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Enhancing Online Language Learning: The Impact of a Role-Playing Game-Based Platform in Thailand

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Abstract: This study examines the impact of a role-playing game-based (RPG) platform in online instruction at the undergraduate level, using a mixed-methods approach. Data were collected through questionnaires (n=33) and focus group interviews (n=15) to explore students' perceptions, development of 21st-century skills, and overall learning experiences. Findings reveal that the RPG-based platform significantly enhances student engagement and motivation, demonstrating the value of gamified environments in online learning. While technical difficulties and differing levels of gaming familiarity posed initial challenges, students' perseverance contributed to improved learning outcomes. The platform's support for autonomy and personalized learning aligns with intrinsic motivation theories, suggesting its potential to reduce learning barriers and foster skill development. Nevertheless, some students expressed a preference for traditional approaches, indicating the value of offering varied instructional strategies to accommodate diverse learning needs. Further research should explore diverse game mechanics to sustain engagement, address accessibility challenges, and examine the effectiveness of RPG-based learning across different learner profiles. Longitudinal studies are also recommended to evaluate the sustained impact of such platforms on language learning achievement.

Keywords: RPG, language learning, EFL teaching, 21st century skills, online instruction

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Introduction

The advent of gamification and game- based learning (GBL) has substantially transformed pedagogical methods, significantly enhancing student engagement and enthusiasm. This involved integrating game components such as points, levels, and badges, particularly in remote learning

settings (Bhat et al., 2023; Scheier & Hansen, 2022). The effectiveness of traditional teaching methods in maintaining students' focus is increasingly being questioned in an age dominated by individuals who are proficient in using digital technology (Abdel Meguid & Collins, 2017). Game-based digital platforms not only enable a more personalized and captivating learning environment but also provide flexible learning experiences that cater to the specific needs and abilities of learners (Peng et al., 2019). This transition provides the transformative potential of digital tools in enhancing academic achievements (Ahmadi et al., 2023).

To create a more immersive learning environment, the integration of role-playing games (RPG) has been demonstrated to be versatile and enhance comprehension of intricate concepts by enabling students to adopt roles that necessitate problem- solving and critical thinking, thus rendering abstract ideas more concrete and relevant (Taranikanti et al., 2023). Minecraft platform, for example, is a flexible adaptation of RPG frameworks that incorporate emergent role- playing through player- driven narratives and customizable characters, despite lacking formalized progression systems. Hébert and Jenson (2021) conducted the study with twelve educators from an urban Ontario school board to explore how Minecraft developed 21st-century skills in students. The results revealed that the success of Minecraft relied on teachers' pedagogical choices. Minecraft can significantly facilitate the acquisition of 21st- century abilities among students. However, adequate training is necessary to effectively utilize digital games like Minecraft for the development of 21st-century skills.

The examination of the efficacy of RPG- based tools presents an intricate circumstance. While it is possible that RPG-based tools could potentially improve the achievements of GBL, the existing body of evidence is inconclusive and equivocal (Luo, 2023; Vanacore et al., 2023). The varied outcomes observed in prior investigations suggest a complex correlation between the components of game design and educational objectives. This implies that while specific applications of role- playing games have shown promise, there is still a lack of understanding regarding their overall impact across different educational environments (Yu et al., 2020). Additionally, the ambiguity affects a broader spectrum of interventions within digital game- based learning. Despite the existence of demonstrated benefits in relation to motivation and cognitive learning outcomes, further rigorous research is required to validate these conclusions (All et al., 2021; Gordillo et al., 2021).

Furthermore, gender differences and prior gaming experience significantly influence students' learning experiences and motivation in educational settings, particularly in game- based and gamified learning environments. Mellado et al. (2024) indicates that gamification can have varying impacts on learning outcomes and motivation across genders. For instance, in programming courses, women tend to learn more in non-gamified settings, while men benefit more from gamified environments, reporting higher enjoyment and comfort with gamified tools.

Given this gap, this study therefore addresses the noticeable lack of comprehensive research on how these tools accommodate the distinct requirements and learning preferences of various demographic groups, including variations in learning experience. This dearth of analysis necessitates more rigorous, theory- based inquiries to conclusively determine the efficacy of the RPG tools (Gentry et al., 2019; Nitisakunwut & Soranastaporn, 2021). Particularly, the detailed, in-depth investigation into a specific context like online language instruction in Thailand is crucial before broader generalizations can be made. Therefore, this present study sought to examine the nuances of student perception, skill induction, and learning experience of the RPG- based platform and online instruction in Thailand. To gain comprehensive insights, the researchers split the main research question into the following sub-questions:

1. RQ1: How do students perceive an RPG-based platform application?
2. RQ2: How does game-based learning induce students' 21st-century skills?

3. RQ3: How does an RPG- based platform affect learning experiences in online instruction?

Theoretical Underpinning

This study is grounded in two key theoretical frameworks that provide a foundation for understanding the impact of role- playing games (RPGs) in an educational context: Self-Determination Theory (SDT) and Situated Learning Theory. These theories offer complementary perspectives on the motivational drivers and contextual factors that make RPG-based learning a potentially powerful pedagogical approach.

