Grade 12 Senior High School Students' Efficiency in Vocabulary Building Via Interactive Digital Tool (VERBAID)

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Abstract— The DepEd Division in Binan City, Laguna manages public schools, supports staff development, and promotes literacy through early childhood education and community involvement. To address these goals, the researcher introduced VERBAID, an interactive digital tool for Grade 12 students. This tool aimed to enhance vocabulary, reading, writing, language confidence, digital literacy, and independent learning. It also provided data-driven insights and professional development opportunities for teachers. Using a pretest-posttest design on Grade 12 students in Binan City, the study found that VERBAID significantly improved vocabulary skills, with scores rising from 13.714 to 20.833. The observed improvement was evident in the significant difference between pretest and posttest mean scores. The study underscored VERBAID's potential for vocabulary education and recommended its use across age groups in educational settings. It stressed the importance of teacher training and ongoing research for optimal implementation. Future research with larger, diverse samples and longitudinal studies could further validate VERBAID's effectiveness and explore its long-term impact on vocabulary development.

Keywords— VERBAID, vocabulary skills, digital tool, comprehension, literacy, enhancement, English, training, support

I. INTRODUCTION

In today's rapidly changing educational system, the quest for enhancing students' language skills remains an utmost concern. In the study of Leyaley (2023), he explored pre-service students' passiveness in the classroom, highlighting technical, psychological, and environmental factors. Factors include peer pressure, language use frequency, and reliance on translation. Students rarely engage in English-speaking conversations. This means that while pre-service students' passiveness in the classroom is influenced by a complex interplay of technical, psychological, and environmental factors, it is not an impossible challenge. With targeted interventions and a commitment to creating an empowering learning environment, educators can help students overcome these obstacles and unlock their f Vocabulary building is crucial for Grade 12 senior high school students for various reasons. It is essential for effective communication, academic success, critical thinking, reading comprehension, writing proficiency, career opportunities, college readiness, cultural literacy, confidence, and lifelong learning. A rich vocabulary enables students to express themselves clearly, concisely, and accurately, both in writing and spoken language. It also aids in understanding complex texts, assignments, and exams, enhancing their understanding and performance in coursework. A diverse vocabulary enhances problem-solving and decision-making abilities, improves reading comprehension, and enhances writing proficiency.

A robust vocabulary also opens doors to various career opportunities, such as journalism, marketing, law, and business. It also enhances cultural literacy, boosts self-esteem, and promotes lifelong learning. Integrating interactive digital tools like VERBAID into Grade 12 education can make vocabulary building engaging and efficient, catering to modern learning styles and full potential in English language acquisition.

Vocabulary building is crucial for Grade 12 senior high school students for various reasons. It is essential for effective communication, academic success, critical thinking, reading comprehension, writing proficiency, career opportunities, college readiness, cultural literacy, confidence, and lifelong learning. A rich vocabulary enables students to express themselves clearly, concisely, and accurately, both in writing and spoken language. It also aids in understanding complex texts, assignments, and exams, enhancing their understanding and performance in coursework. A diverse vocabulary enhances problem-solving and decision-making abilities, improves reading comprehension, and enhances writing proficiency. A robust vocabulary also opens doors to various career opportunities, such as journalism, marketing, law, and business. It also enhances cultural literacy, boosts self-esteem, and promotes lifelong learning. Integrating interactive digital tools like VERBAID into Grade 12 education can make vocabulary building engaging and efficient, catering to modern learning styles.

Proficiency in vocabulary plays a crucial role in fostering effective communication, critical thinking, and academic success. Based on a blog posted by Textinspector (2022), vocabulary knowledge is perhaps the most important factor when it comes to reading comprehension, both for native and non-native speakers. Recognizing this, educators and researchers have been diligently exploring innovative methods to augment vocabulary acquisition. Among these, the integration of cutting-edge digital tools has emerged as a promising avenue for empowering Grade 12 senior high school students on their journey towards lexical mastery.

