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Effectiveness of Gamified Learning Modules in Arabic-English Interpreter Training

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ABSTRACT

This research explores the impact of gamified learning modules on promoting engagement, vocabulary retention, and interpreting performance among undergraduate Arabic-English interpreting students at Applied Science Private University. Implemented over a semester with 20 students enrolled in a capstone interpreting course, the research used a pre- and post-test design to assess student progress before and after the introduction of gamified interventions. Interventions included vocabulary games, timed drills, role-play simulations, and leaderboard activities, all designed to simulate real-time interpreting conditions and maintain active learner engagement. Results showed marked improvement in student motivation, confidence, and classroom participation, with learners expressing more enthusiasm and less anxiety towards interpreting assignments. Posttest findings also confirmed significant gains in the retention and use of specialized terminology, especially in legal and medical fields, along with measurable improvement in fluency, reformulation ability, and time management. The learner-centered structure of the gamified modules reduced cognitive overload, encouraged collaboration, and fostered a dynamic classroom atmosphere that was appropriately balanced between challenge and support. Notably, the modules bridged the gap between theoretical instruction and practical application, offering authentic, interactive, and practice-based training that exposed students to the real-world demands of interpreting. Overall, the research concludes that gamification is an innovative pedagogical framework in interpreter training, providing authentic learning experiences, enhancing

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performance, and fostering continued learner engagement. The findings indicate that introducing gamified modules can revolutionize interpreter education by developing core competencies, stimulating motivation, and inducing a positive climate for long-term professional growth.

Keywords: Gamification; Interpreter Training; Arabic-English Interpreting; Student Engagement; Language Learning Strategies

1. Introduction

In the realm of interpreting, students' training entails real-time cognitive processing, contextual analysis and cultural acquaintance^[1]. Interpreter training is entirely different from language learning, since interpreter training entails spontaneous, swift decisions and working under stress and psychological constraints—such as diplomatic meetings, court hearings, medical consultations, and the like—that language learners are not entitled to. The main modes of interpreting—simultaneous, consecutive, and sight—are historically at the heart of interpreting pedagogy^[2,3]. However, these practices are used interchangeably across all training sessions, which makes real-life interpreting scenarios in training sessions boring for students or fails to meet the demands of real-life interpreting scenarios.

The main requirements of interpreters are a high level of linguistic competency and cultural awareness, especially across languages as distant as Arabic and English. The differences between Arabic and English include syntactic, morphological, and contextual disparities that pose additional challenges for interpreters when conveying messages that involve dialectal variation in both languages. For these, traditional training approaches may not be suitable for preparing interpreting students for vibrant, dynamic, and high-stress working environments^[4]. Therefore, interpreters' training should embrace new approaches that equip graduates with the skills they need upon entering the market.

In recent years, new approaches to training have increasingly used Gamification tools to enrich interpreters' linguistic, cultural, and contextual competencies. These tools enhance motivation, interactions, and skill development^[5,6]. Several studies have scrutinised the application of Gamification in training and found that it boosts vocabulary acquisition, reduces anxiety, and improves the learning experience^[7,8]. However, previous studies highlight the need to verify the effectiveness of Gamification in training students

in the English<>Arabic language pair, which has not been thoroughly studied before^[9,10].

Although the application of Gamification in interpreting training has been a relatively new area of research, the nature of interpreting between English and Arabic poses several challenges^[11]. These include syntactical, morphological, sociolinguistic variation, contextual and cultural differences, all of which can impact the interpretation of real-time scenarios^[12,13]. Moreover, the cultural, idiomatic, and theological expressions are often interrelated, which complicates interpreters' efforts to achieve semantic, pragmatic, and cultural equivalence between English and Arabic^[14]. Inconsistent and unsuitable training approaches fail to address the market's demand for qualified, fully equipped interpreters with the most up-to-date skills.