Self-Determination Theory (SDT) explains how intrinsic motivation is fostered by satisfying three innate psychological needs: autonomy, competence, and relatedness (Deci & Ryan, 1985). In the context of this study, RPGs are uniquely positioned to meet these needs. Autonomy is supported by providing learners with choices, from character customization to decisions that influence narrative outcomes, giving them a sense of control over their learning journey. The need for competence is addressed through structured quests, skill progression, and immediate feedback systems (e.g., earning experience points), which allow students to see tangible evidence of their mastery and growth.

Moreover, Situated Learning Theory offers additional insights by emphasizing that learning is most effective when it is "situated" in an authentic context and involves participation in a "community of practice" (Dahl, 1997). RPGs provide a rich, simulated environment where abstract concepts can be applied to solve concrete, in-game problems, making learning more meaningful and transferable.

Literature Review

Game-Based Application and Learners' Motivation

Games-based applications have been shown to significantly enhance learners' motivation across various educational contexts. The integration of gamification elements, such as points, badges, and rankings, has been widely adopted to create engaging learning environments that boost both intrinsic and extrinsic motivation (Ratinho & Martins, 2023). In programming education, a gamified web-based application with automated evaluation features increased students' willingness to participate, study, and engage in healthy competition, thereby enhancing their motivation and self-confidence (Hellin et al., 2023). Furthermore, the application of the ARCS model in gamified digital game-based learning showed significant improvements in students' motivation, particularly in terms of intrinsic goals and task value, although it did not significantly impact conceptual knowledge (Camacho-Sánchez et al., 2023).

In summary, the integration of game-based applications offers an effective means to increase students' motivation, reinforcing the importance of incorporating game mechanics into educational contexts to stimulate both interest and persistence.

Game-Based Self-Regulated Language Learning (GSRLL) and Learners' Autonomy

Game-based self-regulated language learning significantly facilitates learners' autonomy by integrating motivational, cognitive, and social dimensions that empower learners to take control of their learning processes. Digital game-based learning environments enhance self-regulated learning strategies, particularly in vocabulary development, by encouraging learners to engage in cognitive, metacognitive, and resource management strategies, which are crucial for autonomous learning (Yang et al., 2024). Similarly, Zhang et al. (2024) found that motivation acts as a mediator between the use of self-regulated learning strategies and vocabulary knowledge

development, suggesting that game-based learning environments can enhance motivation, thereby promoting learner autonomy. Ryu's (2013) research further shows that language learning through gaming culture involves both in-game learning and beyond-game interactions, fostering autonomy through collaborative and repeated practices. Hence, GSRLL shows a promising prospect to promote a learner-centered approach by equipping students with the strategies and motivational support necessary to independently direct and sustain their language learning journeys.

Game-Based Learning (GBL) and Learners in 21st Century Skills

In the context of higher education, Game-Based Learning (GBL), integrating interactive and engaging elements that foster critical thinking, problem-solving, collaboration, and creativity, has been shown to enhance understanding of complex concepts such as the circular economy by promoting diversity-friendly collaboration and cooperation among culturally and disciplinarily diverse participants, thereby preparing students for global challenges (Manegre & Gutiérrez-Colón., 2020; Waite et al., 2024). Similarly, GBL is instrumental in teaching computational thinking (CT), a fundamental 21st-century skill, by utilizing game elements like clear goals, progressive challenges, and immediate feedback to motivate students and enhance their problem-solving capabilities (Wang & Huang, 2023). In language learning, digital game-based language learning (DGBLL) fosters language development and critical thinking while reducing stress and anxiety, thus creating a conducive environment for skill acquisition (Raffone, 2022). Therefore, GBL seems to emerge as a powerful pedagogical approach for cultivating 21st-century competencies, enabling learners to develop cognitive flexibility and collaborative capabilities in an engaging and low-stress environment.

Gender and Game-Based Learning Outcomes

Several key factors, including gaming behaviors, self-regulation, prior gaming experience, and emotional responses, account for the differences in game-based learning outcomes between male and female gamers. Female students tend to engage less in "gaming the system," a behavior indicative of disengagement, which positively influences their learning outcomes compared to male students in digital learning games focused on problem-solving and self-explanation tasks (Baker et al., 2024). Additionally, male learners often explore more within game environments like Minecraft, which correlates with increased STEM interest, although both genders benefit from exploration and task completion (Esclamado & Rodrigo, 2024). Self-regulated learning (SRL) plays a crucial role, with boys showing more effective use of cognitive tools in games like Crystal Island–Outbreak, although this advantage diminishes when accounting for prior gaming experience (Nietfeld et al., 2014). Female students often report higher initial frustration in game-based learning environments due to less prior gaming experience, but interventions such as learning companions can mitigate this frustration, promoting equity in learning outcomes (Buffum et al., 2015). Furthermore, the frequency of video game play, which is generally higher among males, influences academic achievement, with frequent male gamers starting to use digital devices earlier and spending more time gaming outside school (Başaran & Şimşek, 2023).

In essence, gender-specific factors must be carefully considered in the design and implementation of game-based learning environments to ensure equitable engagement and maximize learning outcomes across diverse student populations.

