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The Impact of Digital Educational Games (DEG) on Improving Omani Foundation Program (FP) EFL Students' Grammar Skills and their Attitudes

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ABSTRACT

The research aims to investigate the impact of DEG on grammar skills and attitudes toward grammar learning among Foundation Program students at Salalah Vocational College. To do this, pre-post tests were adopted, and research data were collected using a grammar test and an attitude scale. Over eight weeks, students engaged with several digital educational games, including Bamboozle, Booklet, Grammaropolis, Grammar Smash, and Wordwall, to practice five key grammar areas from the English for Vocational Education textbook: Wh-question, subject pronouns, sentence formation using the verb to be (affirmative, negative, and interrogative forms), definite and indefinite articles, and modal verbs. The findings revealed that there are statistically significant improvements in students' grammar performance as well as more positive attitudes toward grammar learning and the use of digital games. The research recommends providing continuous professional development for teachers to integrate digital educational games into grammar instruction effectively and encourages further research on their application across other language skills. Overall, the results demonstrate the potential of digital educational games as effective and engaging tools for enhancing grammar instruction in vocational education contexts.

1. Introduction

Grammar plays a fundamental role in effective communication, supporting clarity and accuracy across the four language skills: speaking, writing, reading, and listening. Previous research has consistently demonstrated that grammatical competence contributes significantly to writing quality and language proficiency (Harmer, 2001; Rao, 2019; Ghosh & Sen, 2023; Marjokorpi, 2023). However, despite its importance, grammar instruction is often perceived as difficult and demotivating, particularly in English as a Foreign Language (EFL) contexts such as Oman where traditional

teacher-centered approaches still dominate (Daskan, 2023; Waseel, 2020; Aladini et al., 2022; AlAbri, 2022).

In response to these challenges, Digital Educational Games (DEG) have emerged as a promising pedagogical tool. Recent research (Awing & Nasri, 2023; Aratea & Pasubillo, 2024; Khan et al., 2024) highlights that DEG can significantly enhance learner engagement, motivation, knowledge retention, and collaborative skills. Therefore, this study seeks to investigate the potential of DEG to improve grammar learning outcomes among Omani EFL students.

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Students in the vocational colleges in Oman struggle in learning grammar. This is often due to exam-focused learning, limited English exposure outside the classroom, and cultural perceptions that view grammar as tedious. Lee (2022) emphasized the importance of communicative competence and learning grammar through context and interaction.

A survey of 27 vocational college teachers conducted by the researcher, revealed that low language proficiency is the main challenge in grammar instruction (54.2%). Most teachers (62.5%) use technology, and 75% incorporate Digital Educational Games (DEG), especially Quizizz. Teachers reported that DEG boosts motivation and engagement (58.3%), though lack of resources remains a barrier.

Research shows that traditional grammar teaching in Oman still dominates due to time constraints and curriculum demands (AlAbri, 2022). Grammar is often taught in isolation, limiting its practical use (Donovan, 2024). Scholars like Amirjanli (2023) and Pham (2023) note the confusion caused by rule-based methods and call for more integration of DEG with collaborative strategies. Manokaran et al. (2023) stress the need to explore student attitudes toward DEG to better tailor instruction.

Research Questions

1. What is the effect of Digital Educational Games (DEG) on improving FP EFL students' grammar skills?
2. What is the effect of DEG on students' attitudes toward learning grammar?
3. How do FP EFL students perceive the use of DEG in grammar instruction?

This study contributes to the growing body of research on technology-enhanced language learning by providing empirical evidence from the Omani vocational college context, which remains underrepresented in EFL research. Specifically, it addresses persistent challenges in grammar instruction within Foundation Programs, where students often struggle to apply grammatical rules in communicative contexts. By examining the effectiveness of Digital Educational Games (DEG), the study offers practical insights for teachers and curriculum designers seeking to integrate

interactive technologies into grammar teaching in Omani higher education institutions.

