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Exploring the Influence of MMORPG in English Language Performance: Relating Game Features and Incidental Vocabulary Learning

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ABSTRACT

The widespread of digital games presents valuable opportunities for incidental vocabulary learning (IVL), where players encounter and process language content during online gameplay. The recently published Massively Multiplayer Online Role-Playing Games (MMORPGs) further enhances the opportunity for IVL due to their rich narrative environments, interactive design, and exposure of players to authentic lexical input within meaningful contexts. In tandem with this development, this study seeks to explore how the game features of MMORPGs impact ESL learners' IVL during gameplay sessions, as well as their overall English language proficiency test performance. A total of 16 ESL game players who have experience playing online games were recruited for the study. The participants were required to play Lost Ark for 60 hours, and their interactions during the gameplay sessions were video recorded. The participants were interviewed, and the sessions were audio recorded. The findings from the interviews revealed that (1) the narrative nature of the game's storyline in the MMORPG promotes ESL learners' IVL, and (2) the in-game cutscenes motivate ESL learners to engage in IVL. These findings suggest that the game features in MMORPGs could

influence ESL learners' mastery of English language, whereby they act as a catalyst to enable ESL learners to experience IVL during gameplay.

KEYWORDS: Digital game-based learning, game features, incidental vocabulary learning (IVL), Massively Multiplayer Online Role-Playing Game (MMORPG)

INTRODUCTION

According to the recent statistics published by Clement (2025), the number of online game players has grown exponentially to over 1.5 billion across the Asia Pacific. This widespread engagement with digital games presents valuable opportunities for incidental vocabulary learning (IVL), as players naturally encounter and process language content during gameplay. The recently published Massively Multiplayer Online Role-Playing Games (MMORPGs), with their rich narrative environments and interactive design, create conducive conditions for IVL by exposing players to authentic lexical input within meaningful contexts. Research has demonstrated that the immersive nature of online games facilitates language acquisition as players engage with story-driven content and game mechanics that require comprehension of instructions, dialogues, and narrative elements (Bytheway, 2015; Rasti-Behbahani & Shahbazi, 2020). The dynamic virtual worlds of these games provide continuous exposure to vocabulary in context, allowing learners to encounter and reinforce lexical knowledge through repeated exposure and meaningful use. This phenomenon emphasises the importance of investigating how game environments can enhance English language proficiency, particularly in vocabulary development. For educators and researchers, understanding the processes of IVL in gaming contexts offers valuable insights when developing a digital game-based learning (DGBL) approach that capitalises on the immersive qualities of digital games.

However, despite growing recognition of online games' potential for language learning, there is still a significant gap in understanding how specific MMORPG game features facilitate incidental vocabulary learning (IVL). While existing research acknowledges that MMORPGs do provide rich environments for language exposure through their immersive gameplay and narrative structures (Bytheway, 2015; Yang & Quadir, 2018), the particular game mechanics that could stimulate the IVL processes among language learners remain insufficiently explored. Previous studies have established that games can support vocabulary acquisition (Bytheway, 2015; Calafato & Clausen, 2024) and reduce language learning anxiety (Yang & Quadir, 2018), yet they did not systematically identify which game features could be utilised to stimulate learners' IVL processes during gameplay. In addition, the current literature also lacks empirical investigations into how the key game features of MMORPGs could contribute to IVL and vocabulary acquisition, which are essential for language development (Kassim & Ng, 2014). While studies such as Bytheway's (2015) demonstrate players' ability to employ vocabulary learning strategies during gameplay, it was not stated which game feature has prompted language learners to incidentally learn vocabulary during gameplay sessions. This gap impedes educators' ability to plan or design DGBL approaches to promote vocabulary acquisition through IVL processes during gameplay.

Therefore, to address the prementioned gaps, this study aims to explore what are the game features of MMORPGs that impact ESL learners' incidental vocabulary learning (IVL) during gameplay sessions of MMORPGs, as well as how this can influence their English language performance (i.e. In the context of the present study, the ESL learners' English language proficiency test scores). In

line with this, the study centres on the following research questions:

- a) What are the game features of MMORPGs that impact ESL learners' incidental vocabulary learning (IVL) during gameplay sessions of MMORPGs?
- b) How does ESL learners' incidental vocabulary learning (IVL) during gameplay sessions of MMORPGs influence their English language performance?