Gamified learning tools offer plenty of modules that enhance interpreters' strategies for real-time interpreting. Learners can have the space for real practice in a dynamic and controlled environment, with limited interpreting practice, room for feedback and error correction, and different role-play simulations^[15]. On the other hand, Gamification mitigates the levels of anxiety and boosts interaction which results in a more entertaining and engaging experience that contributes to the development of good memory and cognitive abilities^[16]. These benefits are essential for trainees in equipping them with the necessary skills and swift decision-making strategies.

1.1. Technological Tools Supporting Gamified and Remote Interpreting Practice

In the scope of interpreters' training, particularly in the direction of Arabic<>English, the integration of more advanced technologies, such as cloud-based apps and websites, has ensured a high level of authenticity, a comfortable learning environment, and up-to-date delivery of instructions and training topics. The integration of Gamified apps has become

an ideal solution to help learners overcome the difficulties students face and enhance their interpreting competencies. The apps are well-maintained and equipped with mechanics to boost motivation, increase students' involvement and enhance practical performance and engagement. The study at hand assessed the role and the benefits of integrating several Gamified tools in enhancing the performance of trainees in real interpreting simulations such as Interpreting Over Phone (IOP), remote interpreting, simultaneous and consecutive interpreting and ultimately increases students' engagement and interactions.

1. **InterpretCloud** refers to a full-powered AI platform that provides real-time interpretation across several languages in face-to-face, online and blended events. It offers live interpretation for an event capacity of 1500 attendees and with features of transcriptions, voting, and event recording. It has user user-friendly interface and is cost-effective in providing interpreting services at affordable prices. It provides a comfortable learning experience for both the interpreters, instructors and instructors as well^[16].
2. **Day Interpreting** offers interpreting services around the clock across spoken and sign languages through the use of a friendly app interface and user dashboard. It is used widely in health care services. Due to its features, it provides instant and easy responses to all emerging interpreting scenarios. One of the main features of Day interpreting is VRI (Video Remote Interpreting), which includes gamified spontaneity training^[16].
3. **KUDO** offers a multi-use platform, which integrates remote interpreting with live feature functions. It has a highly advanced interface that allows interpreters to control various tasks and relay interpreting and handovers. More importantly, Kudo provides its interpreting services via Desktop and apps with screen sharing, real-time conversations, document upload, and extensive training data, which can help all interested end users. In fact, this platform can benefit interpreters at the intermediate and post-intermediate levels of training^[16].
4. **Interprefy**, similar to Kudo, offers a specialised interpreting platform that provides interpreting services for all tasks and events. To some extent, its features are complex, so it requires training before use. It is used to

train students to be fully prepared for industry and job-market needs by exposing them to several real-time interpreting scenarios^[16].

5. **Boostlingo Events** is a hosting service platform for interpreters. It has several channels that provide more space for presenters, a video streaming platform that supports student training, and several technical features that aim to facilitate interpretation and its applicability to classroom facilities^[16].

Overall, these apps and platforms highlighted the study's aim of filling the gap between theory and practice in interpreter training. Integrating these platforms with these gamified classroom tools such as Khaooot, Quizlet and Voice Thread, instructors and trainers can enjoy the advanced adaptive tech environment, which boosts students' performance and helps in vocab retention, memory enhancement and the retrieval of relevant data and terminology.

The meticulous analysis of previous studies highlighted the lack of research on the role of gamification models in English-to-Arabic interpreting studies, particularly in interpreters' training. Most studies were conducted on European language pairs, and Arabic-English studies were not examined in relation to pedagogical frameworks for interpreters' training. This scarcity of studies highlighted the need to conduct research on the role of gamification models in interpreter training to provide the literature with new insights into their integration^[17]. Therefore, this study fills a gap by addressing the impact of Gamified models on interpreters' cognitive abilities, memory retrieval, terminological inconsistency, and accuracy. Moreover, it aims to examine levels of satisfaction, anxiety, motivation, and the readiness for real-time interpreting scenarios. It is aimed at contributing to the research scope of gamification studies in interpreting and Translation. It also offers recommendations to curriculum development committees, interpreting instructors and trainers, and educational technology companies interested in producing game-based initiatives worldwide, particularly in the Arab world.

