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VOGPro (Vocabulary Offline Gamification Program) and the Academic Vocabulary Skills of Grade 12 Students of Kalanawe II National High School

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Abstract

Aim: This study aimed to determine the effectiveness of a teacher-made, game-based, contextualized learning innovation using interactive hyperlink presentation that was designed as an intervention among the Grade 12 students of Kalanawe II National High School to enhance their academic vocabulary skills in reading complex academic text.

Methodology: The descriptive-evaluative research design was used to determine the effectiveness of VOGPro in terms of the content, relevance, acceptability and usability. The study used the experimental research design particularly the pre-test and post-test to find out the effectiveness of the VOGPro. The data gathered were analyzed using both descriptive and inferential tools such as mean and t-test.

Results: Based on the results, the VOGPro had a qualitative description of excellent, with above 91-100% quality standard. Further, the significant difference between the pre-and-posttests scores of the control and experimental groups ($t(30)=19.11, p=2.002$) disclose the positive impact of VOGPro on the academic vocabulary skills.

Conclusion: The results of the motivation inventory revealed that the students were highly motivated to play the VOGPro. Hence, it is highly recommended that VOGPro can be utilized or adopted for the secondary students to enhance their academic vocabulary skills in reading academic text and another study could be conducted using VOGPro.

Keywords: game-based, contextualized learning innovation, academic vocabulary skills

INTRODUCTION

Based on the K-12 Curriculum, Senior High School Students are expected to develop both academic and professional skills. One of the skills that they must possess is the academic reading skill. Academic reading demands vast academic vocabulary knowledge that make the reading significant, worthwhile and able for students to purposeful read the range of lengthy academic texts (Sengupta, 2013).

In reading academic text students are anticipated to encounter complex academic vocabulary. Hence students need to obtain a rich knowledge of academic words for independent reading comprehension and to improve competency in all areas of communication. Sibold (2015) accentuated that by having vocabulary activities teachers can help even the vulnerable students to develop their academic vocabulary skills to comprehend the academic text they read.

Locally, Technical-Vocational-Livelihood Grade 12 students of Kalanawe II National High School had been evidently experiencing several constraints in reading academic text based on the low scores during formative assessment and passiveness during reading activities. To further evaluate and have a valid claim on the students' low performance and struggle in reading academic text, the researcher conducted a preliminary assessment on the first semester. Unfortunately, the result of the initial study supported the claim that the underdeveloped academic vocabulary knowledge and low interest in reading were the persistent source of difficulty and barrier to academic reading.



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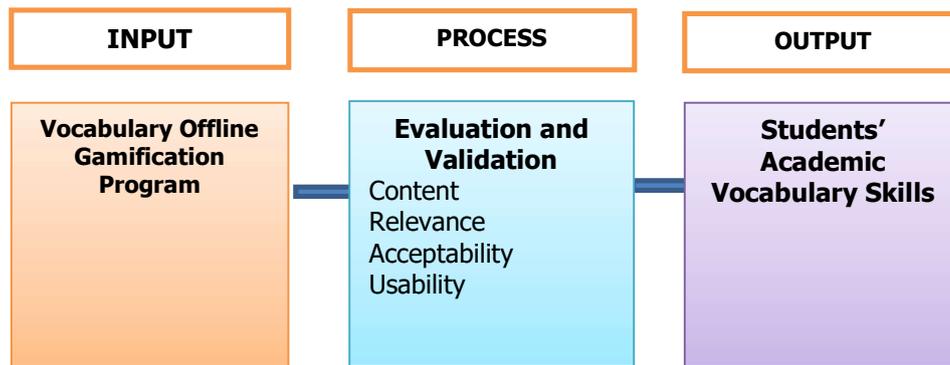
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Thus, to address the grade 12 students' weak level of academic vocabulary skills, the researchers come up with interactive, contextualized VOGPro that would help the students to improve their academic vocabulary knowledge. With this innovation, the VOGPro could instigate active learning and act as learning technology.