REVIEW OF RELATED LITERATURE

Vygotsky's (1978) Zone of Proximal Development

The Zone of Proximal Development (ZPD) is a central concept in Vygotsky's (1978) Sociocultural Theory (SCT) that is fundamental in understanding cognitive and language development, particularly in ESL contexts. The ZPD represents the difference between what learners can do independently and what they can achieve with guidance from More Knowledgeable Others (MKO), highlighting the critical role of collaborative learning. Scaffolding, an instructional strategy rooted in this theory, provides learners with temporary support through techniques such as guided practice and targeted feedback from teachers and peers. As learners develop competence, this support is systematically withdrawn to promote independent learning. In the context of ESL, scaffolding enables learners to progressively develop language skills by working within their ZPD, where tasks are challenging yet achievable with appropriate support from their peers. Vygotsky's (1978) theory also emphasizes how cultural and social interactions shape cognitive and linguistic development. In the ESL classroom, this translates to instructional activities that incorporate authentic, culturally situated language use, such as collaborative problem-solving or scenario-based role plays. Past studies such as Alghamdy (2024) demonstrate how teachers can optimise learning by employing strategies such as structured questioning and timely error correction, which align with the principles of ZPD. Within the MMORPG environment, incidental vocabulary learning occurs naturally as players engage in collaborative quests and real-time communication, operating within their ZPD, where peer interactions and in-game scaffolding facilitate language development. The immersive context of MMORPGs provides meaningful social interaction and repetitive exposure to target vocabulary, allowing learners to progressively develop their language skills through gameplay mechanics and collaborative discussions, which reflects Vygotsky's principles of ZPD.

Incidental Vocabulary Learning

Incidental vocabulary learning (IVL) occurs naturally when learners engage in meaningful activities without consciously focusing on vocabulary acquisition (Sinyashina, 2020). This process depends significantly on how much attention learners pay to new words they encounter during authentic language use (Laufer & Hulstijn, 2001, as cited in Karimi & Nasouri, 2024). Rather than deliberately studying word lists, learners acquire vocabulary indirectly while trying to understand messages or enjoy activities (Ender, 2016; Laufer & Hulstijn, 2001). Research has shown that social interactions during these activities further enhance IVL by helping learners understand how words function in different contexts (Hapsari et al., 2018).

Several studies have examined IVL in digital game-based learning (DGBL) environments, particularly

focusing on how online games facilitate language learning (Calvo-Ferrer & Belda-Medina, 2021; Hapsari et al., 2018; Huang & Yang, 2014). Hapsari et al. (2018) conducted a study on Defense of the Ancients 2 (DoTA 2) players using observations and interviews. Their findings revealed that the game's English-based voice chat system promoted IVL through team communication. Players also used tools such as Google Translate to look up unfamiliar words during gameplay, demonstrating how gaming environments can encourage independent vocabulary learning (Hapsari et al., 2018). The same study also noted that the game's language difficulty was well-balanced and seemed to be challenging enough to promote learning, but not so difficult as to discourage players from acquiring new English vocabularies during gameplay.

While IVL has been observed in various game genres (Hapsari et al., 2018; Huang & Yang, 2014), specific research on MMORPGs remains limited. For instance, MMORPGs offer unique features for language learning, including complex narratives and sustained social interactions, but how these elements specifically contribute to IVL warrants further investigation. Therefore, the current study aims to address this gap by examining how game features of MMORPGs encourage ESL learners' IVL, potentially leading to improved English language proficiency test scores. In addition, understanding how game features could stimulate IVL among ESL learners can help educators better utilise DGBL for vocabulary instruction.

Functions of Game Features in MMORPGs

As a form of online digital game, MMORPGs are equipped with distinct game features that create unique opportunities for language acquisition during gameplay sessions. These features work in tandem with the immersive context that requires meaningful language use while maintaining engagement through the game's interactive design and environment. For instance, the quest system stands as a core feature, structuring gameplay through narrative-driven missions that necessitate comprehension of instructions, dialogues, and contextual vocabularies. As demonstrated in Culbertson et al.'s (2016) study of *Crystallize*, quest design inherently promotes language learning through three key characteristics: (a) sequenced task progression that scaffolds difficulty, (b) requirement for peer collaboration to solve linguistic challenges, and (c) repetitive exposure to target language in varied contexts. These mechanics create what Culbertson et al. (2016) termed as "*purposeful play*," where language use becomes instrumental to advance the game progression.

In addition, real-time communication systems represent another critical game feature, enabling immediate text and voice interaction between players. MMORPGs realise this through multiple communication channels, such as public chat for broad discussions, private messaging for focused exchange, and guild chats for group community interaction. The findings from McFadyen's (2020) study reveal how this game feature demands authentic language production in time constraint situations, which also relates to real-world spontaneous communication requirement. The effectiveness of this game feature is highlighted through its role in necessitating collaboration, as well as stimulating language practices where negotiation of meanings occurs through team strategizing or social bonding during gameplay sessions.