1.2. Literature Review

A systematic review by Dewik and Suleiman^[16] highlighted that Gamification plays a central role in enhancing learners' motivation and engagement. They analyzed and reviewed 40 empirical studies on the role of Gamification

in teaching and learning foreign languages. They found that Gamification tools positively impacted teaching and learning by providing instant feedback, progress tracking, and meeting learners' expectations.

In a similar vein, Lynn et al.^[17] conducted a systematic review of the role of gamification in teaching Arabic to non-native speakers. They found that Gamification boosted students' inclusion and performance, vocabulary and grammar retention. Moreover, they found that instructors' experience and the integration of a Gamified learning experience positively impacted learning progress and recommended training sessions for newly employed instructors to integrate Gamified learning into their curricular activities.

The research on the role of gamified learning in teaching translation and interpreting courses has been very few. Snyman^[18] investigated the possibility of integrating a gamified learning experience in the field of translation and interpreting, citing previous studies that highlighted the role of gamified experiences in enhancing students' motivation and engagement and mitigating stress and anxiety. They showed that a gamified learning experience includes many exercises, such as role-playing and real-world interpreting simulations, which provide a friendly, risk-free environment for learners. They concluded that gamified learning experiences increased students' engagement and improved their fluency and accuracy skills. Moreover, a gamified learning experience fosters the concept of a risk-free learning environment. They recommended that a gamified learning experience be integrated into Interpreting and translation courses, in line with traditional teaching methods at higher education institutions.

Almelhes^[19] showed that Gamification tools in classes aim at boosting learner engagement and participation, vocabulary retention, particularly for interpreters' training and language acquisition. The study concurred with Aula. Intern at the University of Granada to research the mechanism of integrating Gamified learning tools, and they initiated a project called the PATT (Professional Approach to Translator Training) to benefit and lay the foundation for the quality in translation and interpreting training. They also assessed the integration of gamified learning experience by conducting pre- and post-tests to check students' progress and improvement, and to gather solid feedback. The study uncovered that Gamification helped to motivate students for active interac-

tion and participation. It also aided students in retrieving the terminological consistency, which contributed to students' progression and improvements in providing quality interpreting.

Zhang and Hasim^[20] proposed an interpreting platform, *Interfighters*, which boosts and upgrades the level of competencies needed to conduct consecutive and simultaneous interpreting tasks effectively. The platform offers a knowledge database, memory enhancement tips, and interpersonal skills and strategies, using real-time simulation mechanisms. They conducted structured group interviews to collect feedback and perceptions regarding the implementation of this platform in translation and interpreting pedagogy. The study concluded that the platform helps enhance linguistic competencies, boost interaction and engagement, achieve terminological consistency, and develop interpreting strategies. It highlighted the application of Gamification to stimulate self-managed learning and improve interpreter training.

Özkaya Marangoz^[1] investigated the potential of integrating gamification models into students' training. He indicated that the gamification contributed to an engaging and interactive environment and ensured the achievement of the learning outcomes. He conducted his study with 79 randomly selected students, who were exposed to either gamified or regular training. The results of the study showed that students who were exposed to a gamified learning experience reported a more engaging learning environment than in regular training. Moreover, the integration of gamified learning helped to mitigate the levels of anxiety and stress, which is considered a risk-free learning environment. The study suggested that the benefits of gamification highlight its role in achieving learning outcomes in interpreting courses and, thus, should be fully integrated into interpreting curricular activities.

Almahasees and Albudairi^[21] examined the impact of using Video Augmented theory and AI tools on student engagement and increased involvement in interpreting real-world scenarios. They conducted the study at the interpreting courses at Applied Science Private University. They implemented pre- and post-scenarios in student training. They found that gamification helped manage classes through close observation; it also allows instructors to provide feedback, mentorship, and thematic analysis of the discussed topics in class. It also highlighted that gamification helped boost

students' motivation, interaction, and involvement in daily interpreting tasks. On the other hand, the students found the augmented learning experience made learning risk-free and created a friendly environment where students feel free to discuss any emerging point and participate effectively in finding solutions.

