ($f^2 = 0.019$) and Perceived Usefulness shows a small effect ($f^2 = 0.004$), which can be considered negligible. Overall, these analysis results show that the factors most impacting students' acceptance of certain features of the graphic design application are intrinsic motivation and ease of use, not the perceived usefulness.

4.4. Qualitative Findings

Qualitative analysis of the semi-structured interviews with students was the next stage of the explanatory sequential mixed-methods design, and this will be reported next. In this case, the analysis of qualitative data was used to explore the quantitative results and for the contextualization of the results, focusing on intrinsic motivation, the perceived ease of use, self-efficacy, and the perceived usefulness of the features of the graphic design app, which was suggested as not useful for the students in the context of the Arts and Culture.

The qualitative results are structured as themes to pinpoint patterns in the participants' experiences. Instead of focusing on possible statistical generalization, the qualitative part adds an explanatory layer by describing students' perceptions and interactions with the graphic design application feature during the learning task. The themes identified correspond to the experiential orientations and help explain the prominence of specific acceptance constructs in the quantitative analyses.

The qualitative results demonstrate the emotional and experiential dimensions underlying students' acceptance of the features of graphic design applications and, in this regard, provide important feedback to refine the structural results and the mixed methods analysis coherence.

Table 9. Qualitative themes and descriptions.

Theme	Analytical Focus	Indicative Description
Intrinsic Enjoyment as the Primary Driver	Affective engagement and enjoyment	Students tend to experience graphic design application features as enjoyable and stimulating, encouraging exploration, creativity, and sustained engagement in Arts and Culture learning activities.
Ease of Use as an Enabler of Creative Activity	Usability and accessibility	Simple navigation and intuitive interfaces reduce technical barriers, allowing students to focus on creative expression rather than operational difficulties when using application features.
Confidence Development through Feature Exploration	Self-efficacy and autonomy	Successful completion of learning tasks using application features strengthens students' confidence and supports independent exploration of digital tools.
Usefulness as a Secondary Consideration	Experiential versus utilitarian value	Students rarely prioritize performance improvement or efficiency when evaluating application features, placing greater emphasis on experiential, visual, and creative engagement.

Table 9 presents the qualitative themes derived from the thematic analysis, along with their analytical focus and indicative descriptions. The table summarizes students' experiences with graphic design applications, emphasizing intrinsic enjoyment as the primary driver, ease of use as a facilitating condition, the development of confidence through feature interaction, and the secondary role of perceived usefulness. These themes provide an interpretive framework for understanding the experiential dimensions underlying students' acceptance of application features.

Table 10. Integration of qualitative themes with quantitative findings.

Qualitative Theme	Related quantitative finding	Explanatory Role in Mixed-Methods Analysis
Intrinsic enjoyment as the primary driver	IM $\rightarrow$ FA ($\beta = 0.253$; $f^2 = 0.123$)	Explains why intrinsic motivation emerged as the strongest predictor of students' acceptance of graphic design application features.
Ease of use as an enabler of creative activity	PEU $\rightarrow$ FA ($\beta = 0.233$; $f^2 = 0.113$)	Clarifies how ease of use facilitates creative engagement and supports feature acceptance.
Confidence development through feature exploration	SEF $\rightarrow$ FA ($\beta = 0.097$; $f^2 = 0.019$)	Explains the positive but relatively small contribution of self-efficacy to feature acceptance.
Usefulness as a Secondary Consideration	PU $\rightarrow$ FA ($\beta = 0.065$; $f^2 = 0.004$; not supported)	Explains the non-significant role of perceived usefulness in arts-based learning contexts.

Table 10 presents the integration of qualitative themes with quantitative findings, demonstrating how qualitative insights explain the statistical relationships observed in the structural model. Each theme is aligned with corresponding path coefficients and effect sizes, clarifying the dominant role of intrinsic motivation and perceived ease of use, the supporting contribution of self-efficacy, and the non-significant influence of perceived usefulness in the context of arts-based learning.