RESEARCH METHODOLOGY

This study aims to examine how game features stimulate ESL learners' IVL during gameplay sessions of MMORPGs, as well as explore the relationship between ESL learners' IVL and their improvements in English performance (i.e. English language proficiency test scores). The study involves qualitative content analysis based on two datasets: (a) video transcription excerpts of participants' collaborative discussions during gameplay sessions of the selected MMORPG, and (b) audio transcription excerpts of participants' online semi-structured interviews. The data obtained could potentially provide a comprehensive insight into the IVL processes that occur during gameplay sessions of MMORPG through participants' exchanges in in-game interactions.

Selection of Participants

The participants of this study were selected using purposive and snowball sampling techniques. The researcher recruited potential candidates from the online game communities in Discord using purposive sampling. Then, based on the recommendations from the initially selected participants recruited in Discord, they were involved in recruiting subsequent participants that fulfilled the selection criteria: (a) they possess B2 Intermediate English language proficiency, (b) they have experience playing online games for at least 3 hours daily as part of their regular gaming habits, (c) their interest in playing MMORPG, and (d) they have never played Lost Ark prior to the study. Since the study is centred on a specific demographic related to non-native ESL online game players who actively play MMORPG, only a small sample size of 16 participants were selected. All potential candidates were required to sit for an online Common European Framework of Reference for Languages (CEFR) test to gauge their English language proficiency levels according to the CEFR standards.

Research Instruments

This study utilised three research instruments, (a) pre- and post- English language assessment, (b) MMORPG – Lost Ark, and (c) online semi-structured interview.

English Language Assessment

The English language assessment comprises of 60 multiple-choice questions (MCQs) based on five text passages that participants needed to read and comprehend to answer the test questions (Refer Appendix 1). The language assessment is designed based on the Cambridge English test formats for B2 (Upper Intermediate) level learners under the CEFR framework. The language assessment incorporated test items that are linked to the narratives and main storyline of the MMORPG, Lost Ark. Additionally, the language assessment also contains test items related to English vocabularies that participants encounter while reading the text passages and during gameplay sessions. The English language assessments were also conducted in two stages: (a) as a pre-test before participants' initial Lost Ark gameplay session, and (b) as a post-test following their final gameplay session.

Prior to this study, a pilot test was conducted on the English language assessment to determine its reliability in collecting appropriate data pertaining to ESL learners' English language proficiencies before and after gameplay sessions of the MMORPG. Based on the findings of the pilot study, the English language assessment was revised and refined to enhance the reliability of the language assessment. The following steps were implemented: (a) seeking expert reviews to validate the language

assessment, and (b) conducting a readability test on the text passages in the language assessment. As a result, the reliability and validity of the English language assessment were improved with a Cronbach's Alpha value of $\alpha = 0.801$.

MMORPG – Lost Ark

This study utilised Lost Ark, a free-to-play MMORPG, as the designated platform to evaluate participants' IVL experiences during gameplay sessions. The game provides an immersive online environment that features narrative-driven game storylines and dynamic in-game cutscenes that enrich players' engagement with the game. Participants were required to engage in 2-hour gameplay sessions that accumulates to 15 hours per group of 4 players, which produced a total of 60 hours of accumulated gameplay sessions. The participants' online gameplay sessions were also video and audio recorded.

(a) Narrative-Driven Game Storyline

The narrative-driven storyline in MMORPGs is a core game feature that systematically guides players through interconnected quests, character interactions, and evolving plot developments, to maintain engagement while exposing them to contextualised language use. In Lost Ark, this narrative framework is primarily delivered through Main Story Quests (MSQs) that present players with progressively complex scenarios requiring comprehension of dialogues, instructions, and background stories. The narrative-driven game storyline requires players to process new lexical items to understand quest objectives, character motivations, and plot developments. The social attribute of MMORPG gameplay requires players to discuss and clarify story elements with peers, which exposes learners to specific terminologies during the narrative-driven game storyline.

(b) In-Game Cutscenes

The in-game cutscenes are scripted cinematic sequences that transition from gameplay and are strategically placed before, during, or after the completion of MSQs to advance the plot, offering contextual depth, and the enhancement of gaming experience. These non-interactive segments advance the plot through professionally voiced dialogues, contextual animations, and environmental storytelling, all of which provide concentrated exposure to authentic language use within meaningful narrative environment. These in-game cutscenes also function as multimodal input sources where vocabulary is naturally embedded in character interactions and plot developments. Players must process key terms not as isolated lexical items but as essential components for story comprehension. This contextual grounding is executed by associating words with visual cues and recurring narrative motives.