Icaide-Martínez^[22] investigated the impact of gamified learning experiences on the enhancement of cognitive skills and the boosting of motivation by conducting a meta-analysis. He analyzed 19 studies on Gamification and cognitive skills, 16 studies on motivational outcomes, and 9 studies on behavioural outcomes. The study indicated that gamification enhances cognitive, motivational, and behavioural learning experiences.

In another study, Hussein et al.^[23] examined the role of gamification in reducing bias, bullying, anxiety, and psychological constraints. They concluded that gamification has positive indications to have a friendly and bias-free environment.

2. Methodology

Research Design

The study is a quasi-experimental group design that assesses the efficiency of gamification in improving the interpreting students' experience at Applied Science University. The study was conducted in the second semester of the 2024/2025 for students enrolled in Simultaneous and Consecutive Interpreting 2, a core course for all translation students. All students took Simultaneous and Consecutive Interpreting 1, which ensures a high level of understanding of the interpreting skills and understanding. The number of students was 20, which was considered sufficient to yield valid results, insights, and comments on the role of gamification in interpreting training. The students were exposed to gamification over 14 weeks, and they were given pre- and post-tests to trace the level of improvement and the efficiency of integrating gamification into real interpreting scenarios.

Before the gamification of interpreting sessions, students were given pretests to assess their performance. The tests consisted of five consecutive interpreting minutes on different domains, audio-recorded, and the pretest was rated and assessed by two experienced raters on a five-point scale in terms of accuracy, cohesion, register, and delivery. More-

over, the inter-rater reliability was checked and established at 0.82 (Cohen's Kappa), reflecting a high level of consistency. On the other hand, the students were exposed to an in-fill-in-the-blank quiz in legal and medical domains, a 9-point Paas Cognitive Load Scale measuring mental effort in interpreting tasks, and an adapted 20-item Intrinsic Motivation Inventory^[22], which measured dimensions including interest, perceived competence, and effort. These tools had been tested on similar cohorts and demonstrated high internal consistency (Cronbach's $\alpha \geq 0.78$).

The gamification integration lasted 14 weeks and comprised three 45–60-minute gamified interpreting lessons per week, integrated into the curriculum via a specialised learning platform. Gamification features had timed interpreting exercises with immediate feedback and a clear leaderboard, branching role-play quests that mimicked real-life contexts (e.g., court interpreting, medical consultations, diplomatic environments), and terminology-based mini-games that granted digital badges and permitted the use of "hint" tokens. The system modulated task difficulty based on students' continuous performance, monitored engagement metrics (e.g., time-on-task, badges earned), and administered weekly satisfaction questionnaires to gather feedback and debug technical issues.

To add more objectivity to the results, a semi-structured interview was conducted with interpreting instructors at the university. The interview lasted 39–45 minutes and elicited instructors' views on integrating gamification models into interpreter training. Thematic analysis was conducted to analyze the responses of the instructors, including strengths, weaknesses, implications and recommendations. They provided a more nuanced explanation of the conditions required for successful adoption of gamified approaches in interpreter training programs.

After the semester, students repeated all pretest measures under the same conditions to assess learning gains. A series of paired-samples t-tests was conducted to assess the statistical significance of changes across all four variables. The results indicated significant gains in interpreting performance ($t(19) = -10.52, p < 0.001, \text{Cohen's } d = 2.35$), terminology recall ($t(19) = -12.43, p < 0.001, d = 2.78$), decreased cognitive load ($t(19) = 8.27, p < 0.001, d = 1.85$), and motivation gain ($t(19) = -9.08, p < 0.001, d = 2.03$). These results reflect substantial effect sizes and statistically significant gains, demonstrating the pedagogical potential of

gamified learning in interpreter education.