Literature Review

Grammar

Grammar is no longer viewed solely as a set of prescriptive rules focused on syntax and morphology. Webb (2022) advocates for a broader perspective that includes metalinguistic awareness and noticing strategies, aligning with usage-based theories where grammar evolves through interaction and context. Bhatt (2020) highlights the conflict between traditional accuracy-based instruction and modern communicative approaches, especially in EFL contexts like Oman, where structuralist models remain dominant. This shift reflects the growing recognition of English as a pluricentric, globally-used language, requiring teachers to address both grammatical form and communicative function.

The Importance of Grammar in Education

Despite methodological shifts, grammar remains foundational in English teaching. Crawford (2020) stresses embedding grammar within communicative syllabi, while Bhatt (2020) warns that overemphasis on rules can hinder fluency. Studies consistently affirm grammar's role across all four skills: Oprishch (2022) and Kaur (2024) link grammar to writing coherence, Hyland and Tse (2020) emphasize its role in academic expression, and Nation & Newton (2022) highlight grammar's support in reading comprehension. Field (2021) connects grammar knowledge to listening, and Ellis (2022) notes its role in vocabulary learning. Overall, grammar facilitates effective, coherent communication in academic and real-world contexts.

Challenges in Grammar Teaching

Adult learners have negative experiences with grammar instruction, which can create resistance to new methods. This historical baggage may lead students to prefer rote memorization of rules rather than engaging with grammar in a communicative context. Thus, Misra (2023) suggests that teachers must work to rebuild students' confidence and interest in

grammar through engaging and relevant activities. Besides, Natoo (2024) indicates that there are exceptions and irregularities to many of the rules, which makes grammar intrinsically complex. Learners may become overwhelmed by this intricacy and find it challenging to understand the reasoning behind grammatical structures. To assist students in internalizing these rules, teachers must simplify explanations and offer relatable, clear examples. Moreover, balancing instructional approaches is one of the main challenges in grammar teaching. Ferris (2024) illustrates that there is an ongoing debate among teachers about the best approach to teaching grammar, whether to focus on explicit instruction of rules or to integrate grammar into communicative practice. However, learners in any classroom come with a range of learning styles and proficiency levels. This diversity necessitates differentiated instruction, where teachers adapt their methods to meet individual needs. For instance, some students may benefit from explicit grammar instruction, while others may thrive in more communicative, context-based approaches. Finding the right balance is crucial; too much focus on rules may hinder practical language use, while insufficient attention to grammar can lead to inaccuracies in communication. Furthermore, the availability of suitable instructional resources is another challenge that teachers frequently encounter. McCarthy (2020) argues that particularly in environments with limited resources, resources could be outdated or inappropriate for the unique needs of their students. Students' engagement and the efficacy of grammar education may be hindered by this shortage. To sum up, through understanding the diverse needs of learners, simplifying complex rules, balancing instructional methods, utilizing appropriate resources, and fostering a supportive learning environment, teachers can enhance their effectiveness in teaching grammar.

The dominance of deductive grammar teaching (where rules are dictated rather than discovered) is one of the common challenges in grammar teaching in Oman. (IBID) reveal that 83% of Omani English teachers default to rule-based instruction, despite curriculum guidelines

advocating inductive methods. Teachers, burdened by overcrowded classrooms and rigid exam schedules, are scapegoated for these systemic flaws. However, the Ministry of Education's insistence on maintaining high-stakes standardized testing, which rewards grammatical accuracy over communicative fluency, directly sabotages reform efforts. When exam success hinges on memorizing decontextualized rules, teachers have no incentive to adopt student-centered approaches. Several studies have noted that despite curriculum reforms promoting communicative approaches, traditional grammar teaching practices remain prevalent in many Omani classrooms due to factors such as exam-oriented assessment systems and classroom constraints (AlAbri, 2022; Al-Mahrooqi & Denman, 2020). Teacher preparedness programs in Oman are emblematic of the gap between policy rhetoric and ground-level realities. While the government touts its investments in professional development (the 2018 National Framework for Teacher Professional Standards), workshops remain superficial, focusing on abstract theories rather than classroom applicability. A teacher interviewed by AlAbri (2024) lamented, "We're told to 'be creative,' but given no tools to manage 45 students with mixed abilities in a 40-minute class." This performative approach to training reflects a bureaucratic preference for check-the-box reforms over meaningful upskilling.