RPG-based Tools and Language Acquisition

In the realm of language acquisition, these instruments have demonstrated efficacy in enhancing diverse facets of linguistic proficiency, encompassing lexical assimilation, textual

understanding, effective communication, and grammatical competence, underscoring the necessity for their assessment through meticulous investigation (Changkwian & Suppasetseree, 2023; Ghafar & Sawalmeh, 2023). Primarily, role-playing game (RPG)-based mechanisms establish immersive and interactive educational settings that can enrich vocabulary absorption by immersing learners in contexts abundant with new terminology (Miftahuddin and Malihah, 2022). Similarly, Rankin et al. (2006) accentuate that the efficacy of massively multiplayer online role-playing games (MMORPGs) creates opportunities for learners to assume roles and interact in foreign languages, thereby enhancing language proficiency through social exchanges within a community of players. Business games simulate diverse real-world scenarios, providing learners with practical and realistic contexts for language use. This approach allows students to encounter and practice the language in situations that mirror actual communication, enhancing their engagement and adaptability. (Nuritdinovna, 2023). The integration of game elements such as feedback, narrative, and levels in digital game-based language learning (DGBLL) has been shown to aid vocabulary acquisition and retention, although there is a need for more research on their application to input and output language skills (Govender & Arnedo-Moreno, 2021). Furthermore, MMORPGs provide a motivating context for intermediate and advanced learners, promoting engagement in beneficial language interactions and offering valuable opportunities for vocabulary acquisition (Peterson, 2010). As such, RPG-based language learning tools offer rich, context-driven learning experiences that support vocabulary and communication skills, yet they warrant further research to optimize their role in supporting diverse linguistic competencies.

Methodology

Research Design

This study employs a mixed-method approach in accordance with the explanatory sequential design proposed by Creswell (2019), which entails the systematic gathering of quantitative data followed by qualitative data, as depicted in Figure 1. Utilizing this design methodology enables a thorough investigation of the insights derived from quantitative data and expands upon perspectives that might not have been attainable solely through quantitative data collection. The researchers employed an online questionnaire and a focus group interview. The quantitative data and outcomes offer a broad overview of the research issue, while the qualitative data is imperative to enhance, expand, or elucidate the overarching quantitative depiction. Given the intricate nature of the data collection, a sample size of 33 proves to be pragmatic. This size effectively harmonizes the requirement for thorough data collection and analysis while considering the limitations imposed by time, resources, and the in-depth approach characteristic of qualitative research.

Figure 1
Explanatory Sequential Design (adopted from Creswell, 2019)

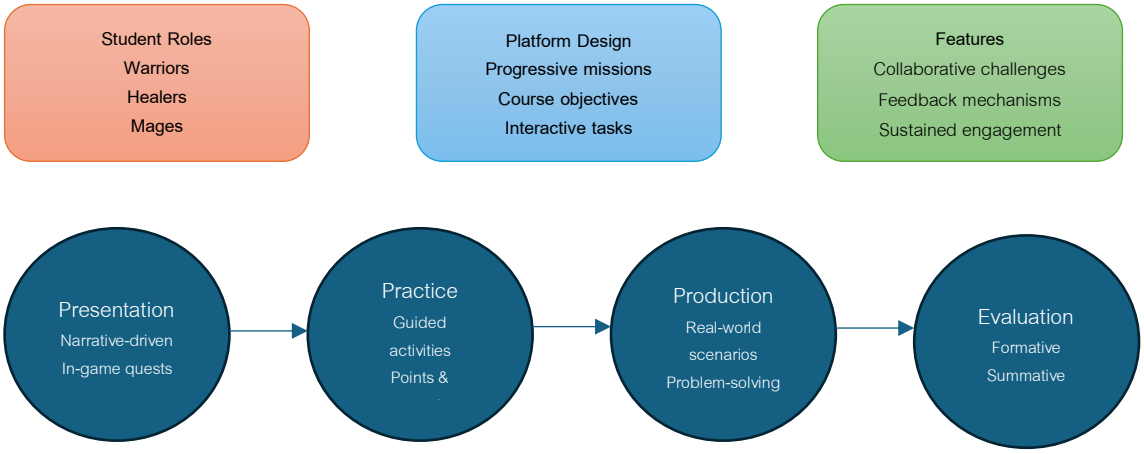
The Implementation of Classcraft as an RPG-Based Platform in Online Instruction

Classcraft is implemented in online instruction to provide gamification and immersive role-playing environments, allowing students to adopt roles such as warriors, healers, and mages, thereby

interacting with academic content in a dynamic and compelling fashion. In this study, Classcraft served as a platform for content-based instruction, with lessons designed as progressive missions that students were required to complete (see Figure 2). Each mission aligned with course objectives and was embedded with interactive tasks, collaborative challenges, and feedback mechanisms to encourage sustained engagement. Throughout the course, the researchers adopted a structured instructional sequence consisting of four key stages: presentation, practice, production, and evaluation, all delivered within the RPG-based platform. During the presentation phase, new content was introduced through narrative-driven contexts tied to students' in-game quests. In the practice phase, learners completed guided activities to reinforce understanding while earning points or unlocking game-based rewards. The production stage enabled students to apply knowledge through individual or group tasks that mirrored real-world scenarios or problem-solving quests. Finally, the evaluation phase involved both formative and summative assessments, which were integrated into the game environment to maintain immersion while measuring learning outcomes.

Figure 2

The Implementation of Classcraft as an RPG-Based Platform in Online Instruction



Quantitative Study

Participants and Procedures

Thirty-three undergraduate students from a university located in the Southern region of Thailand were involved in the research project. They were in their third year of academic study. The focus on this particular student group allows for a more granular analysis of their interactions with the platform. The recruitment of these participants was carried out through the utilization of the convenience sampling technique, as referenced by Creswell (2019). The distribution, detailed in Table 1, indicated that 12.1% of the students were male, while 87.9% were female, each possessing diverse levels of exposure to game-based learning. Among the participants, a total of 21 students reported having engaged in game-based learning activities.