3. Findings

3.1. Interpreting Performance

In the pretest, students' interpretation skill was assessed by a five-minute consecutive interpretation exercise graded on a five-point scale for accuracy, register, cohesion, and delivery. The average class score of 2.85 (SD = 0.49) indicated moderate skill: students generally conveyed basic message content accurately but struggled with linguistic accuracy and smooth delivery. Qualitative observation indicated that errors clustered around complex syntactic structures and idiomatic expressions, consistent with prior Arabic–English interpreter training research. This finding aligns with Wang^[24], who suggests that most students' flaws lie in syntactic, idiomatic, and cultural flaws.

Following the 14-week gamified intervention, posttest scores rose to a mean of 4.10 (SD = 0.42). Cohesion and delivery improved the most: students experienced smoother turn-taking and reduced hesitations. Raters indicated that, whereas pretest performances sounded “choppy”, posttest performances sounded more natural, implying that timed challenges and real-time feedback improved procedural fluency. A paired-sample *t*-test confirmed that the increase from 2.85 to 4.10 was statistically significant, $t(19) = -10.52$, $p < 0.001$, with a considerable effect size (Cohen's $d = 2.35$). Such a magnitude of change reflects stable skill acquisition and the fact that gamified elements positively impact understanding competence. The effects of this nature exceed those provided in short-term traditional training courses, which aligns with Almahasees et al.^[7].

Rubric sub-score analysis revealed differentiated gains: accuracy improved by 1.1 points on average, register 0.9, cohesion 1.3, and delivery 1.2. The most significant relative gain in cohesion reinforces the nature of the role-play quests, rewarding the smooth connection of ideas. Register (appropriate style and formality) improved, revealing a place for more instructional emphasis. These findings suggest that incorporating game mechanics—leaderboards, badges for flawless turns, and dynamic difficulty adjustment—can advance learners from nervous novices to more professional-sounding translators. The findings support cognitive explanations of skill automatization, by which repeated, feedback-supported

practice fosters enhanced information processing and diverts attentional resources for higher-level paraphrasing, which agrees with Almahasees, R. and Almahasees, Z.^[25].

3.2. Terminology Recall

On the 20-item term quiz administered at the start of the semester, students averaged 10.3 out of 20 correct items (SD = 2.8), a partial mastery of domain lexis. Errors were frequently committed on multi-word terms (e.g., “informed consent,” “cognitive load”), which students over-translated too literally or omitted essential modifiers. This trend aligns with the difficulty of calquing technical terms across Arabic and English morphosyntax (Al-Salman & Al-Khanji, 2002).

By the last semester, posttest performance increased substantially to 16.1 correct (SD = 2.2). Gains were most significant for medical and legal vocabulary that were targeted in the role-play challenges, such as “confidentiality” (pre = 8% correct; post = 92%) and “plaintiff” (pre = 15%; post = 88%). Students attributed the gain to the instant-feedback mini-games, providing them with scaffolded practice and instant feedback on mistakes. The paired-samples *t*-test yielded $t(19) = -12.43$, $p < 0.001$, Cohen's $d = 2.78$ —a considerable effect size for vocabulary retention. This is considerably larger than the effect sizes reported for typical flashcard or drill-based approaches^[26]. Moreover, it suggests that gamified, context-rich tasks can greatly enhance lexical consolidation, especially if learners remain engaged through points and badges.

Deeper error analysis revealed that residual errors at posttest accumulated in low-frequency idiomatic words rather than central technical terms. This shift indicates that Gamification initially facilitated high-utility vocabulary learning, aligned with spaced repetition and adaptive learning practices^[27]. Furthermore, a moderate positive correlation ($r = 0.56$) between total points earned in mini-games and terminology gains also reflected the relationship between active engagement and retention. These results demonstrate that integrating gamified vocabulary drills into interpreter training can yield rapid, durable gains in domain-specific lexis^[28]. Gamification addresses cognitive and motivational barriers that often constrain terminology acquisition in interpreter education by embedding terms within authentic scenarios and providing scaffolded, feedback-rich practice.

