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RESEARCH ARTICLE

Impact of Web-Based Worksheets on English Vocabulary Learning and Student Motivation

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Abstract

This research examined the effectiveness of Liveworksheets, an interactive, web-based tool, regarding the academic performance and learning motivation of sophomores acquiring English vocabulary. Utilizing a mixed-methods design that incorporated paired samples t-tests alongside a post-intervention qualitative survey, the study uncovered statistically meaningful enhancements in both engagement and achievement. Specifically, the intervention triggered an elevation in overall motivation, with the most pronounced development centered around control beliefs and extrinsic goal orientation. Furthermore, participants demonstrated a remarkably significant rise in their vocabulary-focused academic results. Qualitative feedback supported these quantitative outcomes by revealing that the platform's real-time feedback mechanisms actively elevated student confidence and effort when utilizing newly learned terminology in academic contexts. Ultimately, the study determines that Liveworksheets serves as an effective catalyst, supporting the implementation of interactive digital solutions to simultaneously foster student involvement and boost academic success within higher education language classrooms.

Keywords: Liveworksheets, Motivation, Vocabulary Learning, Academic Achievement.

1. Introduction

Vocabulary learning is frequently acknowledged as a fundamental component of language acquisition. Words function as the building blocks of a language, enabling people to convey intended meanings. Thus, the significance of vocabulary in the process of learning a new language cannot be emphasized enough. Vocabulary encompasses all the lexical items used within language classes (Ur, 2005), and lexical knowledge is considered central to both communicative competence and the acquisition of a second language (Schmitt, 2000). Although vocabulary acquisition is essential for successful second language use, many learners struggle with comprehension and production due to insufficient word knowledge.

In language instruction, teachers employ a variety of strategies in language instruction to help students learn vocabulary, including the use of teaching aids including worksheets, wall charts, photographs, flashcards, and drawings. Worksheets are a type of printed instructional material widely developed and used by teachers to help learners achieve necessary knowledge, skills, and values (Kaymakcı, 2006). Teachers may foster a stimulating and enjoyable environment with worksheets, which will help students acquire difficult language through multifaceted, active involvement. Studies have shown that worksheets are capable of increasing students' interest in the lesson (Saka & Akdeniz, 2001) and involving learners directly in the learning process, thereby

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preventing boredom and making them motivated to learn. The use of worksheets is also consistent with active learning theory, which requires the active engagement of learners rather than the passive reception of information. Furthermore, according to the interest-based learning theory, aligning teaching materials with students' interests ensures engagement in learning and increases the potential for successful outcomes.

The pedagogical landscape has been significantly altered by technology, which plays a vital role in both language education and students' lives (Ahmadi, 2018; Riley et al., 2001). Technology is often incorporated by schools and universities as an assistant to improve the teaching and learning process (Ahmadi, 2018; Arifah, 2014; Francies, 2017; Harris et al., 2016; Riley et al., 2001). Following global events like the COVID-19 pandemic, the online delivery of educational content has become a necessity, requiring constant refinement of online teaching techniques (Hazaveh & Wanless, 2021). Worksheets, as an inquiry-based tool, have been shown to be effective in keeping students engaged and developing problem-solving skills, even in engineering technology courses. In online courses, increasing the number of problem-solving assignments, such as worksheets, can potentially enhance student engagement (Hazaveh & Wanless, 2021).

A web-based and mobile-assisted educational tool, Liveworksheets.com, enables teachers to update their lesson plans. Its primary purpose is to create interactive web resources from conventional printable worksheets (such as those in.pdf,.jpg, or.png format). These digital activities are unique because they incorporate learning elements only possible on computers, challenging students in innovative ways. The platform is designed to be accessible across various operating systems, including PCs, laptops, tablets, and smartphones.

Liveworksheets provide comprehensive support for language instruction, aiding students in practicing all four language skills (listening, reading, writing, and even speaking), along with foundational language areas like grammar and vocabulary. It is particularly valuable because tasks are graded automatically, which saves teachers significant time and effort that would otherwise be spent marking papers or providing comments. This automatic grading facilitates online, immediate formative assessment. Teachers can instantly receive student results, track their performance and progress, and identify knowledge gaps or weaknesses, allowing them to adjust lesson plans or intervene pedagogically in a timely manner.