The diagram below illustrates how to determine the effectiveness of the utilization of VOGPro and the Academic Vocabulary Skills of Grade 12 TVL students.



Research Questions

The study aimed to evaluate and determine the effectiveness of the Vocabulary Offline Gamification Program (VOGPro) to the Grade 12 students of Kalanawe II National High School.

Specially, the study sought to answer the following:

1. What is the level of the evaluation of the VOGPro as an intervention to enhance the Grade 12 Students' vocabulary skills in terms of its:
 - 1.1 content;
 - 1.2 relevance;
 - 1.3 acceptability; and
 - 1.4 usability?
2. What is the level of the academic vocabulary skill of Grade 12 Students from control and experimental group in their pretest and posttest?
3. Is there a significant difference on the Grade 12 Students' vocabulary skills between the control and experimental group in the pretest and in the posttest?
4. Is there a significant difference between the mean gain scores of the control group and experimental group in terms of the students' academic vocabulary skill?
5. What is the students' intrinsic motivation level after using VOGPro?

Hypothesis

Given the stated research problem, the following hypotheses were tested on 0.05 level of significance:

Hypothesis 1: There is significant difference on the students' academic vocabulary skills between the control and experiment groups in the pretest and posttest.

Hypothesis 2: There is significant difference between the mean gain scores of the control group and experimental group in terms of academic vocabulary skills



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METHODS

Research Design

The descriptive-evaluative design was used to determine the quality of the VOGPro in terms of its content, relevance, instructional quality and usability. Further, experimental research design was utilized to give distinct comparison and differences particularly the pre-test and post-test, non-equivalent and randomized groups design to find out the desired level of academic vocabulary skills among grade 12 students.

Population and Sampling

The overall class of the Grade 12 T-V-L students enrolled during the second semester of the school year 2021-2023, underwent a simple random sampling through a lottery method.

Moreover, five (5) English teachers and (5) ICT teachers were invited to act as evaluators/validators of the VOGPro to evaluate in terms of its content, relevance, acceptability, and usability.

Instrument

The research instruments for the study were the VOGPro, evaluation and validation instrument, and the Vocabulary Test (Pretest and Posttest).

For the interpretation of the results of the evaluation and validation of the panel of experts, the Likert-five (5) scale from the study of Buyao (2017).

The Academic Vocabulary Test Instrument was adapted from Simonton (2016) and was modified by the researchers to be used in the pretest and posttest of the respondents that was evaluated by the English Teachers and pilot tested, which comprises thirty (30) items. Further, the evaluation of the vocabulary skills the standardized assessment and rating system transmutation table of the Department of Education Order No.73,s.2012 was adapted based on the proficiency levels.

The motivational survey was adapted and revised from Ronimus et al. 2014 which consisted of 15 five-point Likert items. For the evaluation of the intrinsic motivational survey of this study the scale below was used.

Data Collection

The data were gathered, read, and analyzed following the objective of the study and in adherence to all protocols in the conduct of research.

Treatment of Data

Researchers had made use of the weighted mean in the evaluation and validation of the VOGPro and simple mean to describe the level of the academic vocabulary skills of the respondents in pre-test and post-test from the control group and experimental group. The mean percentage was used to determine the students' intrinsic motivation level after using VOGPro.

Pre-test has been applied before the utilization of VOGPro and post-test has been applied after 300 minutes of VOGPro playing, in order to investigate the effect of game.

Subsequently, t-test was applied to conclude the significant difference of the level of academic vocabulary skills of the students between the control and experimental groups in the pretest and posttest. Further, t-test is also used to determine the significant difference between the mean gain scores.

Ethical Considerations

The researcher ensured that all research protocols involving ethics in research were complied with for the protection of all people and institutions involved in the conduct of the study.



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RESULTS and DISCUSSION

The following presents the results of the research according to the order by which the problem statements were presented in this study.

