# ENRICHING STUDENTS' MASTERY OF ENGLISH VOCABULARY THROUGH DIGITAL GAMES

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**Abstract**

*The purpose of this study was to investigate the effect of digital games of students' achievement in English vocabulary. Specifically, the Vocabulary Spelling City App was employed for the study. The design of the study is classroom action research. The study was conducted in Prince Abubakar Audu university, Anyigba, Nigeria. The population of the study was the 200 level students of Education/English in the 2023/2024 academic session who were 138 in number. The study adopted the purposive sampling technique. All the 138 students (62 males and 76 females) were sampled for the study. The purposive sampling technique was adopted for the study. The instrument for data collection was a researcher-made University Students' English Vocabulary Test (USEVT). The instrument was given to two experts in the Department of English and Literary Studies, Prince Abubakar Audu University, Anyigba for validation to ensure that they were appropriate for the topic and students' level of competency. They were also examined for face validity by an expert in test and measurement from the same university. The same test used as pre-test was reshuffled and used as post-test. The paired sample t-test was used to test the hypotheses at 0.05 level of significance. The findings of the study showed that Digital game, Vocabulary Spelling City (CSV), was very effective for teaching English vocabulary, and that gender is not a predictor of achievement with regard to the use of digital game in English vocabulary learning. Based on these findings, it was recommended, among others, that traditional classroom vocabulary instructions should be modified to provide contexts and examples directly applicable to the goals of vocabulary teaching using digital games, which may therefore promote a deeper understanding and retention of new concepts.*

**Key words:** Students' mastery, vocabulary learning, digital games, vocabulary spelling city

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**Introduction**

Today's students are no longer the people our educational system was designed to teach (Prensky (2001), as cited in Cuenca-Calva et al., 2024). There should therefore be a shift in our pedagogical media to be able to develop the students to acquire the skills to embrace digital technology in broadening their learning opportunities.  In the constantly changing realm of language pedagogy, there is a growing emphasis on technologically driven methods that can capture students' interest and motivate them. The use of digital games is one of such methods that is becoming increasingly recognized as a lively and effective teaching method to enrich teaching and learning processes (Alsawaier, 2018). Games have the potential to convert conventional classrooms into dynamic centres of personalized and participatory learning (Adams & Du Preez, 2022). As educational models move toward placing students at the centre of learning, it becomes crucial to explore the effect of digital games on the academic achievement of students (González-Fernández et al., 2022). The incorporation of digital games will play a vital role in shaping an environment where educational content goes beyond simple information sharing and transforms into an experiential voyage (Alamri, 2024). One of such digital games is the Vocabulary Spelling City App.

Vocabulary Spelling City (VSC) App is an online software application dedicated to helping students, teachers, parents, and school systems with literacy skills. Its goal is to use efficient game-based study of literacy to improve skills in spelling, vocabulary, phonics, reading and writing. Lista (2021) indicates that Vocabulary Spelling City is an educational software programme aimed at

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learning English spelling and vocabulary through the use of educational games. The website offers about forty-word games that involve hearing, saying, writing, and breaking down words (Lista, 2021).

VSC was launched on the web in 2008 and has grown to include millions of users around the world. This educational software offers a free, restricted option, or a paid membership which includes enhanced capabilities for the student and for the instructor, teacher, or parent. A study conducted by Arens and Mace (2017) offered positive insights about the efficacy of using VSC software as a supplementary tool for instilling literacy skills among students. The study's focus was on the impact of VSC on students' ability to comprehend text and increase vocabulary retention when compared to other students taught vocabulary in the traditional way using paper and pencil and writing definitions from a dictionary. The study concluded that students using VSC performed better at vocabulary retention and reading comprehension skills than their counterparts who were part of the traditional instruction system.

The term vocabulary encompasses a vast array of words and their meanings. It plays a pivotal role in language learning. Vocabulary serves as the bridge that connects the abstract structure of a language to its practical use in everyday life. Without an adequate vocabulary, language learners may struggle to comprehend spoken or written discourse, and they may find it challenging to express their thoughts and ideas accurately (Fengyu, 2023). Fengyu (2023) further opines that vocabulary is the key to unlocking the doors of linguistic comprehension and expression. The

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significance of effective vocabulary application skills extends beyond the mere ability to understand and use words correctly. Proficiency in applying vocabulary in real-life contexts is essential for language learners to engage meaningfully in conversations, comprehend complex texts, and produce coherent written documents. Vocabulary application involves not only recognizing words but also knowing when and how to use them appropriately, considering factors like context, register, and tone (Fengyu,2023). Thus, the development of robust vocabulary is integral to becoming a proficient language user.

In the English language, effective communication and achievement of learning objectives are determined by language proficiency (Hamdanat, 2023). Against this background, Katemba (2022) interprets vocabulary as "the component of language competence that enhances overall language skill" (p.2). Therefore, knowledge of vocabulary is a requirement for language learning (Dakhi & Fitria, 2019). Vocabulary comprises all lexical items of a language that hold one or more meanings; these items may appear either individually, as phrases, or as lexical sets (Lessard-Clouston, 2013). Nushi and Jenabzadeh (2016) affirm that "vocabulary is much more than just single words, that is, vocabulary includes not only single words but also multiword phrases, idioms, and even sentences" (p. 52).