For learners, Liveworksheets function as a valuable medium for online practice and foster opportunities for self-reflection both during and after lessons (Le & Prabjandee, 2023). The platform provides students with immediate feedback and scores upon submission, enabling them to promptly identify and correct their errors (Le & Prabjandee, 2023). One of the platform's notable strengths lies in the wide variety of tasks it offers, which extend beyond the constraints of many other online interactive tools that often emphasize only multiple-choice or simple gap-filling exercises. Through Liveworksheets, teachers can design diverse activities such as fill-in-the-blank tasks, matching and reordering exercises, word search and crossword puzzles, as well as writing assignments. More interactive options are also available, including drag-and-drop tasks and jigsaw puzzles generated through this feature (Le & Prabjandee, 2023). Furthermore, teachers can enrich their instructional materials by embedding audio files, hyperlinks, and video clips, particularly from YouTube, thereby enhancing student engagement (Le & Prabjandee, 2023). A distinctive and innovative element of Liveworksheets is the automatic pronunciation assessment function. This function allows teachers to incorporate a simple code (e.g., speak: mood) and select a preferred English accent (UK, US, or Australian), after which the system evaluates students' recorded voices automatically. This capability offers an advantage over other e-learning systems that typically require manual assessment of oral production (Le & Prabjandee, 2023). Due to its flexibility and range of functions, Liveworksheets can be effectively implemented in both online and onsite learning environments (Le & Prabjandee, 2023).

In light of these features, the present study aims to address the following research questions: first, to what extent do Liveworksheets enhance sophomores' motivation in English vocabulary learning? Secondly, does Liveworksheets influence sophomores' achievement in English vocabulary learning?

2. Literature Review

2.1 Impact of Worksheets on Learning Achievement

Worksheets have long played a central role in education as instructional materials that help students acquire essential knowledge, skills, and values (Kaymakcı, 2006; Soltanpour et al., 2021). Research on the effectiveness of worksheets highlights that

their success depends on factors such as the subject area, learner characteristics, and mode of delivery. In science education, for example, a study on the use of an e-worksheet supported by Liveworksheets in teaching chemical equilibrium found it to be both practical and well-received by students (Felitasari & Rusmini, 2022). The findings indicated that such digital worksheets not only enhanced students' cognitive understanding and science process skills but also fostered stronger collaboration. The interactive features were reported to promote teamwork and support deeper concept mastery, reinforcing the role of worksheets as tools that extend beyond individual learning to cultivate essential cooperative and problem-solving abilities (Felitasari & Rusmini, 2022).

Worksheets have also been adapted to support contemporary instructional approaches such as Differentiated Instruction (DI), which seeks to address students' varied readiness levels, interests, and learning preferences (Pratama, 2025). A study on the development of an English e-worksheet for 10th-grade students, designed with DI principles and implemented through the Liveworksheets platform, found the material to be both valid and practical. The research further indicated that this e-worksheet effectively supported learning outcomes and served as a useful supplementary resource for implementing DI in the classroom (Pratama, 2025).

In the field of engineering technology, research comparing traditional printed worksheets with their online counterparts submitted through a Learning Management System found no meaningful difference in students' learning outcomes (Hazaveh & Wanless, 2021). The study indicated that transitioning worksheets to a digital format did not hinder student achievement, suggesting that such adaptations can effectively support the move toward online learning environments in engineering education (Hazaveh & Wanless, 2021).

Although digital tools are often regarded as beneficial, research comparing paper and online worksheets in the context of English as a Foreign Language (EFL) vocabulary learning has produced mixed findings. A quasi-experimental study with Iranian young EFL learners (aged 8–12) reported that students working with paper worksheets showed greater gains in vocabulary learning than those using online worksheets (Soltanpour et al., 2021). The results suggested that, in this case, paper-based worksheets were more effective in supporting vocabulary acquisition, whereas the online format did not demonstrate the same level of impact (Soltanpour et al., 2021).

Scholars have suggested that the greater effectiveness of paper worksheets stems from their capacity to engage learners through multi-dimensional activities, such as coloring and drawing, which resonate with the energy levels and interests of young students (Soltanpour et al., 2021). In contrast, the limited impact of online worksheets has been linked to issues such as inadequate repetition, the absence of close teacher supervision, and students' tendency to view mobile devices more as sources of entertainment than as serious learning tools (Soltanpour et al., 2021). These findings align with broader critiques cautioning that technology should not be regarded as a universal remedy for educational challenges, as it may in certain contexts hinder rather than enhance learning (Alhusban, 2016; Carr, 2011; Stakkestad & Stordal, 2017; Strain-Moritz, 2016). Taken together, the literature indicates that although e-worksheets provide notable benefits in terms of accessibility and formative assessment, their effectiveness depends heavily on contextual factors such as the subject matter, learners' age, and classroom conditions.