The absence of localized training materials exacerbates the problem. Workshops often recycle Western methodologies ill-suited to Oman's sociolinguistic context. For instance, communicative language teaching (CLT) assumes small class sizes and high student motivation—conditions absent in many Omani public schools (Al-Mahrooqi & Denman, 2020). Until training programs address these contextual disparities, teachers will remain trapped in a cycle of disillusionment and resistance.

Samad's (2022) study places the blame on students for making repeated mistakes in subject-verb agreement, suggesting that these errors are due to carelessness or a lack of effort. This approach represents a form of victim-blaming, as it ignores the role of the education

system in shaping student understanding. Some studies attribute persistent grammatical errors among learners to limited practice or lack of attention (Samad, 2022). However, other scholars argue that these errors may also result from inconsistencies in grammar instruction and variations in teaching approaches across different educational levels. Such inconsistencies can create confusion for learners who encounter different explanations of the same grammatical structures. Therefore, improving instructional clarity and continuity in grammar teaching remains essential for supporting learners' grammatical development.

Addressing Challenges in Grammar Teaching

To address these issues, Marjona (2023) recommends ongoing, practical teacher training and differentiated instruction. Chapman (2020) and Ruivivar (2021) highlight using interactive, contextualized activities such as games and real-life tasks. Technology is increasingly proposed as a solution; Faridi & Shaheen (2024) support the use of apps and digital tools for immediate feedback and personalized learning. In Oman, AlAbri (2022) stresses the need for sustained teacher support and curriculum reform. DEG (Digital Educational Games) offer one such solution, combining engagement, adaptability, and communicative practice to enhance grammar instruction.

DEG Definition and History

Digital Educational Games (DEG) are computer-based learning tools that integrate educational objectives with game mechanics (Jantakun & Jantakoon, 2021; McLaren & Nguyen, 2022). From early examples like *The Sumerian Game* (1964) to modern platforms like *Minecraft Education* and *Duolingo*, DEG has evolved with advances in technology and pedagogy. Recent innovations incorporate AI and adaptive learning (Faridi & Shaheen, 2024), making DEG more responsive to individual learner needs.

DEG in Education and Grammar Instruction

DEG enhances motivation, collaboration, and retention by merging fun with function

(Daniela, 2020; Fokides, 2020). In Oman, studies by Al Shibli (2019), Alawfi (2024), and Ebrahimi & Alhumairi (2023) show that digital games boost student engagement, especially in English classrooms. Research by Khan et al. (2024), Castillo (2020), and Celi (2023) demonstrates that game-based grammar learning improves test scores, retention, and real-life language use. Castillo-Cuesta (2020) further found that games enhance both grammar and vocabulary through contextual learning.

Challenges of Using DEG in Grammar Teaching

While promising, DEG use faces challenges like technical issues, limited training, and resistance to change (Trinh, 2022; Al-Bulushi & Al-Issa, 2017). In Oman, rigid curricula and limited teacher preparedness are major barriers. Al-Yahyai (2023) notes cultural concerns and classroom management fears. However, many researchers argue these obstacles can be overcome with proper planning and localized support.

Attitudes Towards Grammar and DEG

Students' attitudes toward grammar vary. Some value its importance, but find it difficult and disengaging (Raparin University, 2023; Innovare Journal, 2022). Positive experiences often depend on instructional style. DEG positively influences student attitudes by reducing anxiety and enhancing motivation (Tongsom, 2023; Khan, 2024). Castillo (2020) and Nur (2020) found that collaborative, game-based grammar tasks improved learners' confidence and perception of grammar as enjoyable and useful.