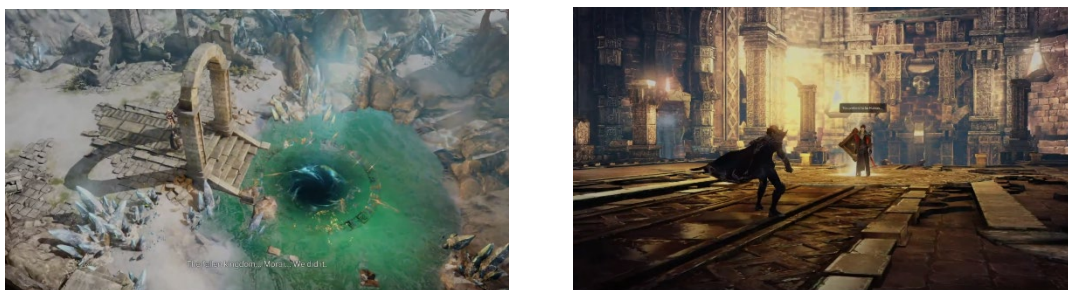


Figure 1. Examples of cutscenes experienced by participants when completing MSQs in Lost Ark.

Online Semi-Structured Interview

This study incorporated a qualitative research method through online semi-structured interviews conducted with all participants via Discord. These interviews were conducted to examine participants' perceptions of their Lost Ark gameplay experiences, with an emphasis on their IVL experiences during these sessions. The interview focused on two areas, (a) participants' personal assessments of their language skill development through gameplay sessions of Lost Ark, and (b) their views about how specific game features prompted their IVL experiences and peer interactions. All interview sessions were audio recorded using OBS software to ensure accurate data capture for data analysis.

Data Collection Procedure

Prior to collecting data, all participants were provided with a detailed consent form outlining the research objectives and ensuring their anonymity and confidentiality throughout the study. Following this, participants were required to take part in a pre-test in order to measure their initial English language proficiency scores prior to the first gameplay session of Lost Ark. The next phase of data collection was to have participant engage in the gameplay sessions of Lost Ark to facilitate their IVL while completing Main Story Quests (MSQs). Following this, participants were required to take part in a post-test to gauge the potential changes in their English language proficiency scores after the gameplay sessions of Lost Ark. The final phase of data collection was to conduct individual online semi-structured interviews with participants to find out whether the IVL processes that occurred during gameplay sessions of Lost Ark did influence their English language performance in terms of their scores in the English language proficiency tests.

FINDINGS AND DISCUSSION

The researcher has conducted two English language assessment, i.e. prior to the participants' first gameplay session (pre-test) and after their final gameplay session (post-test) of Lost Ark. The findings (refer Table 1) show that participants seemed to have improved their English proficiency test scores based on the post-test.

Table 1. ESL learners' pre-test and post-test scores

Participant	Pre-Test Score	Post-Test Score
1	36/60	44/60
2	43/60	49/60
3	33/60	43/60
4	36/60	44/60
5	32/60	40/60
6	40/60	51/60
7	44/60	49/60
8	41/60	47/60
9	38/60	45/60
10	38/60	44/60

11	40/60	50/60
12	44/60	50/60
13	35/60	42/60
14	37/60	47/60
15	34/60	43/60
16	40/60	46/60

A qualitative content analysis was conducted on the transcribed data comprising both participants' peer interactions during gameplay sessions of Lost Ark and their responses from the online semi-structured interviews. The unit of the analysis is based on the emergence of related occurrences linked to game features of MMORPG and how IVL occurred traced from the dialogues among the participants. The subsequent thematic analysis performed resulted in the identification of two key game features of MMORPG that significantly influenced participants' IVL during gameplay sessions of Lost Ark, which contributed to improved English language proficiency test scores: (a) narrative-driven storyline, and (b) in-game cutscenes. These game features were observed to influence peer interaction and IVL among participants during the gameplay sessions. The findings demonstrate how specific game features of MMORPG can effectively scaffold language learning by combining contextualised input with opportunities for negotiation of lexical items through peer interactions.

The Impact of Narrative-Driven Game Storyline on ESL Learners' Incidental Vocabulary Learning

According to Voulgari and Komis (2012), it is observed that as learners navigate the game's storyline and encounter in-game challenges, they are prompted to collaborate with their peers to exchange ideas, clarify misunderstandings, as well as practise their language skills. The observational notes produced from observing participants' collaborative discussions that transpired during gameplay sessions of Lost Ark indicate that learners were able to comprehend the intended narrative presented in the game, which contributes to their thorough comprehension of the game's storyline. The compelling narratives and engaging gameplay of MMORPGs have been found to foster intrinsic motivation for autonomous language learning (Reinhardt & Ryu, 2013), as observed in the collaborative discussions that transpired among participants during gameplay sessions of Lost Ark.

