

Accessory or Necessary? The Needs of Mobile Learning in Unleashing Student's Creativity in Art Classrooms

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Abstract

The robust advancement of mobile learning has demanded its integration into education system. As a subject that places its emphasis on creativity, innovation and critical thinking, Visual Art Education (VAE) has urged its students to utilize the full potential of mobile learning. However, previous studies have reported differently. Undoubtedly, there are many factors influencing their decision. Hence, the study aims to determine the current uptake and explore the determining factors influencing the VAE student's decision to integrate mobile learning into their learning process. The study employed a quantitative research design where data were collected through survey questionnaire from 214 VAE students in Gombak District, Selangor. Descriptive and path analysis of Structural Equation Modeling (SEM) were carried out in analyzing data of the study. The research finding indicates that students were at a moderate level of mobile learning integration, largely depending on accessibility, quantity and quality of mobile tools, applications and peripherals provided for them. Further, support from school administrators and peers were found as influential factor toward student's successful integration of mobile learning in art classrooms. It is envisaged that the findings from this study have major implications for the provision of support, which will ensure teachers' successful mobile learning integration. Further, this study will serve as a guide and reference for teachers, school administrators, teachers training institution and the government in establishing a standard of successful integration of mobile learning, especially in the subject area of VAE.

Keywords: Mobile Learning, Visual Art Education, Art Classrooms, Mobile Technology

Context of the Study

Since the emergence of the Internet, there have been endeavors to integrate mobile technology into education system. Further, the increasing affordability of mobile technology tools, such as smartphone and tablet has made such integration become more commonplace and compelling. The impetus to integrate mobile technology into teaching and learning have been supported with various Malaysia national agendas. For instance, the Digital Education Policy (DEP) (MoE, 2023) have outlined an aim to provide students, teachers, educators and

all stakeholders avenue to bridge the digital divide and enable successful implementation of mobile technology into education system (Devisakti, Muftahu & Xiaoling, 2024). In supporting this effort, huge budgets have been allocated and numbers of initiatives have been planned in promoting technology-enabled teaching and learning. On the other hand, teachers were urged to structure their pedagogical practices, while students were required to adapt and adopt to this new perspective of learning.

Similar to other subject area, teaching and learning of the Visual Art Education (VAE) subject are expected to take full advantage of mobile learning. It has been suggested that integrating mobile learning in art classrooms will lead students toward active participation in constructing, processing, evaluating and synthesizing their idea (Alam & Mothabtly, 2023). It has been suggested that mobile learning could function as a constructive art learning tool (Tan et al., 2024). This possibility may provide opportunities for students focus on simulation and manipulation of visual content through exploration of varieties of media and techniques in art making process (Li, Li & Han, 2021).

Despite those benefits and potentials of mobile learning as a tool for creative expression, there is little evidence of VAE teachers fully embracing mobile technology into their pedagogical practices. This limitation has also impacted on student's limited utilization of mobile technology in learning VAE subject (Tan et al., 2024). Some students were unaware of mobile technology full potentials, while others were integrating it for basic usage (Fan et al., 2020). Undoubtedly, there are many factors that might contribute to those unpleasant situations, which have not yet been identified or appropriately addressed. Owing to differences for each individual and limited local published research, the present study aims to determine the VAE student's current uptake of mobile learning and factors that might influence their decision to integrate it in art classrooms.

Mobile Learning in Art Classrooms

Mobile learning is a modern educational approach that leverages mobile technology such as smartphones and tablets to facilitate learning. Mobile learning is a dynamic and adaptable learning method that provide students with flexible and accessible learning experience. Likewise other subject area, the integration of mobile learning into VAE instruction had a huge impact on students' creative abilities and critical thinking skills. The flexibility of mobile learning allows students to express their artistic ideas more freely (Ma, 2021), thus increase their understanding about arts (Tan et al., 2024). These also offer students more real-world experiences through the process of simulation and manipulation (Lee, 2023) that have never been highlighted before in art classrooms. Such unstructured learning activities expand the context of VAE through a real problem solving and collaborative teaching and learning approach (Gonzalez & Abad, 2020). Students are encouraged to discover their personal interests and needs through learning experiences that are designed to ensure successful learning happens.

Despite all the advantages of mobile learning in VAE, many scholars have indicated that mobile learning integration in art classrooms is far from reaching its target. A study by Tan et al. (2024) indicated that students perceived mobile technologies more as a tool rather than as a source of learning, thus indicates their low awareness and understanding of mobile learning integration in art classrooms. Previous study by Usal and Sirin (2015) also revealed

that that some students were integrating mobile technology without knowing its benefits and value to learning arts. Similar findings have also been noted by Fan et al. (2020). Their study concludes that students were not exposed to systematic used of mobile technology in art classrooms. Students were found to used mobile technology more as socializing tools and non-academic purposes. Hence, the study will determine VAE student's current uptake of mobile technology in art classrooms.