This study scrutinizes the captivating realm of digital education, where a unique and highly interactive digital tool named "VERBAID" takes center stage. In an era where technology seamlessly intertwines with learning, Miller (2019) explains about the most failure-prone aspects of teaching, including pinch points, boring material, and concepts that repeatedly need reteaching, causing students to leave unprepared for the next course. She emphasized that technology must be used with "tangible benefits," and technology "has the best chance of [providing those benefits] when it targets the hardest or most time-consuming aspects of a course." She further explained to utilize technology to address teaching problems, identify learning objectives, and reinforce thinking skills in an interactive way, rather than just for its convenience or fun. At this point, VERBAID represents a beacon of hope for educators seeking to harness the power of digital intelligence in nurturing linguistic competence. However, the key question that beckons us is: How efficient is VERBAID in elevating the vocabulary skills of Grade 12 senior high school students?

To address this question, this journey is embarked which combines the nuances of human intelligence with the promise of modern technology. Through meticulous research, comprehensive analysis, and thoughtful insights, we aim to unravel the impact of VERBAID on the vocabulary building journey of these young minds. By weaving together, the threads of educational psychology, pedagogical theories, and digital innovation, we intend to shed light on the intricacies of this dynamic learning tool and its potential to revolutionize the way we cultivate language proficiency among the leaders of tomorrow.

This study, on this intellectual voyage, will be guided by the combined effect of human ingenuity and digital advancement, to uncover the true potential of VERBAID in shaping the linguistic skills of Grade 12 senior high school students. Together, we will explore the intersections of traditional wisdom and modern technology, seeking to unlock the doors of vocabulary enrichment for the next generation of learners.

VERBAID, an interactive digital tool for Grade 12 senior high school students, can fill a gap in the educational system by offering personalized, engaging, and accessible vocabulary building experiences. It caters to individual learning needs, making vocabulary acquisition more relevant and engaging. VERBAID is accessible anytime and anywhere, promoting consistent vocabulary development. Teachers can use data-driven instruction to address specific areas of struggle. It also promotes digital literacy, ensuring students become comfortable with technology. VERBAID promotes equity and inclusivity by accommodating different learning styles and abilities. It prepares students for future learning environments where technology is often integrated into coursework. VERBAID also offers a wider vocabulary database and flexibility in learning schedules. Overall, VERBAID offers a unique and innovative approach to vocabulary building, promoting equity and inclusivity in education.

The Department of Education, established in 1863, was reorganized in the 20th century and mandated by Republic Act 9155, or the Governance of Basic Education Act of 2001. It formulates, implements, and coordinates policies, plans, programs, and projects in formal and non-

formal basic education, supervising elementary and secondary education institutions and ensuring a comprehensive, integrated system. (Deped-Binan, n.d.).

The Department of Education (DepEd) Division of Binan City, Laguna, is a local authority in the Philippines responsible for managing public education within its jurisdiction. It oversees public elementary and secondary schools, ensures quality education, and supports teacher and school personnel professional development. The division comprises various public schools, including elementary and secondary institutions, providing academic, extracurricular, and support services. The Division Superintendent leads the division, managing educational activities. The curriculum and programs align with national guidelines, including the K-12 basic education program. The division collaborates with local government units, parent-teacher associations, and stakeholders to improve education quality and address community needs.

The DepEd Division of Binan City, Laguna, is committed to enhancing literacy levels among its students and the community. To achieve this, the division can implement strategies such as early childhood education, quality teacher training, library and reading programs, literacy assessment, parent and community involvement, multilingual education, technology integration, collaboration with NGOs and partners, assessment, and data analysis, promoting a reading culture, inclusive education, and advocacy and policy development. These initiatives aim to create a strong foundation in literacy skills, equip teachers with effective teaching strategies, maintain well-equipped libraries, and use technology to aid in reading and language development. By implementing these strategies, the division can contribute to a more literate and empowered society, aligning with the Department of Education's mandate.

