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DIGITAL ART TASKS AS A MEDIUM FOR ENGLISH VOCABULARY LEARNING

Fairus Suryani Munir[1], Fatimah Hidayahni Amin[2], Adriani Jihad[3]
[1]English Education Department, Faculty of Teacher Training and Education, Pohuwato University, Indonesia
[2]English Department, Faculty of Languages and Literature, State University of Makassar, Indonesia
[3]English Education Department, Faculty of Teacher Training and Education, STKIP YPUP Makassar, Indonesia
fairussuryanimunir@gmail.com

Abstract

This paper investigated the use of digital art–based activities in developing English vocabulary learning among students taking their first semester in an English Language Education programme. Informed by multimodal and constructivist learning, the research responds to the call for more meaningful and involving vocabulary teaching in English as a foreign language (EFL) tertiary education situations. This was a mixed methodology study with 10 students. Quantitative data were obtained through vocabulary pre-tests and post-tests, while qualitative data collection from Likert-scale questionnaires, semi-structured interviews and analysis of the students' works of digital art. The results indicate an enhancement in students' vocabulary performance through the use of digital art tasks. Positive qualitative results in learner perception, including arousal, motivation, autonomy and understanding of contextual vocabulary. We take a step further and "test" students' lexical processing using digital art products, and find that students used vocabulary in meaningful and creative ways through visual representations. Although the sample size and research design of this study had their limitations, empirical data presented to us supports the use of easily accessible digital art tasks as a successful means for vocabulary instruction in an EFL higher education context.

Keywords: *digital art tasks, vocabulary learning, EFL learners*

Introduction

Vocabulary knowledge plays an important role in second/foreign language learning scrub that, it's crucial: essential for learners to benefit from input and produce output across the skills (Nation, 2013). Indeed, studies published recently still empirically reveal that EFL learners' low vocabulary command is a bottleneck in their learning process, especially in contexts where conventional instruction strategy based on rote memorisation and textbook exercises are preferred (Alqahtani, 2015; Lei & Reynolds, 2021). These techniques usually lead to superficial lexicographic knowledge and poor long term memorization. On the theoretical level, vocabularylearning is the most effective with learners' active processing,making use of visual and context-specific input. Dual Coding Theory (Paivio, 1986) and the Cognitive Theory of Multimedia Learning (Mayer, 2009), for example, argue that when repetitive patterns are presented from both visual and verbal aspects it improves memory and understanding. Furthermore, sociocultural theory values the role of a fantasy-based discourse, or learner agency, in constructing knowledge (Vygotsky, 1978). Neverthless, examining evidence from EFL contexts, it has been observed that the principles have yet to be put into practice in many EFL classrooms being creative and technology-mediated vocabulary teaching (Hockly, 2018; Pinner, 2021).

In the last decade, studies of technology-assisted vocabulary learning have shown that digital tools and visual media can enhance both vocabulary gain and retention. Research has demonstrated that multimedia elements are helpful for learners to understand the meaning of words and carry out deep cognitive processing (Chen & Hsu, 2020; Lee, 2020). Affective value of one's interaction with the Vocabulary Cleaner in a webinese context has been identified in several studies as having positive effects on engagement (Limi&Kuo, 2018; Tenglinet al., 2021). Concurrently, the literature on creative and arts-based methodologies in language learning has been reporting positive outcomes with regard to levels of motivation and development of language. Digital storytelling, visual design activities, and multimodal creative projects prompt students to actively employ vocabulary as they work together on meaning-making processes in visual and textual modes (Yang & Wu, 2016; Hafner, Chik, & Jones, 2020). Nevertheless, these studies have tended to promote creative multimodal work rather than framing digital art tasks as a pedagogical tool based on vocabulary, but instead in relation to general language learning or digital storytelling.