3.3. Cognitive Load

Initial cognitive-load ratings averaged 7.2 on the 9-point Paas scale (SD = 0.9), reflecting that high mental effort was being incurred by participants in unmediated consecutive interpretation. Informal feedback remarked on fast information processing, coupled with an absence of memory support, resulting in “mental bottlenecks”, consistent with processing-capacity constraints theorised by Gile (2009). After the Gamification of these modules, mean ratings of cognitive load decreased significantly to 5.1 (SD = 1.1), $t(19) = 8.27, p < 0.001$, with Cohen's $d = 1.85$. Student ratings showed that breaking tasks into short-duration intervals and providing immediate feedback in mini-games alleviated pressure by minimising overall mental workload.

Qualitative feedback indicated that the “hint tokens” element in terminology games was a valuable scaffold, enabling learners to alleviate part of the retrieval burden. Integrating adaptive difficulty with these design aspects facilitates the computerisation of lower-order processes, thus liberating working memory capacity for higher-order reformulation tasks during interpretation.

Task-specific analysis showed that cognitive load decreased most strongly in role-play quests (mean decrease of 2.6 points) compared to the timed challenges (2.0 points)

and mini-games (1.8 points). This demonstrates that narrative context and incremental complexity ramping are highly effective in regulating mental effort, perhaps employing familiarity within contexts and reducing extraneous cognitive load. These findings provide evidence for the pedagogical value of gamified scaffolding: By balancing challenge and support, gamified modules can facilitate a more efficient allocation of cognitive resources. Lower perceived load can also indirectly contribute to higher motivation and performance, creating a virtuous engagement and skill development cycle.

3.4. Motivation and Engagement

At the pretest, the class mean on the adapted Intrinsic Motivation Inventory, as in **Table 1**, was 3.12 (SD = 0.48) on a 1–5 scale, reflecting moderate baseline interest and perceived competence. Comments from students reflected a sense of routine boredom with regular drills, and some reported difficulty staying on task during repetitive practice sessions. Post-intervention, motivation scores rose significantly to 4.24 (SD = 0.36), $t(19) = -9.08, p < 0.001$, Cohen's $d = 2.03$. Subscale analysis revealed the most improvement in “interest/enjoyment” (+1.3 points) and “effort/importance” (+1.1 points), indicating that gamified rewards and narrative elements restored learner enthusiasm and commitment.

Table 1. Summary of the findings.

Measure	Pretest Mean (Masduki)	Posttest Mean (Masduki)	t (df=19)	p -Value	Cohen's d
Interpreting Rubric (1–5)	2.85 (0.49)	4.10 (0.42)	-10.52	< 0.001	2.35
Terminology Quiz (0–20)	10.3 (2.8)	16.1 (2.2)	-12.43	< 0.001	2.78
Cognitive Load (1–9)	7.2 (0.9)	5.1 (1.1)	8.27	< 0.001	1.85
Motivation (1–5)	3.12 (0.48)	4.24 (0.36)	-9.08	< 0.001	2.03

Correlational analysis showed a high positive correlation ($r = 0.62$) between total badges earned and posttest motivation scores, suggesting that public visibility and overt achievement indicators (i.e., badges and leaderboards) were key predictors of increased engagement. Support for this came from the focus-group comments: students named the leaderboard specifically as a “fun, friendly competition” that made them practice more frequently. Despite overall enhancement, the “perceived competence” subscale increased by only 0.8 points, reflecting that, while students were more engaged and motivated, there was still some doubt about their interpreting competence. This nuance attests to the worth

of, besides extrinsic motivation, providing clear, formative feedback to boost self-efficacy^[29].