Table 1
Demographic data of participants, n=33

		Absolute frequency	Percentage
Gender	Male	4	12.1%
	Female	29	87.9%
Prior game-based learning experience	Yes	21	63.6%
	No	12	36.4%

Prior to commencing the inquiry, students were provided with an orientation session aimed at offering guidance on the functionalities within Classcraft application. Participants were further briefed on the objectives of the research and the conditions for participation, which were approved by the Research Ethics Committee of the university. Each participant provided consent to the conditions as an expression of their willingness to engage in the research of their own volition.

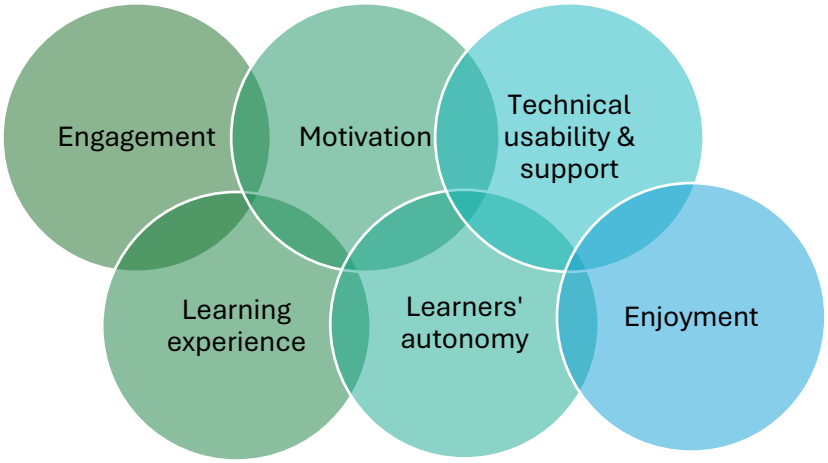
The questionnaire on students' perceptions and experiences was adapted from previously validated instruments in the domains of game-based learning and educational technology (e.g., Hamari et al., 2016; Cheong et al., 2013). To ensure content validity, the questionnaire was reviewed by two experts, and adjustments were made to better align the items with the context of the Classcraft platform and the learning objectives of the course. To confirm the reliability of the instrument, a pilot test was conducted with a group of five students who were not part of the main study. Cronbach's alpha was calculated for the main constructs (e.g., motivation, engagement, collaboration), and values above 0.80 were obtained, indicating strong internal consistency.

Subsequently, the students were mandated to establish their respective teams and were also tasked with registering as 'characters'. Each character is endowed with distinct capabilities such as health points, action points, and experience points, with each student assuming varied roles within the team. Every member of the group was delegated specific duties within the team structure. Upon completion of the course, participants were asked to complete the questionnaire, which typically required approximately 10 minutes.

Questionnaire Design

An online questionnaire was employed to ascertain students' attitudes towards Classcraft. Within the questionnaire, students were asked to share their experiences with game-based learning and their opinions about Classcraft. The investigation involved questioning participants on their general perceptions of engaging in learning, assessed across six dimensions using a five-point Likert scale. The constructs consisted of learners' engagement, motivation, technical usability and support, learning experience, learners' autonomy, and enjoyment as depicted in Figure 3. Before administering questionnaires to participants, validity assessments were conducted by scholars in the academic field and volunteer undergraduates. Adjustments to the question wording were implemented based on received feedback.

Figure 3
Students' Perceptions



Data Analysis

Upon gathering quantitative data, the researchers proceeded with deductive coding to examine descriptive statistics pertaining to the questionnaire's result. At this stage, the researchers looked over the responses to research questions to ascertain the general perceptions of students towards Classcraft. To decode the demographic data, the researchers used a non-parametric statistical test to determine if there's a significant difference between the distributions of two independent groups.

Findings

The data reflects students' feedback regarding their involvement, motivation, autonomy, technical usability, cognitive difficulty, and enjoyment while interacting with Classcraft throughout the semester. The following is an examination of the results categorized by theme.

Table 2
Engagement

	N	Minimum	Maximum	Mean	Std. Deviation
1. Students answer teachers' questions and join class every session.	33	3.00	5.00	4.1212	.73983
2. Students completed all activities and assignments in Classcraft.	33	3.00	5.00	4.3636	.54876
3. Students continuously follow the work and activities assigned by the teacher on Classcraft.	33	1.00	5.00	4.1818	1.04447
4. Students are eager to do activities and learn from what the instructor assigns in Classcraft.	33	3.00	5.00	4.3030	.63663
Valid N	33				

In Table 2, students' engagement displayed relatively high mean scores across the items. The mean values indicate consistent participation and adherence to class activities. Standard deviations suggest relatively low variability, reflecting a generally uniform level of engagement among students.