There can be a great deal of interest in multimodal and creative pedagogies, yet there is still little focused on research on digital art tasks as learner-generated activities for vocabulary development. Recent research most commonly details receptive use of digital visuals (e.g., watching videos or viewing images), rather than productive or generative use in which learners produce digital artifacts of art that invite intentional vocabulary choice and usage (Kress, 2018; Hafner et al., 2020). Moreover, most of the literature is based mostly on quantitative designs, assessing vocabulary learning without adequately investigating learners' perceptions, involvement and cognitive engagement. Recent methodological papers encourage combining qualitative and quantitative to gain insight into how multimodal learning environments affect vocabulary learning (Creswell & Plano Clark, 2018; Phakiti et al., 2018). Thus, there is a need for a multi-angled study which investigates the efficacy and the one's experienceof digital art tasks in vocabulary learning.

The present study attempts to address the question of whether implementing digital art tasks actually affects any noticeable change on EFL learners' English vocabulary development, specifically in terms of differences between L2 learners' performance in vocabulary before and after engaging with the instructional intervention. Further, the study aims to examine how participants respond to digital art activities in vocabulary learning including their perception, motivation and learning experiences achieved in the teaching procedure. Moreover, the study seeks to determine which digital art tasks are viewed by learners as most effective in promoting vocabulary acquisition. In doing so, the study combines quantitative evidence of vocabulary gains with qualitative data on learners' experiences, leading to a full picture of digital art tasks as a pedagogical tool for English vocabulary.

Research Methodology

Research Design

This research adopted an explanatory sequential design of mixed-method research methodology to explore the effectiveness of digital art task on English vocabulary learning. Within this design, data were gathered and analyzed in a quantitative stage to look at trends in students' vocabulary acquisition and then qualitative responses added depth and meaning to the quantitative portion (Creswell & Plano Clark, 2018). The reason why the two methods are used is that a combined use of both methods would enable illuminating information about learning outcomes and learners' experiences that might not be revealed by only either method (Phakiti et al., 2018).

Research Subjects

The research participants were ten (10) students of the first semester of English Language Education. Purposive convenience sampling was used to recruit the participants, which is a frequently utilized method for classroom-based educational research where availability and relevance to the study are major criteria (Cohen et al., 2018). First semester students were chosen

as adequate participants due to the vocabulary as a building tool for early academic language (Nation, 2013). All subjects were taught with the same instructional method and all voluntarily participated in this study.

Data Collection Techniques and Instrument Development

Quantitative data were obtained by vocabulary pre-test and post-test to test students' mastery on their vocabulary before and after the treatment. The test consisted of multiple-choice, matching and short-answer questions. To secure the content validity of the test, the items were validated by experts in English language teaching and a pre-test was carried out before gathering main data (Brown 2015).

Questionnaire: Students' perceptions and learning experiences were investigated using a questionnaire including Likert-like scale items with open-ended questions to obtain qualitative data. Likert-scale surveys are commonly used tools in education for systematic measures of attitudes and perceptions (Dörnyei & Taguchi, 2010). Moreover, semi-structured interviews were administered to some subjects for in-depth examination of the engagement and views of learners concerning digital painting tasks. Semi-structured interviews provide flexibility, but keep the research objectives in focus (Creswell, 2014). Supplemental qualitative data to assure triangulation were also obtained from students' digital art products.

Data Analysis Techniques

Descriptive statistics (mean and standard deviation) were employed to analyze the quantitative data collected from the vocabulary pre-test and post-test. We further used paired-sample t-test to ascertain if there was a significant difference between students' vocabulary performance pre- and post-intervention. This test is used to compare two related scores from the same participants (Field, 2018).

Thematic analysis was used to interpret qualitative data, generated from open-ended questionnaires, interviews and digital art artefacts. As an analytic approach that sought to generate a high level of interpretative reported data, we coded these using systematic processes, followed by the identification and interpretation of themes to capture recurrent learner's experiences (Braun & Clarke, 2006). Finally, the quantitative and qualitative results were converged during interpretation to yield an exhaustive view of the results in keeping with mixed methods research principles (Creswell & Plano Clark, 2018).

Results and Discussion

Results

This report shares findings from the research on the effects of digital art tasks in improving English vocabulary mastery and exploring students' perceptions of their use in vocabulary learning. Results are presented in two major parts: quantitative results based on the pre-test and post-test scores from vocabulary, and qualitative data through questionnaires,data interviews and digital art products created by students. The combination of the two data set leads to a holistic perception on the research results.