While previous studies have demonstrated the benefits of gamification and digital tools in language learning (Castillo-Cuesta, 2020; Khan & Kumar, 2024; Pham, 2023), most of this research has been conducted in Asian or Western contexts. Limited empirical work has examined the use of Digital Educational Games in Omani higher education settings, particularly within vocational colleges. Furthermore, few studies have simultaneously investigated both grammar achievement and learner attitudes toward game-based learning. Therefore, the

present study seeks to address this gap by examining the impact of DEG on grammar proficiency and students' attitudes among Foundation Program learners at Salalah Vocational College.

Recent research in the Omani context has also emphasized the role of innovative and technology-supported pedagogies in improving language learning outcomes. For instance, Aladini, Alrantisi, and Wahdan (2022) demonstrated that integrating technological innovations into English instruction significantly improved grammar skills among Omani secondary school students. Similarly, Aladini, Almashani, and Kashoob (2023) found that cooperative learning strategies enhanced grammatical accuracy and learner engagement among intermediate EFL learners in Oman. These studies highlight the importance of interactive and student-centered instructional approaches in addressing persistent grammar learning challenges. However, while previous studies have explored cooperative learning and technological innovations, limited research has specifically examined the impact of Digital Educational Games (DEG) on grammar learning within Omani vocational college contexts. Therefore, the present study extends previous work by investigating how DEG can enhance both grammar proficiency and learner attitudes among Foundation Program students.

Previous studies conducted in Oman have shown that innovative pedagogical strategies such as cooperative learning and technology-enhanced instruction can significantly improve English grammar learning outcomes (Aladini et al., 2022; Aladini et al., 2023). However, the role of Digital Educational Games in grammar instruction within vocational college settings remains underexplored.

Methodology

Instruments and Procedures

This study used two main instruments: a **grammar skills test** and an **attitude scale**, both validated and piloted with 12 students not included in the main sample.

Grammar Skills Test

The test assessed five key grammar skills aligned with Level One curriculum:

1. WH-question recognition
2. Use of subject pronouns
3. Sentence formation with “to be”
4. Use of definite and indefinite articles
5. Use of modal verbs

Each skill had five items (25 total). Content validity was established through expert review (8 experts), with revisions made accordingly. Reliability was confirmed with:

- **Cronbach's Alpha** = 0.89 (strong internal consistency)
- **Test-retest correlation** = 0.90 (high stability)

Attitude Scale

A 20-item Likert-scale questionnaire was developed to assess students' attitudes toward grammar and the use of DEG. It covered two domains: perceptions of grammar and DEG-based learning. Validity was ensured through expert review and item refinement.

- **Construct validity:** item-total correlations ranged from 0.42 to 0.89
- **Reliability:**
 - **Cronbach's Alpha** = 0.89
 - **Test-retest correlation** = 0.82

Intervention Procedures

The 8-week intervention targeted Level One students at Salalah Vocational College. Five digital educational games were used for grammar instruction:

- **Baamboozle & Blooket:** Competitive quiz-based games with instant feedback
- **Grammaropolis:** Story-based animated grammar instruction
- **Grammar Smash:** Sentence-level grammar drills with real-time feedback
- **Wordwall:** Customizable activities like matching and quizzes

These tools were chosen for their accessibility, engagement, and alignment with target grammar skills.

Findings

First question: What are the grammar skills that FP EFL students should possess?

Level One EFL students need to acquire five key grammar skills:

1. **WH-Questions** – Understand and use *who*, *what*, *where*, *when*, *why*, and *how* for meaningful communication and comprehension.
2. **Subject Pronouns** – Use pronouns like *I*, *you*, *he*, *she*, etc., correctly to form clear, coherent sentences.
3. **Verb “To Be”** – Form affirmative, negative, and interrogative sentences with *am*, *is*, and *are*.
4. **Articles** – Differentiate between *definite (the)* and *indefinite (a/an)* articles for precise referencing.
5. **Modal Verbs** – Use modals like *must* and *should* to express necessity and give advice.

These foundational grammar skills support accurate, effective communication in academic and daily contexts.

Second question: What is the framework of the program based on employing digital educational games (DEG) in teaching grammar to FP EFL students?