2.2 Motivational Impact of Web-Based Worksheets

The effectiveness of e-worksheets in boosting student motivation is closely tied to several key features inherent in digital platforms, particularly those designed for formative assessment. Formative assessment, which aims to provide timely feedback and guide instructional adjustment, faces challenges in crowded, time-constrained classes (Kilickaya, 2017). E-worksheets, specifically through platforms like Liveworksheets, offer a solution by allowing teachers to create online tasks, quizzes, and tests that are graded automatically (Le & Prabjandee, 2023; Ryabchikova et al., 2020).

This automation provides students with immediate feedback and scores, enabling them to self-reflect on their errors and correct themselves, thereby fostering increased motivation to continue their study efforts (Le & Prabjandee, 2023; Bhandari, 2022). Furthermore, web-based assessment tools are perceived by students as supportive of their learning (Vogt et al., 2020). The design elements, such as colorful, eye-catching formats created directly on PDF or image files, also contribute to the motivating experience for learners (Le & Prabjandee, 2023).

Beyond instructional design, the task variability available in digital worksheets sustains engagement. Unlike simpler online tools that may focus only on multiple-choice or gap-filling activities, platforms

such as Liveworksheets allow for diversified tasks, including matching, drag-and-drop, word search, crosswords, and jigsaw puzzles (Le & Prabjandee, 2023). The ability to create exciting games from these features attracts significant learner attention and better connects students with the online lessons, peers, and teachers (Le & Prabjandee, 2023). This enhanced interactivity supports the goal of transforming passive learning into an engaging and dynamic experience (Le & Prabjandee, 2023).

From the perspective of learning management, web-based formative assessment tools provide flexibility to students, allowing them to complete assignments at their own pace and convenience (Bhandari, 2022). This flexibility aligns with individual workloads and commitments, encouraging more consistent study habits and advancement of knowledge (Bhandari, 2022). Additionally, increasing the number of problem-solving assignments, such as worksheets, within online courses is identified as a potential method for enhancing student engagement (Hazaveh & Wanless, 2021).

While the overall consensus supports the motivational benefits of e-worksheets, the literature also presents nuances regarding their efficacy, particularly concerning age and learning context. Certain scholars caution against assuming technology is a universal panacea for all educational problems, suggesting it may sometimes negatively impact learning (Alhusban, 2016; Carr, 2011; Stakkestad & Stordal, 2017; Strain-Moritz, 2016).

This caution is reinforced by a quasi-experimental study examining the effects of paper and online worksheets on Iranian young EFL learners aged 8 to 12 (Soltanpour et al., 2021). In this study, the online worksheets did not lead to notable improvements in vocabulary learning (Soltanpour et al., 2021). The researchers suggested that this limited effectiveness may be attributed to the learners' perception of mobile devices primarily as sources of entertainment rather than serious educational tools, which likely reduced the motivational impact of the online format (Soltanpour et al., 2021). In contrast, paper worksheets were found to be more effective, as they enabled a multi-dimensional learning approach that included physical activities, such as coloring and drawing, which were more closely aligned with the interests and energy levels of young learners (Soltanpour et al., 2021).

In contrast, in the context of an engineering technology course, switching the delivery of inquiry-based worksheets from printed, in-class assignments to identical online assignments did not result in a statistically significant difference in students' learning outcomes (Hazaveh & Wanless, 2021). This suggests that for more mature student populations and certain subject areas, the shift to online worksheet delivery can be achieved without negatively impacting learning achievement (Hazaveh & Wanless, 2021).

Overall, the academic literature strongly advocates for the use of e-worksheets due to their interactive features, which support modern pedagogical objectives such as providing instant formative assessment and increasing engagement (Le & Prabjandee, 2023; Ryabchikova et al., 2020). Nevertheless, effective implementation requires careful consideration of the learner profile to ensure the technology successfully harnesses intrinsic motivation rather than distracting from core learning goals (Soltanpour et al., 2021).

3. Methods

This research employs a pre-experimental, single-group pretest-posttest methodology to evaluate the effectiveness of Liveworksheets as an instructional tool for enhancing academic performance and motivation. This design involves an initial pretest evaluation, followed by a 10-week intervention phase utilizing Liveworksheets for vocabulary practice, and concluding with a posttest assessment.