1. Vocabulary Pre-test and Post-test Performance

The quantitative data was taken from the administration of a pre-test and post-test on Ten first semester students in English Language Education Department. Pre and post-test were as employed to establish their prior knowledge based on students' vocabulary definition before digital art tasks (pre-test) as well as their mastery after instruction (post-test). Table 1 Pre-test and post–test results of the students

Table 1: Students' Vocabulary Pre-test and Post-test Scores

Participant	*Pre-test Score*	*Post-test Score*	*Gain*
S1	58	72	14
S2	60	75	15
S3	55	70	15
S4	62	78	16
S5	57	73	16
S6	59	74	15
S7	61	76	15
S8	56	71	15
S9	63	80	17
S10	58	74	16
Mean	**58.9**	**74.3**	**15.4**
SD	**2.7**	**3.1**	—

The mean pre-test score (58.9) was moderate and showed that the learners had a certain degree of initial vocabulary acquisition. Mean post-test score increased to 74.3 after digital art tasks, indicating a significant increase. In general, the findings suggest that students' vocabulary scores raised after the intervention of digital art-based instruction. The post-test score was higher than the pre-test for MULT in almost all cases (positive effect of digital art signals). The average gain of 15.4 points implies the majority of students realized steady vocabulary growth after instruction. A paired sample t-test indicated that there was a statistically significant difference in students' vocabulary scores on the pre- and post-tests ($p < .05$) to mean that using digital art tasks significantly influenced learners' vocabulary mastery.

2. Students' Perceptions and Learning Experiences

To enhance the interpretation of students' views, qualitative indications from open-ended responses and interviews were combined with quantitative data obtained through Likert-scale survey. The questionnaire comprised Likert-scale items on a five-point scale anchored from strongly disagree (1) to strongly agree (5). The use of two sets of data also permits triangulation and richer reading of students' learning experiences.

a. Engagement and Motivation

The Likert-scale questionnaire results indicate that students found digital art tasks interesting and motivating. Nearly all the students (94.14%) either agreed or strongly agreed with positive feedback on digital art-based vocabulary learning, in terms of enhancing interest in learning English vocabulary.

Table 2. Students' Perceptions of Engagement and Motivation

Item	Statement	Mean
Q1	Digital art tasks made vocabulary learning more interesting	4.6
Q2	I felt more motivated to learn vocabulary through digital art activities	4.5

This high mean indicates a very positive view of engagement and motivation. Statements made provide further support to the quantitative results. For instance, one student stated:

"It was less boring to learn vocabulary through digital art than memorize words. I was more interested in trying to learn because I could be creative." (S3)

Another participant commented:

"*I participated more in class because it was a fun activity that wasn't just a normal vocabulary lesson.*" (S7)

This convergence between Likert-scale data and students' verbal responses indicates that digital art tasks successfully enhanced learner engagement.

b. Vocabulary Understanding and Retention

Digital art tasks were also seen as supportive in terms of learning new vocabulary words and understanding them. The Likert-scale of items was strong on statements for comprehension and retention.

Table 3. Students' Perceptions of Vocabulary Understanding and Retention

Item	Statement	Mean
Q3	Digital art tasks helped me understand vocabulary meanings better	4.7
Q4	Visualizing vocabulary helped me remember words more easily	4.6

These findings are bolstered by qualitative evidence. One student explained:

"*I could understand the meaning of them well, and later in a post-test I did memorize*" (S1)

Similarly, another student noted:

"*I recall the language because I remember the images that I created. It helped me a lot.*." (S9)

The integration of both data sources indicate that visual and imaginative processing had a large impact on vocabulary acquisition.

c. Overall Learning Experience

Students in general experience of digital art tasks was likewise assessed. Quantitative ratings on Likert scales indicate that students had favorable opinions of the method.

Table 4. Students' Overall Learning Experience

Item	Statement	Mean
Q5	I enjoyed learning vocabulary through digital art tasks	4.6
Q6	I would like to use digital art activities in future English classes	4.4

These relatively quantitative findings are confirmed in qualitative reflection of the students. One participant stated:

"*This activity made learning English vocabulary enjoyable and helped me feel more confident.*" (S5)

Another student added:

"*t's been a good experience and especially for first semester students like me. At the same time I was learning vocabulary and digital skills.*" (S10)

d. Learner Autonomy and Active Participation

A learner autonomy and active role in vocabulary learning through digital art tasks were also investigated on the aspects of engagement, vocabulary understanding and overall learning experience by students. This measure is concerned with the degree to which students felt they used greater autonomy, responsibility and activity during learning.