A structured 8-week Digital Educational Games (DEG) program was implemented at Salalah Vocational College for 32 first-year students. It followed this sequence:

- **Week 1:** Orientation to the study, introduction to DEG tools (Baamboozle,

Blooket, Grammaropolis, Grammar Smash, Wordwall), and pre-tests on grammar and attitudes.

- **Week 2:** Training on how to use the DEGs, including tutorials, demos, and guided practice.
- **Weeks 3–7:** Grammar lessons combined with DEG activities to reinforce learning. Student feedback was gathered after each session.
- **Week 8:** Post-tests and surveys were conducted to evaluate grammar improvement and attitude changes. Final reflections assessed students' experiences and the educational value of DEGs.

The framework aimed to boost grammar proficiency and foster positive attitudes through interactive, game-based learning.

Third question: To what extent does DEG improve FP EFL students' grammar skills?

The study analyzed pre- and post-test scores of 32 students in five grammar areas. Using paired-sample t-tests, the analysis measured changes in performance through mean scores, t-values, and p-values. The findings showed statistically significant improvement in all five grammar skills, with p-values below 0.05, confirming that the use of Digital Educational Games (DEG) had a positive and meaningful impact on students' grammar proficiency.

Paired-sample t-test analyzing students' grammar skills.

Scale	Test	N	Mean	SD	T	Sig. Value	Sig. Level
Construct sentences using correct subject pronouns	Pre-Test	32	3.72	1.02	3.95	<.001	Sig
	Post-Test	32	4.25	0.76			
Differentiate between definite (the) and indefinite articles (a, an) and understand their usage rules	Pre-Test	32	3.75	0.98	2.95	0.006	Sig
	Post-Test	32	4.19	0.90			
Recognize the meaning of WH questions	Pre-Test	32	2.81	1.00	3.65	0.001	Sig
	Post-Test	32	3.56	0.98			
Produce sentences using model verbs	Pre-Test	32	2.28	0.96	5.46	0.006	Sig
	Post-Test	32	3.16	1.22			
Form affirmatives, negatives and questions, using verbs to be	Pre-Test	32	2.31	0.93	7.04	<.001	Sig
	Post-Test	32	3.31	1.09			

Effect size calculations confirmed that the improvements in grammar skills were not only statistically significant but also substantial.

Using eta squared (η^2), values ranged from 0.219 to 0.615, indicating a strong instructional impact. The most notable gains were in forming

sentences with the verb “to be” ($\eta^2 = 0.615$) and using modal verbs ($\eta^2 = 0.490$), while improvements in subject pronouns ($\eta^2 = 0.335$), WH-questions ($\eta^2 = 0.300$), and article usage ($\eta^2 = 0.219$) were also significant. These results show that the DEG intervention had a robust and meaningful effect on students’ grammar proficiency.

Effect size of grammar skills test

Grammar Skill	η^2	Effect Size
Construct sentences using correct subject pronouns	0.335	Large
Differentiate between definite and indefinite articles	0.219	Large
Recognize the meaning of WH questions	0.300	Large
Produce sentences using modal verbs	0.490	Large
Form affirmatives, negatives, and questions using “to be”	0.615	Large

Fourth question: To what extent does DEG improve FP EFL students’ attitudes toward learning grammar skills?

To assess changes in student attitudes, a paired-sample t-test was conducted comparing pre- and post-intervention scores on the attitude scale. The results showed statistically significant differences at the $\alpha \leq 0.05$ level, indicating a positive shift in students’ attitudes toward grammar learning after using Digital Educational Games (DEG). Increases in mean scores across attitude dimensions, along with reduced standard deviations and low p-values, confirmed that the intervention led to meaningful improvements in how students perceived grammar instruction.