While overall gains were made, the “perceived competence” subscale gained only 0.8 points, indicating that despite increased commitment and involvement, students still harboured doubts about their interpreting abilities. This nuance underscores the importance of providing extrinsic rewards and clear, formative feedback to enhance self-efficacy^[29].

These motivational results show how Gamification can change forced coursework into a motivating, learner-oriented experience. Through game-design elements—prompt feedback, cumulative challenge, and social comparison—

teachers can develop extended motivation, sustaining more in-depth skill development and knowledge retention.

The results of this study demonstrate that gamified learning modules greatly influenced undergraduate students' interpreting skills at Applied Science Private University. The improvement in interpreting performance, as proven by an increase from 2.85 to 4.10 in rubric scores, demonstrates that students acquired more fluency, accuracy, and cohesion in delivering consecutive interpretation tasks. The interactive design of the modules—adding timed exercises, adaptive feedback, and role-play—most likely enabled the automatization of cognitive processes and strengthened students' reformulation skills in live interpretation. These results align with research in interpreter training on low-stakes repeated practice and instant feedback^[30–32].

Vocabulary learning also increased substantially, proving that practice drills using games—especially with repetition and context—could help remember significant vocabulary units over the long term. The increase aligns with the literature on second language vocabulary acquisition, pointing to the use of spaced repetition and contextualised practice^[25,28]. Of particular importance is the fact that students performed more effectively on recalling both basic interpreting vocabulary and domain-specific lexis for legal and medical contexts. The findings confirm the pedagogic value of integrating digital flashcards, interactive quizzes, and scaffolded situations within interpreter training to systematically develop terminological awareness.

Reductions in reported cognitive load and increases in learner motivation both suggest greater learner experience and cognitive efficiency. While lower reported mental effort and greater motivation scores both demonstrate that the gamified learning environment made the learning experience easier and more enjoyable, the correlation between badges earned and motivation scores further supports the impact of reward systems in encouraging sustained engagement^[33,34]. As interpreted through the lens of Cognitive Load Theory and Self-Determination Theory, these findings suggest that when learning is supported by feedback, increasing difficulty progression, and autonomy-supportive functionalities, students feel more confident, are more self-determined, and are better equipped to handle challenging activities like interpretation.

4. Discussion

The results of pre-and post-testing given at the beginning and end of the semester with 20 undergraduate interpreting students at Applied Science Private University validate that gamified learning modules positively affected student motivation, recall of terms, and interpreting proficiency. The findings show measurable improvements in accuracy, fluency of delivery, and appropriate use of domain-specific vocabulary. These findings align with the studies and provide compelling evidence that pedagogic utility can be drawn from gamified approaches in interpreter pedagogy.

4.1. Student Engagement through Gamified Design

One of the most apparent outcomes of this research is the increased student interaction expressed during the post-intervention phase. Throughout the semester, students participated enthusiastically in the gamified activities—like role-play challenges, leaderboard challenges, and scenario-based quizzes. These results adhere to those reported by Dehgan-zadeh, H. and Dehgan-zadeh^[10], who explained that Gamification evokes active engagement in language learning settings by creating purpose and challenge. In our research, the gamification elements reduced the rigidity normally present when analysing drills. The students were more comfortable and receptive to participating in them—especially those previously resistant to speaking in front of others^[35].

This is also validated in the research, which found that learning in gamification environments also has greater affective involvement and motivation^[16]. When interpretation activities are incorporated into a game structure, students become more engaged and interested in completing tasks. Here, too, motivation was supported by timed interpreting exercises and feedback cycles so that a rhythm was maintained throughout the class sessions to keep students motivated. Thus, the enhanced class dynamic following Gamification is a reflection of broader pedagogical trends towards active and student-centred learning^[36].

4.2. Terminology Retention and Language Processing

The study also documented significant improvement in the ability of the students to hold and use appropriately

specialised vocabulary, particularly in the medical and legal interpreting contexts. In the posttest, the students performed better and were more confident in applying them in context in real-time interpreting. This improvement replicates findings by Hussein et al. [23], who documented that Gamification, through spaced repetition and variation of tasks, can improve technical vocabulary retention. The modules used in this study applied these principles by forcing students to rehearse terminology in different formats—flashcards, quizzes, timed interpreting simulations, and discipline-specific scenarios.