A non-probability sampling method was employed to select participants from a single cohort. The study involved 35 sophomore students enrolled in a Sophomore English course within the Department of International Business at a private university in Taiwan. Over a 10-week intervention period, the course instructor integrated Liveworksheets assignments into the regular curriculum. These digital worksheets were distributed weekly in class for students to complete as part of their ongoing coursework.

3.1 Instruments

The effectiveness of Liveworksheets is assessed using both quantitative and qualitative instruments. Prior to and following the 10-week intervention, participants complete two quantitative assessments: a Vocabulary Quiz (measuring achievement) and a Motivation Questionnaire (measuring motivation). A subsequent survey incorporating open-ended inquiries is administered post-intervention to gather qualitative feedback.

The Vocabulary Quiz serves as the pretest and posttest instruments to assess students' academic achievement in English vocabulary learning. This instrument

is designed based on the specific learning content covered in the course over the 10-week intervention period. The comparison of pretest and posttest mean scores using a paired samples *t*-test is used to determine if the intervention leads to a statistically significant improvement in vocabulary acquisition.

The Motivation Questionnaire is administered as both a pretest and posttest to assess changes in students' learning motivation. This instrument is adapted from the widely recognized Motivated Strategies for Learning Questionnaire (MSLQ) developed by Pintrich et al. (1991) and has been modified to include 20 items. These items cover five distinct dimensions, including: (1) Intrinsic Goal Orientation (IGO) that captures students' drive to engage in learning for personal satisfaction, curiosity, or the desire to thoroughly understand and master the material; (2) Extrinsic Goal Orientation (EGO) that measures motivation stemming from external incentives, such as achieving high grades or gaining recognition; (3) Task Value (TV) that assesses the extent to which students perceive the course content as meaningful, interesting, or relevant to their personal goals; (4) Control Beliefs (CB) that reflect students' perception of their ability to manage and influence their own learning process; (5) Self-Efficacy for Learning and Performance (SLP) that evaluates students' confidence in their capacity to succeed and perform effectively in academic tasks.

Responses were collected using a 5-point Likert scale, ranging from strongly agree to strongly disagree. The reliability of the five motivational dimensions, as measured by Cronbach's α, was found to be 0.92 for Intrinsic Goal Orientation (IGO), 0.917 for Extrinsic Goal Orientation (EGO), 0.941 for Task Value (TV), 0.921 for Control Beliefs (CB), and 0.938 for Self-Efficacy for Learning and Performance (SLP). These values indicate strong internal consistency across the dimensions, with coefficients above 0.90, reflecting excellent reliability.

Following the posttest administration, participants were provided with four open-ended questions to gather qualitative feedback regarding their experience with the Liveworksheets assignments. This qualitative data complements the quantitative findings, providing insights into students' perceptions of engagement, helpful features, and skill development.

4. Data Analysis

4.1 Impact of Liveworksheets on Vocabulary Learning Motivation

A paired samples *t*-test was utilized to determine the statistically significant variations in academic performance (Vocabulary Quiz scores) and motivation (IGO, EGO, TV, CB, and SLP dimensions) of students before and after the implementation of Liveworksheets. The qualitative data gathered from the open-ended questions was analyzed to identify key themes and perceptions regarding the interactive nature and motivational impact of Liveworksheets.

The results presented in Table 1 demonstrate a statistically significant improvement in students' overall learning motivation following the 10-week intervention using Liveworksheets. The overall pretest mean of 3.96 rises to a posttest mean of 4.17, with a *p*-value of .022. A closer examination of the five motivational dimensions reveals a more nuanced pattern, particularly showing highly significant gains in Extrinsic Goal Orientation (EGO) and Control Beliefs (CB), while other dimensions trended positively but without reaching statistical significance.

Table 1. *Reliability Test and Paired Samples t-Test of Learning Motivation (N=35)*

Dimension	No. of items	M (SD)		df	t	p
		Pretest	Posttest			
IGO	3	4.06(0.85)	4.16(0.81)	34	-1.009	0.32
EGO	3	3.94(0.79)	4.22(0.82)	34	-2.738	0.01
TV	5	4.02(0.77)	4.18(0.79)	34	-1.625	0.113
CB	3	3.93(0.78)	4.27(0.74)	34	-2.836	0.008
SLP	6	3.86(0.84)	4.04(0.77)	34	-1.844	0.074
Learning Motivation	20	3.96(0.73)	4.17(0.74)	34	-2.392	0.022

The most pronounced gains are observed in Extrinsic Goal Orientation (EGO), which has a statistically significant improvement (p=.01). This increase is likely due to the interactive and immediate feedback features of Liveworksheets. The platform's ability to provide students with instantaneous scores and automatic grading acts as a clear, consistent, and strong external incentive (Felitasari & Rusmini, 2022; Le & Prabjandee, 2023). This mechanism directly reinforces behavior motivated by external factors, such as achieving high marks, thereby boosting the EGO dimension.