*P6: It's good. The death scene and this music give Benard's death **more depth and meaning**. Can actually feel what Thirain feels.*
P5: He was the one who said the quotes in Passage 2, right?
*P6: Guys, I think **we need to talk about this later after the session. You want to revise the passages?** (referring to the text passages in the English assessment test)*
P5: Let's do that. I also think I messed up some parts in Passage 2 and 3. Let's compare our answers.

Figure 2. Transcription excerpt on collaborative discussion between P5 and P6.

*P3: (Finished watching an in-game cutscene) Oh now it makes sense. **I wasn't able to understand what "fend off" means in the test.** It means he won, yes?*
*P1: Yes. I think that's why in the passage, it states that Armen was able to **fend off the devil**. I guess he won against that guy. Makes more sense now when you read the last part of Passage 1.*
*P3: Great! It means that **I should revise this question next time in the post-test.** Feels like I'm missing a lot of contexts to understand what it meant.*

Figure 3. Transcription excerpt on collaborative discussion between P1 and P3.

The analysis of collaborative interactions between participants in Figures 2 and 3 during Lost Ark's main story quests (MSQs) reveals how narrative-driven gameplay fostered incidental vocabulary learning (IVL) through peer engagement. As evidenced in Figure 2, P6's deep immersion in the MSQ narrative led to enhanced storyline comprehension, which subsequently motivated her to analyse assessment text passages, compare test answers with peers, and discuss challenging storyline sections. This engagement with game narratives and assessment materials appears to have directly contributed to P6's improved post-test performance, particularly in terms of IVL, as illustrated by his improved comprehension of the word based on contextual vocabulary occurrence. In addition, Figure 3 shows the collaborative discussion that occurred between P1 and P3 during the gameplay sessions of Lost Ark. This seems to suggest that the narrative contexts provided in the in-game cutscenes have influenced P3 to engage in collaborative discussions with P1 when seeking help to understand the English phrase “*fend off*”. It is observed in this collaborative discussion instance that participants were able to utilise English in real-world context by sharing information or simply engaging in interactions with their peers when completing MSQs in Lost Ark. Participants’ initiations in discussions with their peers helped to develop their understanding of English vocabularies through IVL, as they were able to ask for clarification on the narratives while negotiating meanings on new English vocabularies in order to understand the game’s storyline. This demonstrates how MMORPG can provide opportunities for IVL to occur when paired with participants’ own reflections on incidents related to IVL that bridge in-game experiences with formal language assessment.

Researcher: Do you feel online games (MMORPGs) could be utilised as a supplement to language learning in academic settings?
*P1: Yes, I think it makes sense to use online games in language learning because it gives you more **incentive to learn the language to understand the story** (in Lost Ark). Especially if you are like me, who likes storytelling aspects in MMORPGs, **being able to understand it makes me feel satisfied.***

Figure 4. Transcription excerpt on online semi-structured interview with P1.

The transcription excerpt in Figure 4 underscores how Lost Ark’s storytelling features facilitate IVL in MMORPG environments. P1’s response explicitly supports the pedagogical use of MMORPGs, noting that narrative-driven games incentivise language learners to engage with the linguistic content, i.e. the word usage. The learner’s engagement with vocabulary items and storyline context are closely linked to comprehension and immersion. This linkage between gameplay motivation and language learning corroborates with Quintin et al.’s (2016) findings on MMORPGs’ capacity to foster language acquisition through immersive virtual environments and collaborative narrative analysis.

Further analysis on the transcription excerpt in Figure 4 reveals that IVL is reinforced by specific game design elements. In-game cutscenes and the digital environment not only enhanced participants’ storyline comprehension but also triggered peer-driven IVL strategies, as evidenced by their increased collaborative discussions during and after exposure due to these game features. For instance, participants actively analysed cutscene dialogues and storyline progression with peers, suggesting that multimodal stimuli (visual, textual, and auditory) in MMORPGs can potentially scaffold contextual vocabulary retention and application. These observations collectively demonstrate how MMORPGs such as Lost Ark can serve as effective supplements to language learning and teaching by merging motivational gameplay mechanics with implicit IVL opportunities.