Undoubtedly, there are many factors contributing to these unpleasant situations. Apart from limited access to technological tools and peripherals (Adnan & Anwar, 2020), student's decision to integrate mobile technology into learning process were also influenced by teacher's encouragement (Matzavela & Alepis, 2021), and school administrators supports (Nikolopoulou, 2020). Those influential factors toward successful technology integration can be grouped into few categories, namely perception, facilitating conditions, social influences, and attitude. Table 1 shows pre-determine factors and its descriptions that might influent VAE student's integration of mobile technology in art classrooms. These factors were also addressed in previous technology integration theories and models. Hence, it is anticipated that findings of the study will function as a guideline and in the establishment of a standard of successful integration of mobile learning, especially in the subject area of VAE.

Table 1

Pre-determine Factors and Description

Factor	Descriptions	Previous Theories & Models	
Perception	The extent to which the VAE students believe the mobile technology will benefits their learning process	Perceived Usefulness	Technology Acceptance Model (Davis, 1989)
		Perceived Ease of Use	
		Performance Expectancy	Unified Theory of Acceptance and Use of Technology (Venkatesh et al., 2003)
Facilitating Conditions	The extent to which the VAE students believe that organizations, technical infrastructure and policies exists to support their decision to integrate mobile technology	Facilitating Conditions	Unified Theory of Acceptance and Use of Technology (Venkatesh et al., 2003)
Social Influences	The extent to which the VAE students perceive that others believe they should integrate mobile technology	Social Influences	Unified Theory of Acceptance and Use of Technology (Venkatesh et al., 2003)
		Subjective norms	Technology Acceptance Model (Davis, 1989)
Attitude	The extent to which the VAE students have positive or negative feelings toward integrating mobile technology	Attitude	Technology Acceptance Model (Davis, 1989)

Research Methodology

The present study employs a quantitative research design. Data were collected through self-administrated survey questionnaire. The questionnaire was divided into two main sections. The first section is where students were determined their current uptake of mobile technology through self-determine stages. This stage was adopted from Six Stages of Technology Adoption proposed by Russel (1996). Table 2 provides an overview of those phases. The data was analyzed descriptively through mean score and percentage.

Table 2

Six Stages of Technology Adoption (Russel, 1996)

Stage	Descriptions
Stage 1: Awareness	Aware that integrated technology tools exist but has not used them; perhaps even avoids them.
Stage 2: Learning the process	Trying to learn the basics; often frustrated using integrated technologies; lack confidence.
Stage 3: Understanding and applying the process	Beginning to understand the process of using integrated technologies; can think of specific tasks in which they might be useful.
Stage 4: Familiarity and confidence	Starting to feel comfortable using integrated technologies for specific tasks.
Stage 5: Adaptation to another context	Thinks about integrated technologies as learning tools; no longer concerned about them; can use them in many applications and as instructional aids.
Stage 6: Creative application to new contexts	Able to use integrated technologies in an instructional way to integrate curriculum.

The second section determine factors that influence VAE students' integration to mobile learning. The section consists of thirty items that measure six pre determined factors of the study, with five questions respectively. Those items were adopted from the Technology Acceptance Model (Davis, 1989) and UTAUT (Venkatesh et al., 2003) questionnaire. The Partial Least Squares (PLS) of variance-based Structural Equation Modeling (SEM) was employed to determine the significant influential factors toward VAE students' successful integration of mobile learning. As a technique that applied a multivariate statistical analysis, SEM was useful in representing translations of a series of cause-effect relationship between predictor and predicted variables (Hair et al., 2021).

A total of 214 students from four secondary schools in Gombak District, Selangor, Malaysia involved in this study. These students were at upper forms, where their age range from 16 to 17 years old, taken Visual Art Education (VAE) as their core subject. The students were asked to bring and utilize their own mobile technology (i.e. hand phone, tablets) during their VAE subject learning process for two months, with teachers guidance. Few related activities were assigned to student during the learning process. At the end of the learning session, a questionnaire was shared to the student in accessing the stages of adoption and factors that might influence their decision.

Research Findings

Data analysis of the study is presented in two sections. The first section presents the VAE student's current uptake of mobile learning in art classrooms. Based on VAE teachers' self-reported respond, their frequency and percentage of stage of mobile learning integration is presented, as in Table 3.