Level of Evaluation of VOGPro in Terms of its Content, Relevance, Acceptability, and Usability

The table below presents the summary of the grand mean ratings on the content, relevance, acceptability and usability on the level of evaluation of the VOGPro

Table 1. Grand Mean Rating on the Content, Relevance, Acceptability and Instructional Quality of the VOGPro

INDICATORS	MEAN	VERBAL DESCRIPTION
Content	4.85	Excellent
Relevance	4.90	Excellent
Acceptability	4.91	Excellent
Usability	4.80	Excellent
GRAND MEAN	4.87	Excellent

As mirrored in Table 2, generally the summary of the grand mean ratings of developed VOGPro was assessed with a verbal description of excellent with a grand mean of 4.87 in terms of quality, relevance, and usability. This result support the claim of findings of Bakar and Nosratirad (2013), digital games can be utilized as a learning tool with enough practice, clear objectives and consistent playing to learn new vocabulary. Further, in accordance to the excellent result of **VOGPro** it supports the claim of Derakhshan and Khatir (2018) that when games and learning are combined, it can be educative and education environments can be entertaining.

Level of the Academic Vocabulary Skills in the Pretest and Posttest of the Control and Experimental Groups

Table 2 presents the mean level of the academic vocabulary skills of the control and experimental groups in pretest and posttest.

Table 2. Level of Academic Vocabulary Skills in the Pretest and Posttest of the Control and Experimental Groups

Groups	Pretest Mean Score	Verbal Description	Post test Mean Score	Verbal Description
Control Group	9.87	Very Weak	9.98	Very Weak
Experimental Group	9.60	Very Weak	26.50	Strong

The result during pretest accounts very weak academic vocabulary skills, it can be claimed that both groups have same level of struggle and same limited of academic vocabulary skills due to similar background knowledge. This alarming result find concurrence in the study of Bahrani (2014), which he discussed that in order for



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vocabulary development to take place, the learner must be exposed consistently to English vocabulary and this could possibly happen if teachers would integrate various engaging vocabulary activities

While the result in post-test evidently reveals that both groups have increased their academic vocabulary skills. The control group improved from its initial level (mean=9.87) but undesirably remains in very weak level (m=9.98). While, the experimental group's score indicates the high increase from very weak level to strong. This result further strengthens by what Feng (2009) suggested that with students' consistent practice and exposure to the vocabulary words, using technological games the degree of automaticity and learning would be increased.

Significant Difference on the Students' Academic Vocabulary Skills between the Control and Experiment Groups in the Pretest and Posttest.

Table 3 shows the t-test analysis on the Academic Vocabulary Skills of the students between the Control and Experimental Groups in Pretest and Posttest.

Table 3. Analysis of the students between the Control and Experimental Groups in Pretest and Posttest

PRETEST								
Groups	N	Mean	SD	Mean Difference	Df	Computed t	Tabular Value	Interpretation
Control	30	9.97	3.83					Not significant
				0.34	58	.29	2.02	
Experimental	30	9.63	5.00					Not significant
POST TEST								
Groups	N	Mean	SD	Mean Difference	Df	Computed t	Tabular Value	Interpretation
Control	30	10.33	3.30	15.24	58	19.11	2.02	Significant
Experimental	30	25.57	2.87					Significant

The findings of the pretest show that there is no significant difference ($t=.29 < 2.02$) between the students' level of the academic vocabulary skills, which could infer that no intensive intervention strategy could affect the students' academic vocabulary skills.

While the result in posttest reveals that the computed t-value (2.02) is less than the t-critical value (19.11) at .05 level of significance at 58 degree of freedom, this shows an evidence to suggest that the students of the experimental group has statistically significant higher scores after the utilization of the VOGPro. Notably, the result implies that the intervention conducted has a significant and positive effect on the expansion of academic vocabulary skills of the T-V-L Grade 12 students.



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Significant Difference between the Mean Gain Scores of the Control Group and Experimental Group in terms of Academic Vocabulary Skills

The table below presents the significant difference between the mean gain scores of the control and experimental groups in terms of the students' academic vocabulary skills.