How In-Game Cutscenes Motivate ESL Learners to Engage in Incidental Vocabulary Learning

In-game cutscenes serve as a pivotal MMORPG feature that directly facilitates IVL by immersing players in narrative-driven storylines. These cinematic sequences compel players to engage with authentic language input, requiring them to decode dialogues, interpret visual cues, and connect cutscene content with broader narrative storylines, which are all critical processes for IVL. The current study reveals that Lost Ark's cutscenes specifically enhanced participants' IVL through two key mechanisms: a) providing rich contextual exposure to vocabulary through scripted dialogues and visual storytelling; and (b) prompting collaborative discussions where learners negotiate meaning and clarify unfamiliar terms to reinforce their comprehension. Analysis of the transcription excerpts demonstrates that participants consistently initiated collaborative discussions following cutscene viewings, especially after completing MSQs. These interactions not only deepened gameplay immersion but also created IVL opportunities as players analysed linguistic and narrative elements together. The findings demonstrate that in-game cutscenes are more than just engagement tools, they scaffold IVL through motivational gameplay design. This creates effective language learning conditions, particularly when paired with collaborative discussions that transpired during gameplay sessions of Lost Ark.

P15: Valtan is from Passage 2. This is the fight where Thirain activates his sword (referring to the in-game cutscene).
P14: Oh wow, okay so this is the part where the Vanquisher glows, right?
P15: Yeah, just like the passage. Do you remember that part in the passage?
P14: Oh, yes! Hmm... (reading Passage 2). P15, did you remember when Benard mentioned controlling anger?
P15: Yes, it's in the speech. I remembered almost messing up the answer for Question 30 (referring to the English language assessment test).
(P14 and P15 proceeded with the discussion related to the pre-test after watching the in-game cutscene)

Figure 5. Transcription excerpt on collaborative discussion between P14 and P15.

The exchange between P14 and P15 in Figure 5 illustrates how in-game cutscenes in Lost Ark facilitated IVL by creating direct connections between gameplay narratives and English language assessment items. As evidenced in Figure 5, participants' ability to recall specific test questions and passage details while viewing cutscenes (i.e. P15's immediate reference to Question 30 and Benard's dialogue about anger management) demonstrates how these cinematic sequences stimulated vocabulary acquisition and retention. The observational data reveals a clear scaffolding process where P15's deeper understanding of cutscene narratives (particularly visual cues such as the Vanquisher's glow and Thirain's sword activation) enabled P14 to better comprehend both the game's storyline and related test questions through provision of contextualized explanations. These explanations encompass thematic vocabulary that outline explicit connections between visual cutscene elements and textual passage references, while reinforcing the understanding through repetition and clarification. This interaction aligns with what is proposed by Vygotsky's (1978) Zone of Proximal Development, where the cutscenes created a shared reference point that allowed the more proficient peer (P15) to offer targeted linguistic support, particularly in helping P14 to decode story-related vocabulary and translate this comprehension to test performance. The improvement in P14's post-test scores emphasises the roles of in-game cutscenes as a catalyst to IVL, whereby this game feature not only motivated participation but also stimulated enhanced vocabulary acquisition and language assessment

performance.

P11: I think this scene right here gave so much more context to the second passage in our test. That exposition (referring to the in-game cutscene) really showed how much Thirain respects Benard as his father figure.
P9: Honestly, I feel like I misinterpreted one of the questions in Passage 2. I thought Benard was working with Scherit when he helped Thirain to escape from the castle.
P11: I'm pretty sure he acted as the father figure to Thirain because of his speech that helped Thirain to activate his sword. He wanted Thirain to come back and claim the throne. This cutscene seems to confirm what I understand from the second passage.

Figure 6. Transcription excerpt on collaborative discussion between P9 and P11.

The exchange between P9 and P11 exemplifies how in-game cutscenes systematically promote IVL through three interconnected processes: First, the visual narrative provides contextual anchors for vocabulary retention, as seen when P11 connects the cutscene's depiction of Thirain's sword activation to the test passage's description of this pivotal moment. Second, the collaborative discussions during cutscene viewing create opportunities for negotiation of meaning, where participants such as P9 actively seek clarification of in-game terms related to the in-game cutscenes (i.e. father figure, claim the throne) through social interaction. Third, the cutscenes' placement within MSQs ensures repeated exposure to story-critical vocabulary in meaningful contexts, which reinforces IVL through what participants described as "exposition" that "gave context" to English language assessment passages presented in the test. This scaffolding process, grounded in Vygotsky's (1978) ZPD, demonstrates how cutscenes transform individual IVL via collaborative knowledge-building. When P11 explains Benard's true role by referencing both the cutscene and test passage, he creates a bridge between P9's partial understanding and full comprehension through: (1) lexical clarification of key terms, (2) narrative reconstruction using multimodal evidence, and (3) relating cues from the in-game cutscenes to test-taking strategies. The data shows these interactions yielded measurable IVL gains, with P9's post-test improvement specifically in vocabulary items, which directly reflects the cutscene-mediated learning process during gameplay sessions of Lost Ark. Hämäläinen et al.'s (2018) refer to these IVL dynamics by highlighting how the design of the in-game cutscenes prompted the relationship between vocabulary and storyline. The participants' ability to transfer this understanding through in-game cutscene viewing to individual test performance seems to suggest that, in-game cutscenes combined with collaborative discussions during gameplay sessions of Lost Ark create optimal conditions for IVL to take place within MMORPG environments.