Equally significant is the improvement in Control Beliefs (CB) (p=.008). This dimension reflects

students' sense of agency—their belief that they can manage and influence their own learning outcomes. Liveworksheets supports this by offering students prompt identification and correction of errors (Le & Prabjandee, 2023). By allowing learners to immediately see the consequence of their actions and correct them (Le & Prabjandee, 2023), the platform fosters a feeling of personal responsibility and control over the learning process, shifting the focus from passive reception to active, self-regulated learning (Le & Prabjandee, 2023). This concept of gaining an enhanced sense of agency and empowerment regarding learning outcomes aligns with statistically significant findings related to Control Beliefs in studies utilizing web-based formative assessment tools.

One possible reason for the lack of statistically significant improvement in Intrinsic Goal Orientation (IGO) and Task Value (TV) relates to the student perception of digital tools. If learners view the online platform primarily as a source of fun or games—an observation noted in research regarding learners' perception of cellphones and digital tools—rather than a serious educational instrument, the perceived relevance or meaningfulness (Task Value) and the motivation for mastery (IGO) may not achieve a significant increase (Soltanpour et al., 2021). Additionally, while Liveworksheets supports individual practice, one identified drawback is its lack of collaborative features necessary for complex group projects or co-authoring (Le & Prabjandee, 2023). Since profound shifts in intrinsic goal orientation and task value are often linked to meaningful social interaction and teamwork, the limitations in collaborative design may constrain the growth of these dimensions (Le & Prabjandee, 2023).

The dimension of Self-Efficacy for Learning and Performance (SLP) reflects a student's confidence in their ability to succeed and is typically improved through successful, focused effort. The lack of statistical significance in SLP may be tied to the unsupervised nature of some online worksheet tasks. For online assignments completed outside of direct teacher supervision, especially by less independent learners, there is a risk that students may not follow all steps or exert the necessary concentrated effort required to build genuine confidence (Soltanpour et al., 2021). Furthermore, research using interactive game-based activities, similar in approach to many Liveworksheets task types, suggests that increasing student confidence (SLP) through such interventions can be difficult to achieve significantly compared to changes in other motivational domains (Yang, Lee, & Chiu, 2021).

4.2 Assessing the Efficacy of Liveworksheets in Vocabulary Learning Achievement

The results of the Paired Samples *t*-Test for academic achievement, presented in Table 2, clearly demonstrate the highly significant positive impact of the 10-week intervention utilizing Liveworksheets. The mean score on the Vocabulary Quiz increased substantially from a pretest mean of 52.86 (*SD*=19.64) to a posttest mean of 80.86 (*SD*=17.88). With a *p*-value of less than 0.001, this dramatic improvement is statistically robust, confirming that the intervention successfully boosted students' English vocabulary acquisition.

This significant gain is rooted in the pedagogical efficiency of the digital platform, which directly supports the principles highlighted in the literature review regarding effective instructional materials and assessment. Worksheets, as a type of instructional material, are widely recognized for their role in helping learners acquire necessary knowledge, skills, and values (Kaymakcı, 2006). The advantage of the Liveworksheets platform lies in its capacity for immediate formative assessment. This rapid feedback loop allows students to identify and self-correct errors instantly, which is critical for moving vocabulary knowledge into long-term memory. The literature confirms the importance of this immediate, focused feedback, citing studies that demonstrate the positive influence of formative assessment on academic achievement (Ozan & Kincal, 2018; Sheard & Chambers, 2014) and noting that the timeliness of this feedback is key to guiding the learning process (Nolen, 2011).

Furthermore, the strong positive finding helps to contextualize the varied results found in the existing research. The literature review acknowledges that while paper worksheets are effective, there are differing results when transitioning to online formats, with one study showing online worksheets were less effective for young EFL learners (Soltanpour et al., 2021). The significant increase in achievement validates the use of interactive, web-based tools as a successful strategy for enhancing academic outcomes in specific higher education contexts, fulfilling their potential as a powerful catalyst for skill acquisition.