Paired-sample t-test analyzing students’ attitudes

n	Scale	BEFORE - Mean Score	BEFORE - Std. Dev.	AFTER - Mean Score	AFTER - Std. Dev.	Stat. Sig. (2-tailed)
1	I enjoy learning about grammar rules.	3.19	1.06	4.34	0.70	<.001
2	I feel confident when applying grammatical rules in writing and speaking.	3.06	1.66	4.19	0.64	.001
3	I believe that understanding grammar is essential for my future career.	2.91	1.51	4.25	0.62	<.001
4	Grammar lessons are engaging and helpful for my studies.	2.38	1.24	4.16	0.77	<.001
5	I am excited to learn new grammar rules and structures.	2.69	1.35	4.31	0.64	<.001
6	Grammar exercises often make me feel frustrated.	1.41	0.67	1.97	0.82	.001
7	I struggle to apply grammar rules when speaking or writing.	1.34	0.48	1.97	0.78	<.001
8	I feel overwhelmed by the number of grammar rules I need to learn.	1.25	0.57	1.97	1.09	.004
9	I think grammar is one of the hardest parts of learning English.	1.13	0.49	1.81	0.78	<.001
10	I find learning grammar rules difficult and confusing.	1.19	0.54	1.88	0.75	<.001
11	I feel engaged when learning grammar through digital games.	2.94	1.39	4.34	0.70	<.001
12	Playing games motivates me to learn grammar.	2.75	1.29	4.19	0.64	<.001
13	I am more likely to study grammar when it involves games.	3.31	1.47	4.25	0.62	.003
14	I believe that using digital games helps improve my grammar skills.	3.06	1.39	4.16	0.77	.001
15	I enjoy learning grammar when using digital games.	2.91	1.42	4.31	0.64	<.001
16	Playing grammar games enhances my interaction with my classmates.	3.09	1.42	4.34	0.74	<.001
17	Digital games help me understand grammar rules more easily.	2.28	1.11	4.25	0.80	<.001

18	Grammar games are accessible and convenient for me to use anytime.	2.81	1.40	4.09	0.69	<.001
19	I feel that some grammar games do not cover enough grammar topics.	1.44	0.56	1.88	0.71	.008
20	I get frustrated when I make mistakes in grammar games.	1.28	0.46	1.81	0.69	.001

Fifth question: To what extent does DEG improve FP EFL students' attitudes toward using DEG in learning grammar skills?

The data shows that Digital Educational Games (DEG) greatly improved students' engagement, motivation, and willingness to learn grammar. Students found the games enjoyable, effective, and helpful for understanding grammar rules. The games also enhanced classroom interaction and were seen as accessible and convenient.

However, after the intervention, some students felt the games didn't cover all grammar topics fully and experienced more frustration when making mistakes, indicating increased focus on their performance. Overall, DEG had a positive impact on both students' attitudes and learning experience.

Discussion

First Research Question

What are the grammar skills that FP EFL students should possess?

Foundation-level students in vocational colleges must master five key grammar skills: recognizing WH questions, using subject pronouns correctly, forming affirmatives, negatives, and questions with the verb "to be," differentiating definite and indefinite articles, and producing sentences with modal verbs. These skills are crucial for clear communication in both academic and professional contexts.

Understanding WH questions promotes detailed information exchange and critical thinking, while correct subject pronoun use ensures clarity in instructions and teamwork. Mastery of "to be" forms supports expressing facts and inquiries, and accurate article usage improves grammatical precision. Modal verbs enable learners to convey necessity and advice effectively.

The researcher emphasizes that proficiency in these areas equips students to follow instructions, collaborate, and meet workplace

language demands, boosting confidence and reducing misunderstandings. Therefore, a focused teaching approach on these grammar skills is essential for lifelong language proficiency and career readiness.

Second Research Question

What is the framework of the program based on employing digital educational games (DEG) in teaching grammar to FP EFL students?

The researcher implemented an eight-week program using Digital Educational Games (DEG) like Baamboozle, Blooket, Grammaropolis, Grammar Smash, and Wordwall to improve students' grammar skills and attitudes. The program included initial assessments, tool familiarization, progressive grammar exercises, and final evaluations, allowing students to gradually build both DEG proficiency and grammar competence.

Findings showed that this structured approach helped students become confident with the games, enhanced their grammar abilities, and encouraged reflection and feedback, which deepened engagement and boosted confidence. The program made grammar learning more interactive and accessible. Its clear, replicable design makes it suitable for use in other educational settings.