P6: Guys, I am rereading Passage 4 here. Does anyone know what "sombre" means? I think I answered this Question 36 correctly.
P7: You mean the definition of "sombre"? It means sadness, or sorrow. Somewhere between the two, I guess.
P6: Oh, so it was a sombre victory, right? Since they won the war, but a lot of people were killed?
P7: Yes. You can use this word to indicate that you are sad, or to describe a sad moment.

Figure 7. Transcription excerpt on collaborative discussion between P6 and P7.

Figure 7 shows the collaborative discussion that transpired between P6 and P7 during gameplay sessions of Lost Ark. As previously mentioned, the test questions and text passages from the English language assessment test are related to the game's storyline in Lost Ark. Therefore, as shown in Figure 7, P6 first encountered the English vocabulary "sombre" during the in-game cutscene of Lost Ark. He

proceeded to refer to Passage 4 of the language assessment test to verify the accuracy of his chosen answer for Question 36. The excerpt also shows that upon rereading the passage, P6 initiated a discussion to seek clarification on the word that he encountered during gameplay. It is observed from the excerpt that P7 responded by helping P6 to comprehend the meaning of the word “*sombre*”, which was also found in Passage 4 of the English language assessment. This further suggests that as P6 was experiencing the in-game cutscenes, he managed to negotiate the meaning of the vocabulary through the collaborative discussion with P7.

The overall findings seem to indicate that the narrative-driven storyline and inclusion of in-game cutscenes during Lost Ark gameplay sessions served as significant catalysts for promoting IVL among participants. These game features consistently encouraged participants to initiate and engage in collaborative discussions with their peers, creating natural opportunities for vocabulary acquisition through social interaction. The immersive nature of the game's digital environment further enhanced these interactions, as participants were motivated to seek clarification and deepen their understanding of the narrative content. For instance, when encountering complex story elements or unfamiliar vocabulary within the cutscenes, participants actively discussed these components with their peers, negotiated meanings and constructed interpretations. This process not only reinforced their comprehension of the game's storyline but also facilitated the acquisition of contextualised vocabulary. The repeated exposure to key terms and phrases during these discussions, combined with the visual and auditory reinforcement provided by the cutscenes, seem to contribute to more effective vocabulary retention. The participants' ability to recall and apply these terms during post-test assessments suggests that the combination of narrative immersion and peer collaboration created an effective ecosystem for IVL within the MMORPG environment.

Therefore, the findings of the study reveal that the game's design inherently supported IVL by embedding language use within meaningful and engaging contexts. The cutscenes, particularly, acted as focal points for discussion, prompting participants to analyse and verbalise their understanding of the narrative. These interactions often involved explaining plot developments, character motivations, and thematic elements, which required participants to access and utilise a range of vocabulary related to the game's content. The collaborative nature of these discussions ensured that participants were not merely passive recipients of information but active contributors to the learning process. By articulating their thoughts, asking questions, and receiving feedback from peers, participants engaged in higher-order cognitive processes that are essential for IVL. The observed improvements in post-test performance, particularly in areas requiring vocabulary-in-context and reading comprehension, underscore the efficacy of this approach. The findings collectively highlight how MMORPGs such as Lost Ark can be capitalised to stimulate IVL due to the narrative game storylines and in-game cutscenes.

CONCLUSION

This study has several practical implications. First, this study demonstrates the pedagogical value of narrative-rich game content in promoting IVL. Educators can design task-based activities where students analyse in-game cutscenes collectively, prompting them to negotiate meanings of unfamiliar vocabulary encountered in the dialogues and narratives. By guiding students to identify, discuss, and negotiate meanings of words from their shared viewing experiences, educators can create opportunities for IVL through peer scaffolding. Such an approach aligns with communicative language teaching

principles. The findings suggest that carefully curated collaborative sessions that are centred on game content can transform passive vocabulary learning into active IVL.

Second, the study highlights how educators can utilise MMORPG storylines as frameworks for contextualised vocabulary instruction. The progressive nature of narrative-driven games provides a natural sequence for introducing thematic lexical items through character interactions and plot developments. Educators can design supplementary materials that bridge in-game terminology with academic vocabulary lists, then structure group discussions where students compare usage across differing contexts that would result in contextualised use of the English vocabularies (Mardziah & Tan, 2023). This method capitalises on the advantages of utilising narrative content for IVL, while maintaining engagement through collaborative meaning-making. The data indicates that when students collaboratively analyse how words function within game storylines, they develop deeper conceptual understanding of usage than through isolated word-list memorisation.