Table 2. *Paired Samples t-Test of Academic Achievement (N=35)*

Dimension	M (SD)		df	t	p
	Pretest	Posttest			
Academic Achievement	52.86(19.64)	80.86(17.88)	34	-7.09	.000

4.3 Analysis of Posttest Survey Responses

The qualitative aspect of the study was investigated using a four-question posttest motivational survey specifically designed to gather learners' direct experiences with Liveworksheets and explore how the platform influenced their interest, effort, perceived effectiveness, and confidence in learning English vocabulary.

The posttest survey, specifically designed to capture the learners' direct experiences with Liveworksheets, revealed a high consensus among the 35 sophomores regarding the platform's positive influence. When asked how Liveworksheets affected their interest and effort, the data from Table 3 overwhelmingly indicated a strong motivational shift. A combined 85% of students reported either a significant (55%) or moderate (30%) increase in interest and effort, with 30 out of 35 students confirming the self-driven engagement that underpins the statistically significant increase in the Overall Learning Motivation mean score found in Table 1.

This motivational success is directly traceable to the platform's features, as detailed in the question 2 regarding what helped them learn more effectively. The two dominant response categories directly align with the quantitative findings: Instant Feedback and Automatic Scoring received 14 responses (40%), which validates the strong increase in Extrinsic Goal Orientation (EGO), as students appreciated the immediate reward of a score. Furthermore, the combined Self-Correction and Retrying Capability (20%) and Interactive and Diverse Exercise Formats (35%) explain the significant gain in Control Beliefs (CB), as students felt the platform granted them greater control over identifying and rectifying their errors, thereby fostering a stronger sense of self-efficacy in the learning process.

The practical success of the platform is confirmed by the minimal barriers reported. When asked what made learning difficult or less effective, a strong majority of 28 students (80%) reported "No Difficulties". The few issues cited were minor technical constraints, indicating high platform usability and ensuring that the positive motivational features were not impeded.

Finally, the qualitative findings powerfully connect the intervention to applied competence. When students reported on how Liveworksheets influenced their confidence in using English vocabulary for academic tasks, a combined 90% of respondents affirmed a high level of self-assurance. Specifically, 60% (21 students) indicated a significantly increased confidence in applying vocabulary and comprehension, while 30% (11 students) reported a moderately increased confidence/better vocabulary recall. This strong, self-reported gain serves as a vital qualitative reflection of the highly statistically significant academic achievement gains demonstrated in Table 2. The data suggests that the successful mastery achieved within the platform, driven by immediate correction and reinforcement, translated effectively into a perceived ability to retrieve vocabulary and apply it accurately in broader academic contexts involving reading and comprehension.

Table 3. *Responses to Posttest Survey (N=35)*

S.No	Question	Responses	N	%
1	How did using Liveworksheets affect your interest and effort in learning English vocabulary?	Significantly Increased Interest and Effort	19	55%
		Moderately Increased Interest and Effort	11	30%
		No Significant Change	3	10%
		Slightly Decreased Interest or Effort	2	5%
		Total	35	100%
2	Which Liveworksheets features helped you learn English vocabulary more effectively?	Instant Feedback and Automatic Scoring	14	40%
		Interactive and Diverse Exercise Formats	12	35%
		Self-Correction and Retrying Capability	7	20%
		Clear Instructions and Visual Design	2	5%
		Total	35	100%
3	Which Liveworksheets features made learning English vocabulary difficult or less effective?	No Difficulties Reported	28	80%
		Minor Technical or Connectivity Issues	4	10%
		Specific Exercise Types Were Confusing	2	5%
		Interface Felt Distracting or Cluttered	1	5%
		Total	35	100%

4	How did Liveworksheets influence your confidence in using English vocabulary for academic tasks?	Significantly Increased Confidence in Applying Vocabulary and Comprehension	21	60%
		Moderately Increased Confidence/Better Vocabulary Recall	11	30%
		No Significant Change	2	7%
		Slightly Decreased Confidence	1	3%
		Total	35	100%

5. Discussions

This study provides compelling evidence that the strategic integration of Liveworksheets serves as a powerful catalyst for enhancing both psychological engagement and measurable learning gains.