These results align with research by Mohamed (2020), who emphasized the role of feedback in skill development, and Triwibowo (2024), who noted that DEG's interactive nature increases motivation and understanding. Together, these findings support DEG as an effective, engaging, and motivating tool for grammar instruction.

Third Research Question

To what extent does DEG improve FP EFL students' grammar skills?

The DEG intervention significantly improved students' ability to construct sentences with correct subject pronouns, enhancing their

syntactic awareness and subject-verb agreement accuracy, consistent with recent studies (Noori, 2025). Learners also made notable progress in differentiating definite and indefinite articles through interactive practice, supporting findings by Gusta et al. (2024).

Recognition of WH-questions improved substantially, with DEG helping students grasp their functions, aligning with Amin et al. (2024). While modal verb use showed marked gains, mastery varied due to the complexity of modals, suggesting the need for additional targeted support as noted by Mansor et al. (2024). Significant improvement was also seen in forming affirmative, negative, and interrogative sentences with the verb “to be,” with most learners gaining confidence, reflecting Noori’s (2025) research on interactive tools.

Overall, DEG enhanced accuracy and consistency across all grammar skills, proving to be an effective and engaging instructional platform, though differentiated support may be beneficial for more complex areas like modal verbs and “to be” constructions.

Fourth Research Question

To what extent does DEG improve FP EFL students’ attitudes toward learning grammar skills?

The intervention using Digital Educational Games (DEG) significantly increased students’ enjoyment of learning grammar, transforming it from a traditionally tedious subject into a motivating and engaging experience, as supported by Noori (2025). Learners also gained confidence in applying grammar rules, benefiting from immediate feedback and low-pressure practice opportunities, which aligns with findings by Gusta et al. (2024).

Participants increasingly saw grammar as relevant to their future careers, reinforcing motivation through real-world connections, consistent with Mansor et al. (2024). DEG made lessons more engaging and fostered active participation and collaboration, supporting deeper understanding (Amin et al., 2024). Excitement about learning grammar rose, highlighting the positive emotional impact of game-based learning noted by Gusta et al. (2024).

Frustration during exercises decreased, likely due to better support and increased confidence. Students found it easier to apply grammar in speaking and writing, with DEG aiding transfer to real-life use (Conti, 2025). The intervention also helped reduce cognitive overload by breaking grammar into manageable parts, consistent with Cognitive Load Theory (Karwowska, 2024). Overall, learners perceived grammar as less difficult and confusing, thanks to clearer, communicative instruction and supportive feedback, as noted by Fountoulakis (2024), with DEG playing a key role in fostering competence and clarity.

Fifth Research Question

To what extent does DEG improve FP EFL students’ attitudes toward using DEG in learning grammar skills?

The analysis examines students’ attitudes toward using Digital Educational Games (DEG) to enhance grammar learning, focusing on motivation, engagement, perceived effectiveness, and emotional responses like frustration. Post-intervention results showed increased engagement and motivation, with learners feeling more interested and willing to study grammar through games. These findings align with recent research highlighting DEG’s ability to sustain learner interest through immediate feedback and rewards (Noori, 2025; Gusta et al., 2024).

Students also viewed DEG as effective and enjoyable tools that foster voluntary, sustained learning, supporting long-term development (Mansor et al., 2024). The games improved classroom interaction and peer communication, reflecting social learning benefits (Noori, 2025), and helped learners understand grammar rules better due to their interactive, contextual design (Amin et al., 2024). Accessibility was valued, allowing flexible, autonomous learning.

However, some learners felt that certain games lacked comprehensive grammar coverage, indicating increased critical awareness of content gaps. Frustration also rose as students became more invested and focused on accuracy, highlighting the emotional challenges of deeper engagement. The researcher concludes that while DEG create motivating and effective

grammar learning experiences, careful attention to content quality and emotional support is necessary to maximize benefits and maintain learner motivation over time.