Because of this, the researcher of this study is proposing an interactive digital tool called VERBAID for Grade 12 senior high school students' tool to contribute to the education system which aims to enhance vocabulary skills, improve reading comprehension, enhance writing proficiency, increase confidence in language use, foster digital literacy, encourage independent learning, provide data-driven insights, and provide teacher professional development opportunities. The tool also encourages students to take ownership of their learning, promoting self-directed learning habits and a lifelong commitment to improving their language skills. Teachers can use this data to tailor instruction and identify areas needing additional support. As students become proficient in vocabulary and language skills, they can serve as positive role models and mentors, creating a culture of continuous improvement in literacy. VERBAID can contribute to improved literacy rates and overall educational outcomes in the DepEd-Binan Division.

II. RESEARCH METHODOLOGY

The research design employed in this study was a pretest-posttest one group quasi-experimental design. This type of design was commonly used to measure the impact of an intervention or treatment on an outcome variable by comparing participants' scores before and after exposure to the intervention. In this case, the intervention was the use of VERBAID, an interactive digital tool aimed at enhancing vocabulary skills and various language-related competencies. The study had focused on Grade 12 senior high school students in Binan City, Laguna, who had provided informed consent for their participation. It had utilized a quasi-experimental design with a non-random participant group, lacking a control group, and had aimed to measure the intervention's effect by comparing pre- and post-intervention measurements. This approach allowed the researcher to assess the impact of VERBAID on vocabulary skills and other language-related competencies in the selected group.

The respondents for this study were Grade 12 senior high school students who had been enrolled at Binan City Senior High School-West Campus during the school year 2023-2024. The study had been specifically designed to evaluate the efficiency of VERBAID, with a focus on vocabulary skills and language-related competencies. It did not consider the potential effects of external factors such as students' prior language proficiency or socio-economic background on vocabulary acquisition. The respondents had been selected using a purposive sampling method, which is a non-probability sampling approach that involves selecting specific participants based on their suitability for meeting the research goals. In this case, the study had targeted Grade 12 senior high school students from Binan City Senior High School-West Campus, specifically from the Aristotle section. The researcher had been assigned to this class for the 1st semester of the school year 2023-2024, and there had been 42 students using VERBAID in this section, all attending the English for Academic and Professional Purposes (EAPP) class.

To assess the impact of VERBAID on the students' vocabulary-building skills, a combination of pre-test and post-test methods was employed. Both groups, the pre-test and post-test, had taken standardized vocabulary tests or custom tests that had included vocabulary items selected from the curriculum. Standardized tests are administered consistently, with the same questions, time limits, and scoring methods for all participants. The research utilized a standardized vocabulary knowledge test and a survey

questionnaire to assess students' perceptions of VERBAID and its impact on their vocabulary skills. The research procedure involved three phases: Preparation, Data Gathering, and Data Analysis.

The researcher obtained approval from the School Head and coordinated with the Schools Division Office, ensuring the design and validation of research tools and instruments. A pretest/posttest or Vocabulary Knowledge Test was administered to respondents before and after the intervention. The data was organized, tabulated, analyzed, and interpreted using SPSS, ensuring a structured and effective research process.

In the statistical treatment of data, inferential statistics had been employed to analyze the data. Inferential statistics are used to make judgments about the probability that observed differences between groups are dependable and not due to chance. The data had been tallied and tabulated for clarity, and statistical procedures had been utilized to test the hypothesis. The study used an independent T-test to assess pretest and posttest outcomes, aiming to determine if there was a significant difference in learners' performance before and after using VERBAID. A P-value approach was used to state the hypothesis and select appropriate test statistics. A Likert scale was used to determine students' attitudes and views about VERBAID's impact on their vocabulary skills.

The study had used a pretest-posttest one group quasi-experimental design to evaluate the impact of VERBAID on Grade 12 senior high school students' vocabulary-building skills and language-related competencies. The research instruments had included standardized vocabulary tests and survey questionnaires. The research procedure had involved three phases, from preparation to data analysis, and had employed various statistical methods to analyze the data and test the hypothesis. The study had focused on a purposive sample of students from Binan City Senior High School-West Campus, making it specific to this group.