Third, the findings also seem to indicate the potential of implementing structured peer feedback mechanisms during game-based IVL activities. As demonstrated in the study, peer discussions allowed participants to refine vocabulary understanding through clarification requests and explanatory exchanges during these interactions. Educators can formalise this process by incorporating activities that require students to identify unfamiliar terms during gameplay, document contextual guesses, then verify meanings through guided group discussions. This instruction approach ensures that social interactions benefit the IVL processes. The findings of this study suggest that IVL helps learners move beyond superficial word recognition and enable them to apply their vocabulary knowledge across different communicative contexts.

In terms of theoretical implication, the technological features such as in-game cutscenes, which are commonly found in MMORPGs, serve as a useful tool in aiding ESL learners by providing relevant contextual information while progressing the game. In line with that, the findings of this study demonstrated the usefulness of game features of MMORPG (e.g. in-game cutscenes) in scaffolding and extending ESL learners' Zone of Proximal Development in language learning.

The study has three limitations. First, the study only focused only on one online game genre, despite there are many other genres of online games. Therefore, the findings from this study could not be generalised to other online game genres, as each genre presents its own set of mechanics and interaction that could impact ESL learners' interactions and behaviours. Therefore, future research should explore how different genres of online games aid IVL among language learners. In addition, the findings of this study are limited by the online game players selected for the study. As players with different cultural and linguistic backgrounds may interact differently, thus future studies may want to take into consideration the backgrounds and cultural attributes of online game players. Lastly, to produce more conclusive and convincing findings, future researchers may want to significantly increase the number of online game players to enable statistical packages such as SPSS to be employed as part of data analysis.

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Appendix 1 – Samples of Language Assessment Test Items for Section 1 used in Pre- and Post-Tests

SECTION 1

Read **Passage 1** below and answer the following questions.

PASSAGE 1: MORAI – THE LOST KINGDOM

This is a story about a young priest named Armen who embarked on a journey to find the lost Ark, that is said to hold the power that could bring peace to the world. Unfortunately, Armen was also struggling with himself as he is a half human and half Delaine, a race that is able to possess demonic powers. However, this did not stop Armen in his quest to find the Ark and use it to defeat evil and restore balance to the world.

Armen was gathering clues regarding the Ark hidden by the king of Luterra. He suspected that the Ark was hidden in the lost kingdom of Morai.

While he was on his way to Yudia, Armen encountered people suffering from the **plague**. The people who have died were turned into undead creatures and started attacking other villagers. Consequently, the plague has spread to the border of Yudia.

Feeling sympathy for the border guards, Armen rushed to cure them. The guards told Armen that their **commander**, Abbot Levis, was heavily affected by the plague and in need of immediate help. After tracking and killing the demons that were causing the plague, Armen found a piece of jewel that

possesses strong healing capabilities. He used it to treat Abbot Levis and proceeded to ask him about the Morai kingdom in Yudia, as it has been **rumoured** to contain clues in finding the lost Ark.

According to Abbot Levis, Morai was the capital of the Cavatian kingdom. However, it disappeared into the desert after being buried in the sand. Because of that, Abbot Levis suggested that the locals in Yudia might know more about what happened to Morai more than he did. With this information at hand, Armen proceeded to visit the **monastery** and received documents left by the **pilgrims** who was looking for the Ark. With the support of carriages provided by the border post, Armen arrived at the salt desert, Yudia.

Upon arrival, ...

Samples of Questions for Section 1

Read **Passage 1** and complete the summary below.

Please **circle** or **tick** the correct answer. You can only choose **ONE** answer for each question.

Armen sought for information regarding the Ark hidden by the king of Luterra. (1) _____, his journey was disrupted as he stumbled upon a group of people who was infected by a (2) _____. After healing the guards, he rushed to defeat the demons and (3) _____ the commander, Abbot Levis, who then suggested him to talk (4) _____ the locals of Yudia about the Morai kingdom. Following the commander's order, Armen found and examined an (5) _____ that led him to the lost kingdom of Morai. After defeating Tanatos, ...

(1)

- A. Luckily
- B. Therefore
- C. However
- D. Thus

(2)

- A. power
- B. misinformation
- C. death
- D. plague

(3)

- A. healed
- B. killed
- C. heals
- D. kills

(4)

- A. to
- B. with
- C. against
- D. from

(5)

- A. rusty tombstone
- B. shiny gravestone
- C. old tablet
- D. enigmatic portal