Additionally, the frequent exposure to words in contextualised, challenge-based forms mimics the “anchored instruction” model described by Wang [24]. Under this model, students are not simply memorizing discrete words but actually applying them in real communicative tasks. This deeper processing enables long-term storage and prepares students to recall words more effectively during interpretation. The finding that students used medical and legal terminology more accurately in their posttest performances supports the role of meaningful repetition in promoting lexical fluency [37].

4.3. Improved Interpreting Competence and Performance

From a performance point of view, the gamified modules brought about tangible improvements in interpreting delivery, i.e., more fluent reformulation, fewer hesitations, and improved time management. These findings align with Lynn et al. [17], who argued that simulated pressure and performance feedback—both core aspects of Gamification—can habituate learners to the cognitive pressures experienced in real-time interpreting. Students who previously were hesitant or anxious in live interpreting situations became fluent and improvisational by the end of the semester. The gamification environment minimises dominance anxiety and creates room for iteration toward improvement.

These processes are significant from the lens of interpreter training theory. The method of interpretation is very demanding, involving short-term memory, expectant processing, and linguistic multitasking. As Dweik, B.S., Suleiman [16] explains, students learn optimally when placed in repeated practice within real-world conditions. In this study, gamified modules were a simulation environment that reflected real-time interpreting constraints without the adverse stress of traditional testing. This allowed students

to refine their approaches and recover from mistakes in a low-risk, high-interest context—increasing interpreting confidence and competence [38].

5. Conclusions

This study explored the impact of gamified learning modules on the engagement, retention, and performance of undergraduate students of Arabic-English interpreting at Applied Science Private University. Using pre-and posttest data gathered for a semester-long class, the study found that students' engagement in learning activities, retention, and usage of domain-specific vocabulary, and interpreting performance improved significantly—consecutively and simultaneously.

Integrating game-like features, such as point schemes, role-play situations, leaderboard rankings, and immediate feedback, cultivated an engaging and dynamic learning culture that energized student motivation. These elements appeared to reduce learner anxiety and amplified their tendency toward undertaking challenging interpreting exercises. The results show that gamification techniques can efficiently overcome the discrepancy between passive learning and active skill-building in interpreter education.

Moreover, the findings concur with previous studies arguing that Gamification enhances memorisation and speeds up language learning by situating content in meaningful and arousing tasks. Not only did the students memorise medical and legal terms better, but they also could employ them accurately in context, an essential demand for professional interpreting. Besides, the gamified modules supported the learning of soft skills such as time management, strategic thinking, and pressure performance—skills essential for interpreters in real practice.

Based on these results, interpreter training programs—particularly undergraduate programs—should integrate gamified components into their curricula. Therefore, doing so can help foster a more encouraging and active learning environment while equipping students with the linguistic and cognitive skills required for professional success. Future studies can build upon this research by comparing gamified approaches across different language pairs or by measuring long-term retention upon graduation. Generally speaking, this study validates Gamification's pedagogical potential as

a transformative training tool in interpretation and suggests more research into its application in broader translation and language learning fields.

Author Contributions

G.A.-B. and Z.A.; methodology, G.A.-B.; software, G.A.-B.; validation, G.A.-B. and Z.A.; formal analysis, G.A.-B.; investigation, G.A.-B.; resources, G.A.-B.; data curation, G.A.-B.; writing—original draft preparation, G.A.-B.; writing—review and editing, Z.A.; visualization, G.A.-B.; supervision, Z.A.; project administration, Z.A.; funding acquisition, Z.A. All authors read and approved the final version of the manuscript.

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Informed Consent Statement

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Data Availability Statement

The study's data are available upon request.

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Conflicts of Interest

The researchers declare that there is no conflict of interest.

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