Table 5. Students' Perceptions of Learner Autonomy and Active Participation

Item	Statement	Mean
Q7	Digital art tasks encouraged me to actively participate in vocabulary learning	4.5
Q8	I felt more independent in learning vocabulary through digital art activities	4.4

The average results demonstrate that a majority of the students either agreed or strongly agreed on the actions of digital art tasks were actions for active participation and learner autonomy. They could serve as indicators that the way of instruction encourages student-centered learning.

The qualitative responses from the participants supported by the quantitative results. One student stated:

"I *was just so much busier because I was doing my own job. It forced me to be financially responsible for learning the language myself."* (S4)

Another participant explained:

"*This task gave me free to explore vocabulary on my own. I didn't just sit there for the lecturer to explain* (S8)

These replays suggested that digital art tasks motivated participants to take responsibilities for their vocabulary learning and become more active in the learning process.

In general, the combined analysis of the Likert-scale questionnaire and open-ended question provides strong consistency between quantitative and qualitative information. High mean score of all items in the questionnaires confirms students' oral reports, and digital art task benefit engagement, vocabulary learning, review and comprehension.

3. Students' Digital Art Products

To support the qualitative analysis, students' digital art products were gathered as complementary source of information on how learners used targeted vocabulary in creative and visually meaningful ways. The digital archives were comprised of graphical posters, visual flashcards, simple statistical graphics and short visual compositions made with basic digital designs software. These goods are examined to find patterns in terms of vocabulary, word–image linkage, and context comprehension. In general, the results of the study indicated that learners were able to depict target vocabulary in pictorial forms and integrate them more effectively within context. The digital art objects showed that the students did not only memorize vocabulary but actively worked with them to base words sounds in images, color and short explanatory texts.

Picture 1: Digital Art Product

For instance, some students created virtual posters in which target vocabulary was illustrated with pertinent images and short context descriptions. Visual representation was employed by one participant to illustrate the term "environment" through pictures of trees and recycling symbols alongside a short tagline explaining what it was. This displays a comprehension of the lexical meaning as well as its context in reality. Furthermore, the students' own digital flashcards demonstrated a positive word–image correspondence. Majority of flashcards had a visual representation and the words were in the correct form, further indicating that students could differentiate meanings out and would use vocabulary appropriately. Typographical errors were also noticed in few of the products; they did not affect the meaning comprehension collectively.

The findings also indicate that there are differences in student creativity as well as variety of vocabulary use. Some students only advanced to a simple word-image association, while others showed higher degrees of lexical processing by providing examples sentences on field note sheets, or thematically-related vocabulary. This variability follows from diverging vocabulary control and quasi-creative spirit of first-term students. In sum, the students' digital art products supply qualitative evidence that the digital art tasks facilitated active vocabulary processing, contextual comprehension and creative participation. These results affirm the quantitative gains seen in vocabulary test scores and reaffirm the pedagogical benefits inherent to digital art tasks for vocabulary teaching.

The findings from students' digital art products also reinforce the quantitative of perceptual results, demonstrating that vocabulary gain was associated with some meaningful and creative use in lexical knowledge.

Discussion

Results of this research indicate that the use of digital art tasks can markedly improve students' English vocabulary learning because there was positive impact on English vocabulary mastery which is shown by the significant improvement according to posttest. This finding suggests that several influences combine to enhance processes of lexical elaboration and learning when reading vocabulary enriched texts containing visual creativity. The results explicitly contribute to our initial research question on whether digital art tasks were effective, and validate other studies that stressed the positive effect of multimodal and creative engagement in vocabulary learning

(Plass et al., 2015; Lin & Wang, 2021). The qualitative results also suggest that students have enhanced engagement, motivation, autonomy, and positive experiences of learning. These affective results implied that the digital art task was an effective one in terms of meaningful learning, and offered its participants more opportunities for active involvement rather than passive memorization or repetition. This interpretation is also evidenced in the digital art products of students, as they seemed to represent words visually and by having them placed in context. These findings are congruent with multimodal learning theory, which posits that meaning making arises from the assimilation of various semiotic resources (Kress, 2018).