Language experts and researchers understand the value of vocabulary knowledge, particularly, its close relationship to reading abilities (Gardner, 2013). Vocabulary problem is more prominent with non-native users of language who often find themselves looking for words to express themselves in speaking and writing. They also report demotivation while reading and listening

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because of a limited load of vocabulary (Ghalebi et al., 2020). Both non-native language users and language scholars are aware of the vocabulary-learning challenges encountered by different learners. Most mentioned is the large number of words, word families, and multiple-word units needed to be learnt and put to use regularly in the course of using the target language. Regarding language learning in the contexts of a second language, it is said that lack of vocabulary knowledge can be one of the reasons that could make learners reluctant to read and write. Besides, a wide range of notable features are usually subsumed under the category of the challenge of vocabulary learning (and teaching) such as word frequency, saliency, learning burden, and learners' particular vocabulary needs and wants (Grabe & Stoller, 2018).

Learning new vocabulary items has always been challenging for language learners. The educational implications for second language learners with limited vocabulary are profound. Students who do not have sufficient vocabularies or word-learning strategies continue to struggle throughout their educational careers, which could lead to a cycle of frustration and continued failure (Khany & Khosravian, 2014). Furthermore, the vocabulary level of an individual is viewed as a means of unlocking or closing access to information and often illustrates whether a person is considered educated (Beck & McKeown as cited in Ghalebi, 2020).

Extant literature has shown that vocabulary knowledge contributes to reading comprehension through semantic meaning identification and plays a collaborator role with inference on sentence meaning comprehension (Silva & Cain, 2015; LervAag et al., 2018; Lawrence et al., 2019). High

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quality of word semantic meaning identification is beneficial for accurate individual word meaning retrieval which establishes word-and-word unit for sentence proposition coherence (Braze et al., 2016). Research evidence shows that vocabulary is significantly related to inference ability, listening comprehension, and reading comprehension (Lepola et al., 2012; Cain & Oakhill, 2014; Daugaard et al., 2017). In the constantly evolving field of education, the integration of games such as VSC could provide a potential avenue for transforming traditional classrooms into vibrant centres of active learning, thereby enriching students' engagement in vocabulary learning.

Games as a leisure activity seems to be more common among boys than girls. Sylvén and Sundqvist (2012) state that boys seem more inclined to engage in games and especially certain types of games. Sylvén and Sundqvist (2012) found that boys lean more towards games than boys. Not only do boys game more in terms of time spent, but also geared towards different types of games. Boys' games are more heavily reliant on the multiplayer facet and therefore encourage in-game communication far more than girls' games (Sylvén and Sundqvist, 2012). However, the most important difference according to Sylvén and Sundqvist (2012) is the time spent playing games. Jensen (2017) argues that boys in particular showed a major interest in games as a leisure activity and therefore exhibited more of its benefits in vocabulary tests. There is need to investigate further to ascertain which group achieves better when taught with digital games with regard to vocabulary learning.

To guide this study, two research questions and one null- hypothesis was formulated. These are:

**Research Question**

1. What is the mean achievement score of students taught vocabulary with digital games?

2. What is the mean achievement score of males and females taught vocabulary with digital games?

**Hypothesis**

1. There is no significant difference in the achievement of students taught vocabulary with digital games

2. There is no significant difference in the achievement of males and females taught English vocabulary with digital games.

**Methods**

The design of this study is the classroom action research. Classroom action research is done by practitioners within a particular situation and it influences what is happening in real life situation in the classroom. It is a disciplined inquiry done by a teacher with the intent that the teacher will be informed and change his or her practices in the future. The study was conducted in Prince Abubar Audu universyt, Anyigba, Nigeria. The population of the study was the 200 level students of Education/English who were 138 in number. The research was conducted during the tenancy of

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a course titled ICT, Language and Literature (EEL 202). The students were engaged in a thirteen-week, two-hour per week lecture exercises using the Vocabulary Spelling City App.  The study adopted the purposive sampling technique. All the 138 students (62 males and 76 females) were sampled for the study. The purposive sampling technique was adopted for the study because the class size was small. Purposive sampling technique is usually effective when limited number of people serves as primary data source. Obilor (2023) notes that where the population of interest is small and specific, the purposive sampling technique should be adopted, hence the choice of the purposive sampling technique for this study. The instrument for data collection was a researchers-made University Students' English Vocabulary Test (USEVT). The instrument was given to two

experts in the Department of English and Literary Studies, Prince Abubakar Audu University, Anyigba for validation to ensure that they were appropriate for the topic and students' level of competency. They were also examined for face validity by an expert in test and measurement from the same university. The same test used as pre-test was reshuffled and used as post-test. The paired sample t-test was used to test the hypotheses at 0.05 level of significance. The paired sample t-test was adopted for data analysis because the study is a one group pretest–posttest design. Ross and Wilson (2017) posit that to employ the one-group pretest–posttest design with matching scores, the paired sample t-test analysis should be adopted.