Table 3

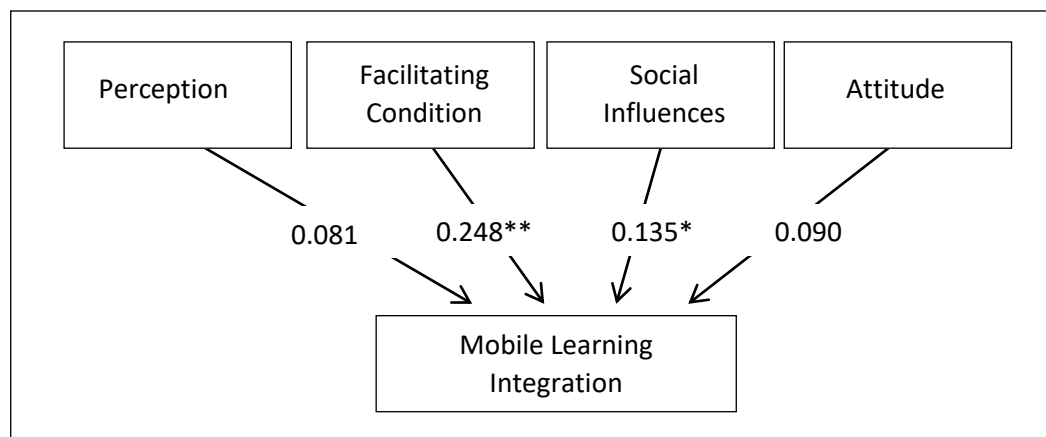
Stages of Mobile Learning Integration

Stage	Frequency (n)	Percentage (%)
Stage 1: Awareness	0	0.0
Stage 2: Learning the process	18	8.4
Stage 3: Understanding and applying the process	88	41.1
Stage 4: Familiarity and confidence	64	29.9
Stage 5: Adaptation to other context	37	17.3
Stage 6: Creative application to new context	7	3.3

Note. $n = 214$

Based on the above data, it is apparent that very few (3.3%) students are at the highest stage (stage 6: creative application to new context). Most of the students were found to be at stage 3 (understanding and applying the process) and stage 4 (familiarity and confidence) with 41.1 percent and 29.9 percent respectively. Generally, this result concludes that majority of the VAE students were at the moderate level of mobile learning integration.

A path analysis of variance-based Structural Equation Modeling (SEM) was employed in determining factors that might influence the VAE student's decision to integrate mobile learning in art classrooms. The significance of the path coefficients and the strength of relationship between pre-determine factors toward mobile learning integration was tested, as presented in Figure 1



Note. $*p < 0.05$, $**p < 0.01$

Figure 1: Relationship between Pre-Determine Factors toward

Mobile Learning Integration

As presented in Figure 1, the strongest direct impact was found on the relationship between facilitating condition toward mobile learning integration ($B = 0.248$, $p < 0.01$). A significant direct impact was also found of the relationship between social influences ($B = 0.135$, $p < 0.05$)

toward mobile technology integration. Conversely, no significant direct relationships were reported on VAE student's perception and attitude toward mobile technology integration.

Discussion

Finding from the present study informs that the VAE students were at moderate level of mobile learning integration. Based on the six stages of technology adoption (Russel, 1996) majority of the VAE students were at understanding and applying the process, which is the third lowest of the scale. This finding suggests that most of the VAE students are starting to understand the positive impact brought by mobile technology toward their learning process.

In regards to factors that influence the VAE students' decision to integrate mobile learning, the finding indicated that the VAE students' facilitating conditions contributed the highest effect on their decision to integrate mobile learning in art classrooms. This finding implies that the VAE students will more likely to integrate mobile technology if they were provided with required tools and facilities. Based on this finding, it is suggested that in order to encourage VAE students to integrate mobile learning in art classrooms, facilities and resources are essential. The study also revealed that VAE students' social influences have a significant positive effect on their decision to integrate mobile learning in art classrooms. Suggestions and encouragement from peers and teachers are the environmental factors that have influenced their decision. The significant effect on the relationship between students' social influences toward mobile learning integration in art classrooms may be due to the fact that students who are technology literate are more attracted to integrate mobile learning if the teachers support and encourage them to do so.

Conclusion

The present study aims to determine current uptake of mobile learning integration in art classrooms among VAE students. Factor contributing to VAE students' decision to integrate mobile learning was also tested. In regards to practical implication, the study informs that the VAE students were at understanding and applying the process, which is at moderate level of mobile learning integration. Conversely, facilities, supports and encouragements provided for VAE students were suggested to be predictors that may influence their decision to integrate mobile learning in art classrooms.

Conversely, findings driven from the present study match with the degree of influence from other theories and models of technology integration. The study found that facilitating conditions were the most influence factors toward VAE students' decision to integrate mobile learning. This finding suggests that the provision of sufficient support by the authorities and teachers are critical element in ensuring mobile learning successful integration into art classrooms. In other words, the more support that VAE students receive, the more they will be motivated to integrate mobile learning.

This study therefore suggests that specific policies and guidelines should be outlined by the government and school authorities in encouraging mobile technology usage during classroom instruction. Such policies and guidelines also need to be supported through sufficient allocation of budgets, facilities, initiatives and incentives in encouraging teachers and students' efforts towards utilization of mobile technology in both teaching and learning process. Further, appropriate and continues strategies need to be undertaken to update

teachers with the advancement of relevant technologies in education. By organizing relevant and on-going professional development courses, teachers are expected to be more knowledgeable, skillful and confident toward technology integration into classroom instruction, thus impacted on students learning process.

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