Table 3
Motivation

	N	Minimum	Maximum	Mean	Std. Deviation
1. Students think that quests in RPG-based platform help them achieve the objectives of each lesson.	33	3.00	5.00	4.4242	.61392
2. Students want to earn experience points in RPG-based platform.	33	1.00	5.00	4.0303	.88335
3. Students turn assignments in early to gain extra experience points.	33	2.00	5.00	4.5758	.75126
4. Students feel the desire to perform their best.	33	3.00	5.00	4.6970	.52944
5. Students feel excited about class events before each class starts.	33	2.00	5.00	4.5152	.79535
Valid N	33				

Table 3 demonstrates that the motivation-related items revealed the highest mean scores across all themes, ranging from 4.03 to 4.70. The 4.70 mean for Motivation 4 signifies students' strong desire to achieve rewards and participate enthusiastically. However, the standard deviation of Motivation 2 at 0.88335 is observed, suggesting differences in individual motivational drivers.\

Table 4
Learners' Autonomy

	N	Minimum	Maximum	Mean	Std. Deviation
1. Students like self-paced learning that allows them to proceed to the next quest without waiting for the teacher.	33	2.00	5.00	4.1515	.83371
2. Students turn assignments in early to gain extra experience points.	33	2.00	5.00	4.5758	.75126
Valid N	33				

Table 4 reveals that autonomy and self- paced learning showed robust mean scores of 4. 15 (Autonomy 1) and 4.58 (Autonomy 2). These findings highlight students' preference for controlling their learning pace. Variability was moderate (e.g., SD = 0.75126 for Autonomy2), showing that some students may have found self-pacing more beneficial than others.

Table 5
Technical Usability and Support

	N	Minimum	Maximum	Mean	Std. Deviation
1. Students view Classcraft's technical problems as trivial.	33	1.00	5.00	3.3939	1.17099
2. Students feel confident asking for help from instructors whenever there are technical difficulties in Classcraft.	33	2.00	5.00	4.4545	.71111
Valid N	33				

Table 5 points out that the technical usability and support theme yielded mixed results. Usability2 had a high mean score of 4. 45, indicating confidence in seeking help for technical difficulties. However, Usability1 had a lower mean of 3. 39, with a high standard deviation (SD = 1. 17099), reflecting diverse experiences with technical challenges.

Table 6
Challenge and Cognitive Development

	N	Minimum	Maximum	Mean	Std. Deviation
1. Students like challenging learning environments that help them learn new concepts.	33	3.00	5.00	4.3636	.74239
2. Students think that the activities and assignments in RPG- based platform help facilitate their learning.	33	3.00	5.00	4.3636	.65279
Valid N	33				

With regard to challenge and cognitive development, Table 6 shows that both items under this theme scored equally, with mean values of 4.36. This consistency suggests that students found the platform challenging yet cognitively enriching. The relatively low variability (SD = 0. 74239 for Challenge1) further confirms a shared perception of the cognitive benefits.

Table 7
Enjoyment

	N	Minimum	Maximum	Mean	Std. Deviation
1. Students feel pleased studying on Classcraft.	33	2.00	5.00	4.4848	.66714
2. Students want to study on Classcraft again.	33	1.00	5.00	4.1515	1.00378
3. Students think that the learning management system of Classcraft makes class more interesting.	33	1.00	5.00	3.8788	1.13901
Valid N	33				

Table 7 displays high levels of enjoyment and satisfaction scores, particularly for Enjoyment1 (M = 4.48), suggesting a positive emotional response to the platform. However, Enjoyment3 had the lowest mean across all items (3.88) and the highest variability (SD = 1.13901), indicating that enjoyment might have been contingent on individual preferences or experiences.

Table 8

Impact of gender

	Null Hypothesis	Sig.[a,b]
1	Engagement across genders	.133[c]
2	Motivation across genders	.852[c]
3	Learners' autonomy across genders	.770[c]
4	Technical usability and support across genders	.439[c]
5	Challenge and cognitive development across genders	.979[c]
6	Enjoyment across genders	.505[c]

Table 8 shows no significant differences across genders in the various themes. All p-values exceed the significance threshold of 0.05. This suggests that both male and female participants perceived the platform similarly in these dimensions, highlighting its potential to offer an equitable learning experience.

Table 9

Impact of Gaming Experience

	Areas	Sig.[a,b]
1	Engagement	.187[c]
2	Motivation	.063[c]
3	Learners' autonomy	.044[c]
4	Technical usability and support	.618[c]
5	Challenge and cognitive development	.036[c]
6	Enjoyment	.040[c]

In Table 9, the data, on the one hand, demonstrates that experience level introduces noticeable differences in some areas. Firstly, students with differing levels of experience demonstrated varied perceptions of autonomy, indicating that more experienced users may benefit more from self-paced features. Secondly, the construct of challenge and cognitive development (p = 0.036) varies with experience, suggesting that experienced students identified the platform appropriately challenging. Lastly, enjoyment levels (p = 0.040) are significantly different, indicating that more experienced users might derive greater satisfaction from the platform. On the other hand, themes such as engagement (p = 0.187) and technical usability and support (p = 0.618) show no significant differences across experience levels, indicating a consistent perception of these aspects.

Qualitative Study

To enhance comprehension of students' attitudes towards RPG-based platform application, the researchers delved into qualitative data to acquire additional knowledge that may not have been obtained through the questionnaire. The researchers utilized the method of focus-group interview that revolved around three primary domains:

1. RQ1: How do students perceive RPG-based platform application?

2. RQ2: How does game-based learning induce students' 21st-century skills?
3. RQ3: How does an RPG- based platform affect learning experiences in online instruction?