The analysis confirmed a highly significant overall improvement in learning motivation among the students. This motivational success is directly attributable to the platform's capacity to cater to specific psychological needs. The sharp increase in Extrinsic Goal Orientation (EGO) was driven by the immediate scoring and feedback mechanisms, which provided students with the instantaneous, positive reinforcement necessary to maintain effort, an observation supported by the literature on timely formative assessment (Nolen, 2011). Concurrently, the significant rise in Control Beliefs (CB) resulted from the platform's allowance for self-correction and retries, granting students agency and fostering a strong sense of ownership over the learning process. This structural feature validates the instructional approach that interactive and differentiated tasks effectively support diverse learner motivations (Tomlinson, 2017).

Crucially, this enhanced motivation translated into highly significant academic achievement gains in English vocabulary. The substantial improvement in posttest performance confirms the platform's efficacy in supporting skill acquisition, aligning with the recognized benefits of worksheets for achieving necessary knowledge and skills (Kaymakcı, 2006). This tangible success was reinforced by the qualitative data, as a combined 90% of students reported an increased sense of confidence in applying vocabulary to academic tasks. This high level of self-reported competence strongly suggests that the mastery achieved within the self-correcting environment of Liveworksheets is perceived by students as directly transferable to broader academic contexts, such as reading and comprehension. Furthermore, with the vast majority of students reporting no major difficulties, the high usability of the platform ensured that technical barriers did not impede the motivational or pedagogical benefits. The research, therefore, validates the use of web-based interactive tools as a high-impact strategy that simultaneously addresses both the motivational and academic challenges of vocabulary instruction in the tertiary environment.

6. Conclusion

This study successfully demonstrated the significant positive impact of integrating Liveworksheets into English vocabulary instruction for sophomores, affirming its role as a powerful catalyst for both motivation and academic achievement. The findings consistently showed that the platform's features addressed core motivational and pedagogical needs, leading to measurable success.

Quantitatively, the intervention resulted in a highly significant improvement in overall learning motivation and, critically, a corresponding highly significant boost in English vocabulary academic achievement. This success was driven by the platform's ability to enhance Extrinsic Goal Orientation (via instant scoring) and Control Beliefs (via self-correction), effectively engaging students by offering immediate rewards and a strong sense of mastery over their learning process. Qualitatively, students' reports consistently confirmed that the tool's high usability and effective immediate feedback translated directly into increased effort and a high level of confidence in applying the new vocabulary to academic tasks.

The research validates Liveworksheets as an effective, data-driven tool that transforms passive vocabulary instruction into an engaging, self-regulated learning experience. The findings provide strong support for educators seeking to leverage interactive technology to simultaneously solve challenges related to student engagement and academic mastery in language acquisition within the tertiary environment.

While this study successfully established the positive impact of Liveworksheets on sophomores' motivation and academic achievement, several limitations warrant consideration when interpreting the results. Firstly, the study employed a quasi-experimental, single-group pretest-posttest design without a control group. Future research could overcome this issue by incorporating a randomized control trial design,

comparing the Liveworksheets intervention against a traditional, paper-based worksheet approach or a purely digital, but non-interactive, reading approach. Secondly, the study's duration of ten weeks provides strong short-term data but does not account for the potential decay of the motivational or academic effects over time. Future studies could utilize a longitudinal design tracking students over a full semester or academic year to determine the sustainability of the gains in motivation and the long-term retention of vocabulary knowledge.