III. RESULTS AND DISCUSSION

3.1. Pretest and Posttest Mean Scores

Table 1 compared the pretest and posttest mean scores of Verbaid participants. The pretest score had been 13.714, while the posttest score had been 20.833, indicating an average increase in scores. This had suggested that the participants had shown improvement in their vocabulary skills after using Verbaid, with their scores appearing to have enhanced on average. This had indicated a significant improvement in vocabulary skills among the participants. Stevens (2023) had stated in her article that learning is ceaseless. You could have cultivated an erudite persona as

an adolescent—or even as an octogenarian—by building your vocabulary. Creating habits to help you learn and use the most accurate words in your language would have made it easier to communicate, write, and think. Like in Stevens' perspective, Verbaid had assisted users in creating habits that promoted the acquisition and application of precise vocabulary. This, in turn, had facilitated better communication, writing, and thinking. Through the use of Verbaid, individuals could have actively participated in the lifelong journey of vocabulary enhancement, thereby reinforcing the idea that learning was indeed ceaseless, as Stevens had suggested.

Table 1. Pretest and posttest mean scores of the VERBAID participants.

	Mean	N	Std. Deviation
PRETEST	13.714	42	5.35
POSTTEST	20.833	42	50

3.2. Significant Difference Between the Pretest and Posttest Mean

Scores of the Respondents who Participated in VERBAID

The data in the table below indicated a significant difference between the pretest and posttest mean scores of Verbaid respondents. The pretest had a mean of 13.714 and a standard deviation of 5.35, with a standard error of the mean of 0.575. The posttest had a mean of 20.833 and a standard error of the mean of 0.575. Both pretest and posttest t-values were less than 0.001, indicating a highly significant difference, suggesting that the observed difference was unlikely to be due to random chance.

Vocabulary skills were crucial for students' academic success, both in and out of the classroom. Effective strategies helped educate children as they learned new words. Developmental delays, reading difficulties, and infrequent exposure to new words could have hindered progress. Passive learning was not the best approach for vocabulary skill growth (Melvin, 2023).

Verbaid aligned with the idea that effective strategies were crucial for educating children and helping them learn new words. Developmental delays, reading difficulties, and limited exposure to new words could have posed challenges for children's vocabulary development. Passive learning, as mentioned by Melvin in 2023, was not the most effective approach for nurturing vocabulary skills.

Verbaid, as an interactive digital tool designed for vocabulary building, had offered an active and engaging approach to overcome these challenges. It had provided strategies and tools to enhance vocabulary skills actively, making the learning process more effective and enjoyable

for children, addressing the issues that passive learning may not have adequately tackled.

Table 2. Significant difference between the pretest and posttest mean scores of the respondents who participated in VERBAID.

	Paired Differences					t	df	Sig. (1-tailed)
	Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
				Lower	Upper			
PRETEST	13.714	5.35	0.575	-Inf	-6.15	< .001	41	.575
POSTTEST	20.833	50	0.575	-Inf	-5.5			

3.3. Perceptions of the Students about VERBAID

Table 3 presents the results of the survey about the perceptions of the respondents about VERBAID. The first statement, "The use of the VerbaID digital tool significantly improved my vocabulary skills," received the highest mean rating of 4.78, indicating a strong consensus among respondents who strongly agreed with this statement. This ranking, positioned at number one, signifies that respondents highly appreciated the tool's effectiveness in enhancing their vocabulary skills. In the second statement, "VerbaID motivated me to engage more actively in vocabulary-building activities," respondents also expressed a strong agreement, with a mean rating of 4.58. While the mean was slightly lower than the first statement, the third-place ranking illustrates a significant level of motivation that the VerbaID tool imparted to the participants in actively building their vocabulary. The third statement, "VerbaID has expanded my vocabulary in a way that is relevant and useful for my studies," achieved a mean rating of 4.66, signifying a strong consensus among respondents who strongly agreed with this statement. Its second-place ranking underscores the tool's importance in expanding vocabulary in a manner pertinent to their studies.