Table 4. Result on the Mean Gain Scores between the Control and Experimental Groups in terms of Academic Vocabulary Skills.

Groups	N	df	Mean Gain	SD	Computed t	Tabular Value	Interpretation
Control	30	58	.36	3.57	6.06	2.002	Significant
Experimental	30		15.94	8.95			Significant

The table above infers that there is a significant difference between the control and experimental groups in their mean gain scores. It was also gleaned that the experimental group has a higher standard deviation (SD=8.95) than the control group (3.57). This simply indicates that the data points are spread out over a wider range of values considering that the respondents are heterogeneous group. It means that when the VOGPro was used as method of enriching academic vocabulary skills, it contributed immensely to the progress and expansion of the students' academic vocabulary knowledge under experimental group.

Summary of the Experimental Group Intrinsic Motivational Level

The results of the motivation survey, which has been filled in by the students in experimental group, are given in Table 5.

Table 5. The Grand Mean Rating of the Motivational Survey

Questions	Mean Rating	Verbal Description
I liked the VOGPro	5	Strongly Agree
I thought it was very interesting.	5	Strongly Agree
I think this is pretty enjoyable.	4	Agree
I think that I am good at it.	4	Agree
I am pleased with my performance on this.	4	Agree
I was so relaxed while I was doing it.	5	Strongly Agree
I believe that this may be very useful for me.	5	Strongly Agree
I want to do this again because it develops me.	5	Strongly Agree
I believe that it may be beneficial for me.	5	Strongly Agree
I think that it is an important activity.	5	Strongly Agree
I think learning new English words is fun.	5	Strongly Agree



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This help me understand the text I read	5	Strongly Agree
VOGPro is useful when learning new English words.	5	Strongly Agree
The points achieved in the VOGPro motivated me to learn more academic vocabulary	5	Strongly Agree
VOGPro add value in reading academic text	5	Strongly Agree
OVERALL	5	Strongly Agree

In accordance with the analyzed results of the motivation inventory, the students were highly motivated to play and answer the VOGPro in their EAPP subject. Most of them have positive thoughts about learning academic vocabulary skills through playing digital games.

Approximately all of the students who played the VOGPro strongly agree that the game develops their academic vocabulary skills and add value in reading academic text. These results strengthen the claim of Feng’s (2009) and Shaw’s (2010) concepts that the utilization of games would be an agreeable and motivating strategy to engage the students and increase their desire to develop their vocabulary knowledge.

Summary, Conclusions, and Recommendations

According to the outcome of this study, the **VOGPro** is excellent as to its content, relevance, acceptability and usability as evaluated by the panel of experts.

Initially, the control and experimental group have the same level of academic vocabulary skills indicating the homogeneity of the students during the pre-test. The students who played the **VOGPro** showed a relatively higher performance in the posttest as compared to the control group who haven’t undergone the intervention.

It is clear that the **VOGPro** is highly effective as an intervention in enhancing the academic vocabulary skills of the TVL grade 12 students as revealed in the posttest result of the experimental group, which is also significantly different from control group who got into usual teaching method.

In accordance with the analyzed results of the motivation inventory, the students were highly motivated to play the **VOGPro** in their EAPP subject. To conclude, this action sheds light into the possible usage of **VOGPro** as innovation and intervention. Moreover game-based learning proved to be effective in terms of enhancing academic vocabulary knowledge.

On the basis of the conclusions of the study, the following recommendations were made: The **VOGPro** should be adopted and utilized particularly to Grade 12 students who have difficulties in academic vocabulary. The effectiveness of the **VOGPro** can be adapted by the teachers as their teaching strategy inside the classroom and can be used to assess and monitor the secondary students’ comprehension that will serve as their innovative strategy in the teaching-learning process. School administrators should support the use of the **VOGPro** to cater the need of the secondary students to expand their vocabulary skills for better comprehension and in order to upgrade their reading performance. Another study can be conducted to enhance the students’ academic vocabulary skills using the **VOGPro**.

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