7. References

1. Ahmadi, M. R. (2018). The use of technology in English language learning: A literature review. *International Journal of Research in English Education, 3*(2), 117–125. https://doi.org/10.29252/IJREE.3.2.115
2. Alhusban, A. M. (2016). The impact of modern technological tools on students' writing skills in English as a second language. *US-China Education Review, 6*(7),438–443.https://doi.org/10.17265/2161-623X/2016.07.006davidpublisher
3. Arifah, A. (2014). *Study on the use of technology in ELT classroom: Teachers' perspective* [Unpublished master's thesis]. BRAC University.
4. Bhandari, R. (2022). Perspectives on using web-based formative assessment in the remote teaching environment. *International Journal of Innovations in TESOL and Applied Linguistics, 7*(4). https://doi.org/10.5281/zenodo.14028222
5. Carr, N. G. (2011). *The shallows: What the internet is doing to our brains*. W. W. Norton & Company.
6. Harris, J., Al-Bataineh, A., & Al-Bataineh, M. (2016). One to one technology and its effect on student academic achievement and motivation. *Contemporary Educational Technology, 7*(4), 368–381. https://doi.org/10.30935/cedtech/16207
7. Felitasari, A., & Rusmini. (2022). Development of e-worksheet assisted by Liveworksheets to improve science process skills and collaboration on chemical equilibrium materials. *Scientiae Educatia: Jurnal Pendidikan Sains, 11*(1), 10–23. https://doi.org/10.24235/sc.educatia.v11i1.10235
8. Francies, J. (2017). *The effect of technology on student motivation and engagement in classroom-based learning* [Unpublished doctoral dissertation]. University of New England.
9. Hazaveh, P. K., & Wanless, L. (2021). Impact of online worksheets versus in-class printed worksheets on students' learning outcomes and content mastery [Paper presentation]. In *2021 ASEE Virtual Annual Conference Content Access.* American Society for Engineering Education. https://doi.org/10.18260/1-2--37364
10. Kaymakcı, S. (2006). *History teachers' views about worksheets* [Unpublished master's thesis]. Karadeniz Technical University, Trabzon, Turkey.
11. Kilickaya, F. (2017). Improving formative assessment in language classrooms using GradeCam Go!. *Teaching English with Technology, 17*(4), 78–92. https://eric.ed.gov/?id=EJ1159096
12. Le, V. H. H., & Prabjandee, D. (2023). A review of the website Liveworksheets.com. *Computer Assisted Language Learning Electronic Journal (CALL-EJ), 24*(1), 269–279. https://doi.org/10.54855/callej.2324310
13. Nolen, S. B. (2011). The role of educational systems in the link between formative assessment and motivation. *Theory Into Practice, 50*(4), 319–326. https://doi.org/10.1080/00405841.2011.607399
14. Ozan, C., & Kincal, R. (2018). The effects of formative assessment on academic achievement, attitudes toward the lesson, and self-regulation skills. *Educational Sciences: Theory and Practice, 18*(1), 85–118.
15. Pintrich, P. R., Smith, D. A. F., Garcia, T., & McKeachie, W. J. (1991). *A manual for the use of the Motivated Strategies for Learning Questionnaire (MSLQ)*. University of Michigan.
16. Pratama, M. A. (2025). *Developing English subject differentiated instruction-based e-worksheet for 10th grade students of MAN 3 Palembang* [Master's thesis, Sriwijaya University].
17. Riley, G., Beard, L. A., & Strain, J. (2004). Assistive technology at use in the teacher education programs at Jacksonville State University. *TechTrends, 48*(6), 47–49.
18. Ryabchikova, V. G., Rubleva, O. S., Sergeeva, N. A., & Yakovleva, N. A. (2020). Using interactive worksheets when teaching foreign languages by the "Flipped class" technology. *Perspectives of Science and Education, 45*(3), 195-206. https://doi.org/10.32744/pse.2020.3.15
19. Saka, A., & Akdeniz, A. R. (2001). Biyoloji öğretmenlerine çalışma yaprağı geliştirme ve kullanma becerileri kazandırmak için bir yaklaşım [Paper presentation]. *Yeni Bin Yılın Başında Türkiye'de Fen Bilimleri Sempozyumu*, Maltepe Üniversitesi, İstanbul, 176–182.
20. Schmitt, N. (2000). *Vocabulary in language teaching*. Cambridge University Press.
21. Sheard, M. K., & Chambers, B. (2014). A case of technology-enhanced formative assessment and

achievement in primary grammar: How is quality assurance of formative assessment assured? *Studies in Educational Evaluation, 43*, 14–23. https://doi.org/10.1016/j.stueduc.2014.06.001

22. Soltanpour, N., Ganji, M., & Mohammadian, A. (2021). The effect of paper versus online worksheets on Iranian young EFL learners' vocabulary learning. *International Journal of Foreign Language Teaching and Research, 9*(39), 27–43.
23. Stakkestad, S. V., & Stordal, G. F. (2017). The effect of technology on students' academic performance [Unpublished master's thesis]. Norwegian School of Economics.
24. Strain-Moritz, T. (2016). *Perceptions of technology use and its effects on student writing* [Unpublished master's thesis]. St. Cloud State University.
25. Tomlinson, C. A. (2017). *Differentiate instruction: In academically diverse classrooms* (3rd ed., pp. 12–18). ASCD.
26. Ur, P. (2005). *A course in language teaching: Practice and theory*. Cambridge University Press.
27. Vogt, K., Tsagari, D., Csépes, I., Green, A., & Sifakis, N. (2020). Linking learners' perspectives on language assessment practices to teachers' assessment literacy enhancement (TALE): Insights from four European countries. *Language Assessment Quarterly, 17*(4), 410–433. https://doi.org/10.1080/15434303.2020.1828885