**Results**

**Table 1: Mean and Standard Deviation of the Pre-test and Post-test Scores of Students Taught Vocabulary with Vocabulary Spelling City Games**

| VSC | X | SD | Gain Score |
|---|---|---|---|
| Pre-test | 38.48 | 3.142 | |
| Post-test | 44.20 | 2.0124 | 5.8 |

Results on table 1 shows that the pre-test mean of the students before they were taught vocabulary using Vocabulary Spelling City is 38.48, while the post-test mean score after treatment is 44.20, giving a gain score of 5.8. This means that VSC has good impact on students' learning.

**Table 2: Mean and Standard Deviation of the Pre-test and Post-test Scores of Male and Female Students Taught Vocabulary with Vocabulary Spelling City Games**

| Gender | Pre-test | | Post-test | | Gain Score |
|---|---|---|---|---|---|
| | X | SD | X | SD | |
| Males | 42.34 | 6.85 | 45.01 | 6.79 | 2.67 |
| Females | 41.94 | 5.25 | 41.95 | 2.09 | 3.03 |

Table 2 shows the pre-test mean score of males of 42.34 and a post-test mean of 45.01with a gain score of 2.67. The females have a pre-test mean of 41.95 and a post-test mean score of 44.98 and a gain score of 3.03. The implication of this result is that both males and females benefitted from the use of VSC in the post-test with the females having higher gain score than the males.

**Table 3: t-test Results of Male and Females Taught Vocabulary with Vocabulary Spelling City Games**

| | X | SD | t | df | Sig. |
|---|---|---|---|---|---|
| Males | 53.67 | 17.85 | .230 | 58.00 | .818 |
| Females | 52.55 | 17.60 | .231 | 38.60 | .818 |

Results in table 3 shows that t calculated is .230 at the significant level of .818 for the males, while t calculated for the females is .231 and still significant at .818. This result signifies that the difference in the mean scores of 53.67 of the males and 52.55 of the females is not statistically significant. It therefore means that the hypothesis claiming no significant difference is accepted.

**Discussions**

The results of this study have shown that students achieve better using digital games to learn vocabulary as games can create an engaging learning environment. Implementation of digital games in English language classrooms to teach vocabulary is seen to be an effective tool to liven up traditional English lessons, while at the same time boosting learners' motivation. This finding is in agreement with the earlier findings of Andreani and Ying (2019); Dincer and Dincer (2021); Costuchen et al. (2021) and Patra et al. (2022). These studies differently reported the efficacy of digital games on students' achievement. However, the finding of this study is at variance with the study carried out by Mayer (2014) who reported that serious games used in language learning did not surpass conventional teaching methods. Outside of vocabulary acquisition, digital games have the potential to increase learner motivation and reduce anxiety. Motivation is a key aspect in learning, as in most aspects of life. Increase in motivation can lead to more personal initiatives by the learners, in this case by actively wanting to play more. The enthusiasm may spill over to the learners' life outside of school and result in them engaging in more learning-activities with or without the teacher, a benefit which will not be as prevalent with the use of textbooks.

Regarding gender, the results yielded no statistically significant difference between males and females in the post-test. This is in an agreement with the finding of Calvo-Ferrer and Belda-Medina (2021) and Hitosugi, et al. (2014). In fact, Calvo-Ferrer and Belda-Medina (2021) reported that there was no correlation whatsoever between gender and any relevant variable (i.e., number of target items learnt, frequency of use of target items in the game, proficiency in English). This finding however contradicts the study conducted by Rasti and Vahdat (2013) which found that males were more successful in learning vocabulary through video games.

**Conclusion**

The results of this study have shown that digital games utilized in vocabulary learning have the capacity to increase motivation in students and thus engage them positively. Games evoke motivation in students and reduce anxiety in learning. This reduced anxiety has, in turn, been proven to enhance memory (Kral'Ova et al., 2022). Contrary to popular opinions expressed in previous studies that gender has influence on vocabulary learning in favour of males, this study found, on the contrary, that gender is not a predictor of vocabulary learning when taught with digital games.

**Recommendations**

Based on the findings of this study, the following recommendations are made:

1. The traditional classroom language instructions should be modified to provide contexts and examples directly applicable to the goals of vocabulary teaching using digital games, which may therefore promote a deeper understanding and retention of new concepts.

2. Further research on the effectiveness of different teaching–learning games should be carried out to clarify which medium is optimal for teaching vocabulary for incorporation into the teaching–learning process.

3. More researches are needed on gender correlation within the outcomes of digital games. These researches could possibly lead to the incorporation of digital games into the teaching and learning of English vocabulary instructions, not only as a supplementary instruction strategy, but possibly as a full alternative to vocabulary teaching and learning.

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