4.5. Integration of Quantitative and Qualitative Findings

Following the explanatory sequential mixed-methods design, the integration of qualitative findings and quantitative results occurred at the interpretation stage to help make sense of the acceptance of graphic design applications in the case of Arts and Culture learning from the perspective of students. The purpose of this integration was to answer the how and why questions related to the acceptance constructs that positively or negatively impacted the structural model differently.

The quantitative findings revealed the presence of strong predictive relationships of intrinsic motivation and perceived ease of use with the Feature of Application, a smaller yet positive predictive relationship from self-efficacy, and a lack of predictive relationship from perceived usefulness. With the qualitative findings, it was revealed that students see graphic design applications as spaces they can use to be creative and play with different visuals. Students spoke of their satisfaction and creative play, and even their motivational feelings, which helped illuminate why intrinsic motivation was so important to the quantitative model.

In much the same way, the effect of perceived ease of use is explained by students describing the interface, layout, and navigation as easy to use. Qualitative data suggest that ease of use functions as an enabling condition, allowing students to articulate their priorities into creative expression rather than deflecting to a myriad of technical challenges. This lived experience even explains the strong quantitative correlation of perceived ease of use to the feature acceptance of the application.

In contrast, the qualitative data sheds light on the modest effect of self-efficacy and the lack of effect of perceived usefulness. Students' confidence using the graphic design applications was often described as developing through repetitive usage of the features. This suggests self-efficacy is the result of engagement, not the leader of acceptance. Further, students' evaluations of features were often not about utilization, improved performance, or efficiency.

Rather, they understood usefulness in experiential terms, such as enjoyment and aesthetics, not in instrumental terms. This helps to explain the lack of impact perceived usefulness had in the quantitative analysis.

The merged findings illustrate a pattern of acceptance, particularly driven by engagement of a more experiential and affective nature, rather than by any utilitarian focus. The qualitative dimension analyzes the contextual variables shaping some of the constructive acceptance, while the quantitative dimension captures the predominance of utilitarian reasoning. The integration of these dimensions empowers the analysis of the theoretical and practical significance of the findings.

5. DISCUSSION

In this paper, students' acceptance of graphic design applications in Arts and Culture learning will be integrated with quantitative modeling and qualitative reasoning. The results show an acceptance pattern in which intrinsic motivation and ease of use take center stage, self-efficacy acts in a subsidiary role, and perceived usefulness does not emerge as a significant point. This result negates the most common axiom present in technology acceptance research, which posits that utilitarian judgments provide the primary basis for engagement in any learning situation.

The significant impact of intrinsic motivation points to the need for a greater focus on the arts-affective and experiential aspects of digital learning. Considerations of efficiency in the arts-based digital learning environment, students' acceptance of design applications was most influenced by the emotional rather than the rational. This finding is consistent with McClelland's theory of needs, which states that intrinsically motivated learning leads to greater engagement, persistence, and creativity (Deci & Ryan, 2008; Ryan & Deci, 2000). Enjoyment and curiosity as motivators are most likely to be prominent in creative learning environments, where students are free to explore and construct their own meanings with visual and symbolic means, as opposed to simply optimizing their task performance.

Perceived ease of use reinforces the experiential focus of students' engagement with digital tools in Arts and Culture learning. Ease of use, in this case, functioned not simply as a technical convenience but as a functional condition that enabled students to direct their operational focus on creative expression. This resonates with other studies highlighting the role of usability in engagement, especially for learners who are new and in environments where exploration is encouraged (Al-Rahmi, Aldraiweesh, Yahaya, Kamin, & Zeki, 2021; Gupta & Maurya, 2022). In this case, students' willingness to manipulate visual elements was supported by clear and straightforward design elements, reiterating the importance of interaction in ease of creative digital learning.