Continuing to the fourth statement, "I feel more confident using newly learned vocabulary in my English class after using VerbaID," respondents showed strong agreement, with a mean rating of 4.57. This positive feedback, while slightly lower than the previous statements, positions it as the fourth-ranked statement, highlighting the boost in confidence that VerbaID offered in using newly acquired vocabulary. The fifth statement, "The use of VerbaID has positively impacted my overall academic performance," received a mean rating of 4.53, reflecting strong agreement from respondents. Positioned as the fifth-ranked statement, it emphasizes the favorable impact of VerbaID on the participants' overall academic performance.

Moving to the sixth statement, "VerbaID has had a lasting impact on my ability to retain and recall new

vocabulary words," respondents expressed agreement, with a mean rating of 4.47. While the mean is slightly lower than some previous statements, its sixth-place ranking indicates that respondents recognized the enduring impact of VerbaID on their ability to retain and recall vocabulary. The seventh statement, "Using VerbaID consistently has significantly enhanced my vocabulary skills," obtained a mean rating of 4.01, reflecting agreement among respondents. Ranked eighth, it underscores the perceived enhancement in vocabulary skills through consistent usage. In the eighth statement, "I would recommend VerbaID to my peers as an effective tool for vocabulary improvement," respondents generally agreed, with a mean rating of 3.89. Positioned as the ninth-ranked statement, it highlights the inclination to recommend VerbaID to others for vocabulary enhancement. The ninth statement, "VerbaID effectively explained and provided context for new vocabulary words," received a mean rating of 3.63, signifying agreement among respondents. Ranked tenth, it acknowledges the tool's effectiveness in explaining and contextualizing new vocabulary words. Finally, the tenth statement, "VerbaID has made learning new words more enjoyable and interesting for me," earned a mean rating of 4.43, indicating agreement. Positioned as the seventh-ranked statement, it underscores the role of VerbaID in making the process of learning new words more enjoyable and interesting for the participants.

The survey results above revealed a strong consensus among respondents regarding the positive impact of the VerbaID digital tool on their vocabulary development. The data demonstrates that VerbaID significantly improved their vocabulary skills, motivated active engagement in vocabulary-building activities, and expanded their vocabulary in ways relevant to their studies. The tool also instilled confidence in using newly acquired vocabulary, positively impacting overall academic performance and offering lasting benefits in retaining and recalling vocabulary. Although some statements received slightly lower mean ratings, they still emphasize the tool's

effectiveness in enhancing vocabulary skills and making vocabulary learning an enjoyable and interesting experience. In the study of Aprilani (2021), she stated that vocabulary learning in second and/or foreign languages is needed to make effective communication and it is impossible to use a language effectively without an adequate vocabulary and to master other skills in English. However, many senior high school students have poor knowledge of vocabulary mastery because the process of remembering vocabulary is considered bored and stressful. In alignment with the findings of Aprilani (2021), who emphasized the crucial role of vocabulary learning in second and foreign languages for effective communication and language mastery, the VerbaID digital tool addresses the challenges faced by senior high school students in this regard. Aprilani's study underscores that a strong vocabulary is indispensable for proficient language use. However, many students, particularly in senior high school, struggle with vocabulary mastery due to the perceived monotony and stress associated with traditional vocabulary retention methods. VerbaID, as an innovative digital tool, aims to make vocabulary learning engaging and enjoyable for students, addressing the concerns raised by Aprilani's research. By providing an interactive and effective platform for vocabulary enhancement, VerbaID offers a solution to the common issues faced by senior high school students in their journey to master language skills, ultimately contributing to more effective and stress-free language learning experiences.

Table 3. Perceptions of the students about VERBAID.