The results of this study are in line with the findings of previous research which indicated that visual and creative methods can be effective in learning vocabulary. Research on multimodal and technology-mediated language learning suggests that visual representations contribute to understanding and retention of vocabulary by reinforcing cognitive connections between form and meaning (Plass et al., 2015; Yang, Chen, & Chang, 2020). Similarly, it is reported that to promote learners' engagement and motivation in EFL, visual production tasks have a positive effect on active learning since previous studies dealing with creative language learning in the art-integrated language classroom 9 Sun & Gao, 2019; Pinner, 2021). Although others have explored high technology such as augmented reality or digital games in past research, this study contributes by demonstrating that easy-to-use digital art tasks may provide similar effects. This suggests that pedagogical design may be more important than technological sophistication, reinforcing the arguments advanced in previous ELT literature (Godwin-Jones, 2018).

Pedagogically, the results can inform second language educators that digital art tasks can be successfully integrated for teaching vocabulary to first semester English education students. On the one hand, to span from an article up to a production is consistent with the "parallel progression of skill development and theoretic knowledge" (Dolbear 61) advocated by student-centered pedagogy in higher education (Richards, 2017). English teachers might use on-screen posters, visual flashcards or basic infographics to help them learn vocabulary in a fun and authentic way. Theory-wise, this study adds weight to multimodal and constructivist approaches in vocabulary learning research. These findings provide support for the idea that active meaning construction via multiple modes of representation results in superior vocabulary learning (Kress, 2018; Plass & Jones, 2021). By promoting digital art creation rather than consumption of visual material, this study develops existing theoretical understanding around learner generated multimodal content in ELT.

Limitations Although this study makes a few theoretical and practical contributions, there are several limitations. First, the sample size was small (ten first semester students from one EL Education program), which limits generalizability beyond our findings. Small sample sizes are typical of exploratory mixed-methods research but interpretation is needed to be cautious with respect to quantitative outcomes (Creswell & Plano Clark, 2018). Second, employing a one-group pre-test and post-test design without the presence of a control group precludes drawing inferences about causality. Third, because of the intervention duration was relatively short, there is no way to investigate long-term vocabulary retention. Future research is suggested to include larger, more diverse samples and use experimental or quasi-experimental designs with control groups to enhance causal inferences. Furthermore, research trying to understand how vocabulary is remembered over time would be beneficial. Furthermore, potential follow-up research might be interested in looking at whether the impact of digital art task works on other language skills, e.g., speaking or writing and compare different creative tasks involving interactively with digital medium (Plonsky & Ziegler, 2016; Pinner, 2021).

This session has presented about the results by interpreting them, comparing with the previous literatures, describing pedagogically and theoretically implications, indicating limitations, and proposing suggestions for further research. In conclusion, it has been shown that digital art tasks are an efficient and practical method for teaching vocabulary in EFL higher education.

Conclusion

The purpose of this study was to compare the effects of using digital art tasks on English vocabulary learning among first-semester students in the department of English education. The results of the study suggest that students' vocabulary knowledge was enhanced after using digital art–based activities, demonstrating the potential of visual and creative production in fostering meaningful vocabulary learning. Qualitative data revealed students found digital art tasks to be engaging and motivating and promoted autonomy and processing of vocabulary in context. Scrutiny of students' digital artistic products also showed that they could use the target vocabulary in context, instead of being forced to memorize a list.

The results should be considered prudently because of the small number of subjects, short duration and lack of a control group. These are limitations that limit generalizability and inference. Despite these limitations, the study adds to the body of scientific literature by presenting empirical evidence that learner-created digital artwork tasks involving low-entry-level technology can foster vocabulary learning in EFL higher education. The results of the study are indicative of the merit of a multimodal and constructivist approach to vocabulary teaching, as well as demonstrating that creativity can be integrated with language learning for pedagogical purposes.

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