Perceived usefulness, on the other hand, had no discernible impact on the students' acceptance of the features of the graphic design applications. This finding goes against the school of thought when it comes to technology acceptance because perceived usefulness most often is regarded as the most important factor in adoption and continued use of technology (Davis, 1989; Venkatesh et al., 2003). Of course, this is precisely the type of reasoning that has been critiqued by the many scholars who study technology acceptance, and the use of technology critiqued the blind use of rationality, and the lack of focus on the emotions and context surrounding the use of the technology (Bagozzi, 2007; Benbasat & Barki, 2007). In the context of arts-based learning, where the outcomes of learning activities are often not quantifiable, students may not assess the value or effectiveness of technology as a tool in the learning process.

The divergence in perspectives is reflected in qualitative findings. Among students, the engagement with graphic design applications was rarely described in terms of productivity, the improvement of academic tasks, or efficiency. Instead, usefulness was implicitly described with reference to experiential value, including satisfaction from enjoyment and visual creativity, and freedom over instrumental value (Scherer, Siddiq, & Tondeur, 2019). This indicates that the perceived usefulness construct, as operationalized in traditional acceptance models, frames value in ways that are not aligned with the creative domains of the learner. The digital experiential and arts-oriented learning

literature also documents the prevalence of affective engagement that overshadows functional considerations (Eisner, 2002; Kędra & Žakevičiūtė, 2019).

The positive yet limited role of self-efficacy further refines the adoption pattern observed in this study. Although students' confidence in operating graphic design applications was an affirmative factor in the acceptance of features, self-efficacy did not play a primary role. Participants explained that confidence was gained after repeated interactions with the features of an application, recognizing self-efficacy as an outcome of engagement, rather than a precondition for acceptance. This perspective is consistent with the social cognitive theory, which highlights mastery experiences as a critical determinant for the construction of self-efficacy (Bandura, 1997). In creative learning situations, which are often exploratory and experimental, confidence is often built through use, rather than being a factor for initial engagement.

Combining these findings enriches the research examining the different elements involved in the acceptance of new technologies. The applicability of acceptance models centered around the workplace and productivity tool models has been challenged (Straub et al., 2004; Sun & Zhang, 2006). The acceptance models and the applicability of the models around the workplace and productivity have been challenged. The present research advances this line of thinking by presenting research from the Arts and Culture education field, where the experiential, affective, and symbolic dimensions of learning are more evident.

This study illustrates, in the Arts and Culture education field, the benefits of using an explanatory sequential mixed method design to examine acceptance models. Quantitative analysis presented positive and negative relationships among constructs, while qualitative analysis helped to understand different patterns. Qualitative analysis, rather than serving as a confirmatory analysis, became the primary focus of the study, allowing a more comprehensive examination of acceptance constructs to be articulated. The present study illustrates the growing call of more comprehensive mixed-method studies in educational technology, especially studies aimed to move beyond superficial and confirmatory studies (Creswell & Clark, 2018).

In theory, the findings imply that the study of the acceptance of technology should be more nuanced with regard to the epistemic and pedagogical context. In the case of creative learning environments, the more academic learning theory grounded in a utilitarian construct may need to be reframed, or academically augmented, through a more experiential lens, with the addition of dimensions of aesthetic involvement, intrinsic motivational involvement, and other experiential constructs (Bond, Buntins, Bedenlier, Zawacki-Richter, & Kerres, 2020). Future researchers may want to develop constructs other than the universally held perception of usefulness in creating frameworks in a more value-centered, experiential, relational, subjective, and affective regard than framed from outside the learner. This stance is consistent with the contemporary trends in educational research that espouse a constructivist, learner-centric, and responsive, meaning-centered approaches to the provision of digitally mediated learning opportunities (Hu, Zhang, & Wang, 2024; Lai, 2021).

Practically, the findings suggest that educators and the developers of digital technologies in the field of Arts and Culture education should focus on features that enable creative exploration, intuitive, and pleasurable use of technologies. Emphasizing efficiency or performance metrics may not resonate with students' motivations or learning experiences in creative domains. Rather, digital technologies that enhance exploration through visual manipulation and playful self-expression may be more likely to sustain students' engagement.