Participants and Procedures

Out of the 33 students who responded to the questionnaire, fifteen students expressed their willingness to participate in the focus group interview. The participants consisted of thirteen female and two male students. A systematic two-phase process for selecting participants was formulated. During the first phase, the typical participants within the cohort were determined through a process involving the computation of the minimum and maximum scores, mean values, and standard deviation derived from their responses to the questionnaire. Subsequently, we asked individuals with mean scores falling within one standard deviation of the mean to participate in the focus group. In the second phase, 'best informant' was identified from the cohort utilizing a maximal variation approach (Creswell, 2019). This method resulted in the selection of three female participants with diverse backgrounds in relation to their prior game-based learning experiences, thus facilitating the preservation of various viewpoints on persistence in RPG-based platform.

The focus group protocol was developed and was subjected to expert review by two specialists in educational technology and qualitative research to ensure content validity. Revisions were made based on expert feedback to improve the clarity and alignment of the questions with the research objectives. To establish the reliability of the interview instrument, a pilot focus group was conducted with three students from a similar background who were not part of the main study. Their responses were analyzed to refine the interview flow, reduce ambiguity, and confirm question effectiveness in eliciting rich, relevant data.

After the revision, the researchers conducted the interview by dividing the focus group into three sessions to delve deeply into each individual's responses. The individuals were requested to permit the researchers to record the conversation and make annotations. Each participant disclosed their first name at the commencement of the interview.

A thirty-minute focus group interview was conducted with each session. During the interview, note-taking was employed to record some relevant key terms responded to by each individual.

Data Analysis

Each interview was audiotaped with the participants' permission and transcribed verbatim to facilitate subsequent data analysis (Creswell, 2019). This examination was achieved through the utilization of MAXQDA, a qualitative software designed for the storage, coding, and development of themes based on data. The process of qualitative analysis involved several key steps: (1) initial exploration of the data by carefully reviewing the transcripts and making notes; (2) segmentation and labeling of the data through coding the text; (3) validation of the codes by ensuring agreement among coders; (4) utilization of codes to formulate themes by grouping similar codes together; (5) establishment of connections and relationships among the themes; (6) creation of a narrative for the focus group comprising of descriptions and themes; and (7) conducting a cross- case thematic analysis. The reliability of the results was ensured through triangulation of various sources of data, inter-coder consensus, and thorough examination and resolution of conflicting evidence (Creswell, 2019; Miles et al., 2014).

Findings

The interview excerpts presented in this section are labeled with codes corresponding to the student participants, such as S1 (student 1), S2 (student 2), and so forth, to protect their anonymity.

RQ1: Students' Perceptions toward RPG-Based Platform

Theme 1: Accessibility. Many interviewees had initial difficulties due to the unfamiliarity and complexity of the platform. Particularly, some interviewees with no experience playing RPG-based game felt it was cumbersome to acclimatize themselves to the application.

> *S8: "It's not too hard for us, just the registration at first was tricky. Once you settle into it, it's fine."*
> *S9: "Some parts are confusing, so I needed help from the teacher to figure things out."*
> *S10: "I find it quite hard, probably because I'm not used to playing games."*
> *S11: "It's not very hard, but it felt awkward at first since I wasn't familiar with it."*
> *S12: "Not difficult, but not easy either—especially if you don't know gaming terms."*
> *S13: "It's easy overall, but we sometimes become confused due to different factors."*
> *S14: "It was tricky at first because I didn't know what things were, but it got easier once I understood them."*

These responses indicate a transitional learning curve. Although challenges were common at the beginning, students recognized that familiarity and practice gradually improved their ability to navigate the system.

Theme 2: RPG-Based Platform Mechanism. Beyond initial hurdles, students acknowledged several engaging aspects of the platform. Participants appreciate the range of characters and the integrated system for tracking progress through quests and rewards.

> *S1: "It's challenging and exciting since it's a different way of learning than I'm used to."*
> *S2: "It's fun and engaging with lots of characters and challenges. I liked doing quests step by step and having everything—content, exercises, and links—in one app. The characters and their outfits were cool too."*

The novelty of the platform appeared to promote motivation, particularly by introducing new learning techniques. Students valued the creative and dynamic learning experience it facilitated.

> *S4: "It's fun and new, and it helps improve my tech skills through using new tools."*
> *S7: "I enjoy everything because it feels like a game—exciting and motivating me to finish missions on time."*
> *S8: "Gamified learning pushes me to finish tasks faster for points, and I'm more eager to answer in class for bonus points."*

In addition to motivation, the platform was appreciated for reducing learning stress and offering continuous updates. Even those who are not traditionally game- oriented find the experience enjoyable and engaging, suggesting a broad appeal of the platform.

> *S9: RPG-based platforms make learning engaging and less stressful by adding games.*
> *S10: Managing lessons with RPG-based tools is enjoyable.*
> *S11: I appreciate that the platform lets us motivate each other after tasks.*
> *S12: It's appealing because it's new and constantly updated.*

S15: 'I usually struggle with games, but learning on an RPG-based platform makes it enjoyable.'

However, not all feedback was entirely positive. A few participants noted drawbacks, such as repetitiveness or a preference for more conventional methods.

S11: 'I prefer direct task handling over game-style approaches.'
S14: 'I enjoy it, but weekly play becomes repetitive and less engaging.'