	QUESTIONS			Rank
		μ×	VI	
1	The use of the VerbaID digital tool significantly improved my vocabulary skills	4.78	SA	1
2	VerbaID motivated me to engage more actively in vocabulary-building activities	4.48	SA	2
3	VerbaID has expanded my vocabulary in a way that is relevant and useful for my studies	4.66	SA	3
4	I feel more confident using newly learned vocabulary in my English class after VerbaID	4.57	A	4
5	The use of VerbaID has positively impacted my overall academic performance	4.53	A	5
6	VerbaID has had a lasting impact on my ability to retain and recall new vocabulary words	4.47	A	6
7	Using VerbaID consistently has significantly enhanced my vocabulary skills	4.01	A	7
8	I would recommend VerbaID to my peers as an effective tool for vocabulary skills	3.89	A	8
9	VerbaID effectively explained and provided context for new vocabulary skills	3.63	A	9
10	VerbaID has made learning new words more enjoyable and interesting for me	4.43	A	10

IV. CONCLUSION AND RECOMMENDATION

Based on the summary of the results, several key conclusions were drawn from this study. Firstly, the pretest and posttest mean scores of the VERBAID participants clearly indicated a substantial improvement in vocabulary skills. The pretest mean score, initially set at 13.714, significantly increased to 20.833 in the posttest, demonstrating a notable enhancement in participants' vocabulary abilities. This increase in mean scores underscored a significant improvement in vocabulary skills among the participants, emphasizing the effectiveness of the VerbaID digital tool. Secondly, the study provided compelling evidence of a significant difference between the pretest and posttest mean scores of the respondents who participated in VERBAID. Detailed statistical analysis, incorporating paired differences, t-values, degrees of freedom, and significance levels, supported this finding. Both pretest and posttest t-values were well below 0.001, signifying a highly significant difference. This indicated that the observed enhancement in vocabulary skills was not a result of random chance, reinforcing the substantial impact of VerbaID in improving vocabulary skills, consistent with its objective of providing an effective platform for vocabulary development. Thirdly, the survey results revealed a strong consensus among respondents regarding the positive impact of the VerbaID digital tool on vocabulary development. Respondents consistently provided positive ratings for various statements related to

VerbaID. The first statement, highlighting the significant improvement in vocabulary skills, received the highest mean rating of 4.78, indicating a strong consensus and agreement among participants. Statements relating to motivation, vocabulary expansion, increased confidence in using new words, and the positive effects on overall academic performance all garnered favorable mean ratings. This illustrated the positive perceptions of respondents towards VerbaID. In summary, the results strongly suggested that VerbaID played a crucial role in enhancing vocabulary skills and making the process of learning new words engaging and interesting for participants, ultimately contributing to their language proficiency and academic success.

Building upon the conclusions drawn from this study, several recommendations emerge. Firstly, VERBAID should be implemented in educational settings to enhance students' vocabulary skills effectively. It offers a valuable resource for vocabulary development that can significantly benefit learners of all ages. Secondly, it is crucial to provide training and support for educators to ensure the optimal utilization of VERBAID in their teaching methods. This will help create a more productive learning environment. Thirdly, VERBAID should be promoted as a valuable resource for lifelong learning, emphasizing its role in continuous vocabulary enhancement. Encouraging individuals of all ages to engage with VERBAID can contribute to their language proficiency throughout their lives. Fourthly, ongoing research and development of VERBAID should be encouraged to maintain its efficiency and relevance. Regular updates and improvements will ensure that VERBAID remains an effective tool, meeting the evolving needs of learners. Lastly, further validation and data collection should be carried out through larger and more diverse participant samples and longitudinal studies. This will help validate the results obtained in this study and ensure the generalizability of VERBAID's effectiveness across various demographics. Additionally, longitudinal studies can provide insights into the long-term impact of VERBAID on vocabulary development. By implementing these recommendations, educators, students, and lifelong learners can maximize the benefits of VERBAID in their language proficiency and academic success journeys.

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