The current study does indeed have some limitations. For instance, it is likely the case that the study cannot be able to be generalized to other contexts, cultures, or age groups. Design of the study will be a mixture of qualitative and quantitative approaches, allowing for a deeper understanding of the data that is presented, but other studies will be able to examine longitudinal patterns of engagement and acceptance of constructs within creative learning environments. Additionally, studies focused on different types of arts may be able to provide insights regarding the differences in the acceptance of various parameters.

Regardless of the limitations, the study does add to the debate on the extent and limits of the technology acceptance model regarding its attempts to explain the perceived loss of value of arts-based learning contexts. Though the study attempts to capture the perceived value of the unique and creative learning experiences (Particularly lived experiences) to students, it may help explain the overall value of the study.

This study presents three theoretical contributions. First, it challenges the universal applicability of perceived usefulness by demonstrating its context dependency for the first time in the technology acceptance literature. Second, it contributes to an experiential understanding of acceptance in arts-based learning by emphasizing intrinsic motivation and affective involvement. Third, it showcases the interrogative, not merely confirmatory, analytical potential of mixed-methods approaches in acceptance research.

This study does not claim that perceived usefulness becomes unimportant, but rather shows that its explanatory scope is limited to specific learning epistemologies. In creative and arts-based learning environments, where the construction of value is rooted in experience, affect, and meaning-making, utilitarian frameworks fall short in capturing the evaluative logic of the learners.

6. CONCLUSION

The study described student acceptance of features of graphic design applications in the learning of Arts and Culture through the integration of quantitative modeling and qualitative description. The acceptance pattern described is unique in that intrinsic motivation and perceived ease of use have the most influence, self-efficacy is supportive, and perceived usefulness is not influential. This implies that students' engagement with digitally based resources in creatively constructive learning environments is driven more by feelings and experiences than by the practical or functional purpose of the resources.

This study also illustrates the lack of relevance perceived usefulness has in Arts and Culture learning, which is important for the ongoing discussion of the boundaries and limitations of technology acceptance theories in education. The reliance on technology acceptance theories in educational settings is certainly justified; however, in this instance, the theories seem to ignore important aspects of motivation in a creatively driven arts learning context. When a learning situation is centered on discovery, aesthetic involvement, and construction of meaning, learners often assess the value of digital resources in terms of enjoyment, ease of use, and creative potential, not efficiency or improved performance.

Analysing the advances in technology acceptance research has merit value, especially when using an explanatory sequential design mixed methods approach. The quantitative findings alone were able to demonstrate some of the acceptance constructs' relationships, both to some degree and to none at all. However, qualitative findings were the most important and most useful in explaining these relationships. This research has gone beyond simplistic model testing when using mixed methods by integrating the model testing results with students' experiences in relation to technology to a greater depth in understanding the technology in terms of their engagement.

Creative educators and designers of digital learning resources in Arts and Culture education need to pay special attention to the overall design of the educational resource, particularly the digital learning resource's interface, the creative and flexible freedom, and the optional features that students can turn on and off at their own discretion to foster enjoyment and exploration. Emphasizing efficiency or being useful in a constructive manner alone will not engage students in the creative processes. Instead, digital tools that foster creative processes like engagement in expressive and free-to-choose ways of their own will promote engagement in the processes.

This study is limited in some ways. For example, its findings may not apply to different cultural backgrounds or educational contexts, given that they were collected in one such context. Furthermore, the cross-sectional design does not allow for the capture of changing dynamics of acceptance in the future. For example, future studies could use longitudinal or comparative research frameworks to examine the dynamics of technology acceptance in different creative disciplines and at various stages of learning, motivated by different experiential factors.

In summary, this study demonstrates the need for a focus on the pedagogical and epistemic characteristics of the learning domain to be more closely aligned with the research on acceptance of technologies in educational settings. The research demonstrates that perceived usefulness may not be a strong consideration for arts-based learning and shifts the focus from a strong utilitarian perspective that continues to dominate educational technology research. The research suggests that more focus on experiential value, intrinsic motivation, and creative interaction will enable a better understanding of the complexities of digital learning as well as the context in which it occurs.

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