This suggests that while RPG- based learning introduces novel engagement strategies, it must maintain variety and accommodate diverse learner preferences.

RQ2: Effects of Game-Based Learning on 21st Century Skills

Theme 1: Critical Thinking. Participants pointed to the platform's ability to foster higher-order thinking skills. Tasks requiring teamwork and multitasking encouraged adaptive and problem-solving behavior.

S6: "There are certain tasks that necessitate collaborative problem-solving."
S12: "... I attend classes via my phone while simultaneously accessing the RPG-based platform on a separate device."

These insights reflect how gamification can reinforce cognitive flexibility and practical problem-solving skills.

Theme 2: Creativity. The customization features supported learner creativity, offering a sense of identity and ownership over the learning process.

S13: 'Customizing outfits is unique and lets us design them freely, which sets this app apart.'
S14: 'Dressing up characters is enjoyable and visually appealing.'

Such personalization elements distinguish the platform from traditional learning tools, fostering engagement through aesthetic expression.

Theme 3: Collaboration. Collaboration emerged as one of the platform's strongest aspects. This sentiment is echoed by participant S5, S6, and S7. Students emphasized how group tasks promoted both academic teamwork and peer bonding.

S5: "*Group work helps me clarify confusion*."
S6: "*Teamwork is valuable for collaboration*."
S7: "*RPG platforms boost teamwork skills*."

Further reflections revealed how game mechanics such as shared health points required collective effort, thus reinforcing interdependence and shared responsibility.

S8: *'Working together in groups to advance through levels has strengthened bonds and support among us, even if we weren't close before.'*
S12: '*I like that finishing missions is tied to homework and our group's HP, so we have to collaborate to keep our energy up*.'
S15: '*We must work together to achieve the teacher's goals*.'

These findings support the view that RPG-based platforms can foster not only academic skills but also social-emotional development.

Theme 4: Communication. Opportunities to share ideas and engage with classmates appeared to enhance communication skills in an informal, inclusive context.

S9: '*I value students' ability to share ideas in class*.'

This indicates the potential of gamified environments to act as communication hubs, encouraging dialogue beyond traditional classroom interaction.

RQ3: Effects of RPG-Based Platform on Learning Experience in Online Instruction

Theme 1: Emotional Reaction. Emotional responses ranged from relief and excitement to mild anxiety. The platform created a relaxed, low-pressure environment for many, though the unfamiliar interface initially intimidated some.

S2: "*Boss Battles make answering questions stress-free and help me relax*."
S4: "*It feels like a fun, low-pressure game*."
S5: "*I'm a bit anxious, as it's a new app for me*."
S8: "*It's relaxed and enjoyable, like playing a game with friends*."

This variability in responses underscores the need for clear onboarding and differentiated support based on students' comfort with technology.

Theme 2: Gaming Experience. Participants likened the platform to real games, praising features like levels, XP, and character roles. These elements contributed to sustained interest and provided a familiar structure for those with gaming experience.

S1: '*The scoring uses HP and XP, which makes it feel game-like*.'
S4: '*I hadn't played games like this before, so I needed to learn*.'
S6: '*It's like a game with levels and characters, each with unique skills*.'

Such features indicate the platform's capacity to merge entertainment and education effectively.

Theme 3: Learning Style. Preferences for learning styles varied among students. While some favored traditional methods, others appreciated the blended approach combining games, videos, and step-by-step instruction.

S11: '*I prefer structured, direct tasks over game-style approaches*.'
S13: '*I enjoy novel and challenging activities*.'
S15: '*Integrating games, RPG platforms, or videos can help clarify teaching*.'

The responses suggest that combining game-based approaches with other pedagogical tools could cater to a broader spectrum of learners.

S3: '*Game-based learning makes lessons more engaging and easier to remember*.'
S6: '*Games boost my interest in learning*.'
S10: '*Breaking lessons into steps helps organize learning effectively*.'

Theme 4: Technical Barrier. Technical limitations presented notable challenges. Difficulties such as memory overload, internet dependency, app crashes, and hardware constraints affected accessibility and user satisfaction.

S6: '*Easy with proper equipment, challenging without it*.'
S7: '*Usually convenient, but sometimes logs out unexpectedly*.'
S8: '*Initial registration is tricky without a strong internet; it takes about 5 minutes to learn*.'
S12:'*The app is resource-intensive for devices with low memory and requires a fast internet connection, which makes it inconvenient for users relying on a single device or hotspot*.'
S14: '*Unstable on mobile devices, requiring frequent restarts when switching tabs or after crashes*.'
S15: '*Enhances learning but can be frustrating due to occasional crashes*.'

These concerns highlight the importance of infrastructure readiness when integrating gamified platforms into online instruction.

Discussion and Conclusion

These applications leverage game features to increase the level of positive learning experience within Classcraft. Ratinho and Martins (2023) suggested that gamified learning environments significantly enhance student engagement and intrinsic motivation by integrating educational content into an interactive and rewarding framework. For instance, the ability to earn points and progress at one's own pace, as facilitated by an RPG-based platform, fosters a sense of autonomy and achievement (Ryu, 2013). As proposed by Deci & Ryan (1985), choice, acknowledgment of feelings, and opportunities for self-direction were found to enhance intrinsic motivation because they allow people a greater feeling of autonomy.

The findings further show that the RPG-based platform has been effective in cultivating an immersive and interactive learning environment that not only retains student interest but also deepens their understanding of new concepts, as suggested by Dahl (1997). The platform's activity-based and game-based approaches facilitate individual progression through a mix of competitive and cooperative activities. In contrast to Camacho-Sánchez et al. (2023), this strategy highlights that educational games not only enhance cognitive skills but also stimulate enthusiasm and motivate thorough learning, thereby aiding in concept comprehension.

Despite the generally positive reception from students towards RPG-based platform, there were a few female students with minimal gaming exposure and a lack of familiarity with the RPG mechanism who tended to experience a sense of stress and dissatisfaction when using the RPG-based platform application, therefore reducing their learning achievement. This result indicated a potential benefit of prior gaming experience, which is consistent with the study carried out by Buffum et al. (2015) and Nietfeld et al. (2014).

At the outset, many students encountered initial hurdles with the RPG-based platform, primarily due to its unfamiliar interface and the unique demands of navigating a game-based learning environment. This common narrative of initial frustration highlights the necessity for intuitive design. Research by Holden and Rada (2011) highlighted that user-friendly interfaces are crucial in preventing early disengagement. According to Zhang (2019), high-complexity stimuli, for instance, can place extra demands on working memory, suggesting that the complexity of game features themselves could contribute to cognitive load if not matched with the user's prior knowledge and experience. However, as the students acclimated to the RPG-based platform, their experiences morphed into stories of mastery and engagement, suggesting that the initial steep learning curve might actually serve as an investment into deeper engagement with the platform over time (Hsu & Chen, 2022). This perseverance exhibited learners' grit in language learning, showing a persistent effort characterized by a determination to work diligently towards long-term goals, regardless of challenges and setbacks (Duckworth et al., 2007; Paradowski & Jelinska, 2023). However, the

intervention of scaffolding by teachers and friends could be one of the factors that could mitigate students' frustration, as shown by Buffum et al.'s (2015) study.

In addition, the qualitative findings further reveal that RPG-based platform's impact extends into the development of 21st-century skills, with critical thinking, creativity, collaboration, and communication taking center stage. Students engaged in quests that demanded not just knowledge recall, but also analytical thinking and strategic planning. As noted by Wang and Huang (2023), the efficacy of game-based learning bolsters problem-solving skills, implying that the platform is not merely a repository of content but an active space for engaging students in complex thinking tasks. Furthermore, creativity flourished under the freedom to personalize avatars, providing a canvas for self-expression within the digital learning environment. This feature of personalization not only made learning more enjoyable but also more personally relevant, which is a powerful motivator for continued engagement. This result corresponds with the study of Meyers (2005), highlighting that enhancing free-choice learning by incorporating Dewey's pragmatic epistemology, valuing learners' knowledge and volitional activity can foster creativity in learning. As suggested by Falk (2005), free-choice environmental learning emphasizes learner autonomy, fostering creativity through self-directed exploration outside traditional educational settings, and shaping lifelong learning experiences beyond formal constraints.

Overall, RPG-based applications also provide opportunities for students to cooperate with friends. The configuration of the teams was designed to cultivate collaboration and enhance social skills among the team participants. Haugland et al. (2022) also emphasized the value of cooperative learning, which fosters effective teamwork through joint responsibility with flexible organization. Building on collaboration, the RPG-based platform facilitated a vibrant exchange of ideas, enhancing communication skills—an essential skillset, highlighted by Manegre & Gutiérrez-Colón (2020), enabling students to collectively share information, create knowledge, and enhance foreign language learning through interactive discussions.

Despite these positives, the journey within the RPG-based platform was not without its technical challenges. Difficulties such as application stability, demanding memory requirements, and the need for high-speed internet connections were significant detractors, impacting the overall user experience. Such technological hurdles resonate with the literature regarding the accessibility of educational technology which emphasizes the requirement for intuitive design and robust infrastructure to support the seamless integration of such tools in educational settings (Hew et al., 2019). The qualitative feedback from some participants further highlights notable concerns regarding the repetitive nature of the activities within the RPG-based platform and a preference for more traditional learning approaches, which may suggest limitations in the platform's design and implementation. This result reiterates the importance of dynamic content that evolves to maintain user engagement over time. Such a need for variety is supported by research indicating that sustained engagement in learning environments can diminish if the activities become too predictable and monotonous (Kelly, 2014). Furthermore, the result accentuated the fact that each individual possesses a unique learning preference. One of the participants in the interview prefers a more "sequential" or "reflective" learning style as described by Felder and Silverman (1988), where the learner may benefit from structured, clear, and linear instructional methods rather than the exploratory and often non-linear paths offered by game-based learning.

Implications for Future Research

The conclusions drawn from the present study propose various implications for the development and execution of RPG-based platform. Subsequent investigations ought to delve into methods for broadening the range of game mechanics and content to uphold student engagement in the long term, especially for individuals with limited gaming backgrounds or a preference for traditional

learning methods. Confronting obstacles related to technological accessibility and difficulty is essential for extending the scope to explore factors contributing to learners' language learning achievement. Moreover, scrutinizing the distinct effects of gamification across varied demographic and psychological profiles can yield profound insights into tailoring learning experiences to individual requirements. Ultimately, longitudinal research should be undertaken to examine the impact of innovative RPG platforms in language classrooms.

Declaration of Conflicting Interests

The authors declare that they have no conflict of interest.

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