Conclusion

This study provides important new insights by empirically demonstrating the effectiveness of Digital Educational Games (DEG) in improving grammar learning and student engagement within Omani vocational colleges. While previous research has shown the global benefits of game-based language learning, this work uniquely focuses on the Omani higher education context, addressing a gap in localized evidence. This focus aligns with Oman's national goals to integrate technology in education and enhance English proficiency. The positive improvements in both grammar skills and attitudes suggest DEG are culturally and pedagogically suitable tools for Omani classrooms. Using a mixed-methods approach, the study offers a comprehensive view of how DEG can foster sustained learning and motivation. The findings provide practical implications for curriculum designers, educators, and policymakers seeking to modernize English teaching in Oman, with future research encouraged to explore long-term effects and broader application.

Pedagogical Implications:

Integrating DEG into grammar teaching offers multiple benefits. They provide customized, interactive activities that address individual grammar challenges and offer real-time feedback for quick error correction. By making grammar practice enjoyable and low-pressure, DEG boost learners' confidence and motivation. They encourage varied and frequent practice across grammar structures while promoting critical thinking through problem-solving tasks. Additionally, DEG enhance students' digital skills, preparing them for technology-rich environments. The teacher's role evolves from error-corrector to facilitator of advanced grammar skills and contextual understanding. Overall, this study highlights DEG's potential to transform traditional grammar instruction in Oman, improving language proficiency and

learner engagement through technology-driven, student-centered methods.

Recommendation

For Teachers:

Educators should thoughtfully integrate Digital Educational Games (DEG) to make grammar instruction more interactive, focusing on key areas like sentence construction, article usage, and modal verbs. Choosing DEG tools that align with specific grammar topics is essential. Teachers must also guide students to use these games responsibly, emphasizing that DEG support learning but do not replace effort and understanding.

For Students:

Learners are encouraged to actively engage with DEG, using the feedback provided to improve their grammar skills. They should maintain a balanced approach by combining DEG with other methods such as writing and speaking practice. Exploring a variety of grammar games can address different learning needs, and reflecting on corrective feedback helps deepen understanding and performance.

For Researchers:

Future research should explore the long-term effects of DEG on grammar skills, motivation, and learner autonomy. Studies should also examine how DEG perform across diverse educational settings, proficiency levels, and cultural contexts, including underrepresented areas like Omani higher education. Investigating the emotional and cognitive impacts of DEG, such as frustration or confidence, will provide deeper insights into their role in grammar acquisition.

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أثر الألعاب التعليمية الالكترونية في تطوير مهارات قواعد اللغة الانجليزية لدى طلبة البرنامج التأسيسي في سلطنة عمان واتجاهاتهم

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الكلمات المفتاحية:
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اتجاهات الطلاب

في ظل التحديات المستمرة في تعليم القواعد اللغوية لدى طلاب البرنامج التأسيسي في سلطنة عُمان، تهدف هذه الدراسة إلى استكشاف دور الألعاب التعليمية الرقمية في تعزيز الكفاءة النحوية وزيادة تفاعل الطلاب في تعلم اللغة الإنجليزية. تسعى الدراسة إلى قياس أثر استخدام الألعاب التعليمية الرقمية (DEG) في تنمية مهارات القواعد النحوية واتجاهات الطلاب نحو تعلم القواعد لدى طلاب البرنامج التأسيسي في كلية صلالة المهنية بسلطنة عُمان.

اعتمدت الدراسة المنهج شبه التجريبي باستخدام اختبار قبلي وبعدي، حيث تم جمع البيانات من خلال اختبار لقياس مهارات القواعد ومقياس لقياس اتجاهات الطلاب. وعلى مدار ثمانية أسابيع، شارك الطلاب في أنشطة تعليمية باستخدام عدد من الألعاب التعليمية الرقمية مثل Bamboozle و Blooket و Grammaropolis و Grammar Smash و Wordwall، وذلك للتدريب على خمس مهارات نحوية أساسية من مقرر اللغة الإنجليزية للتعليم المهني، وهي: فهم أسئلة WH، واستخدام ضمائر الفاعل، وتكوين الجمل باستخدام الفعل to be بصيغته المثبتة والمنفية والاستفهامية، والتمييز بين أدوات التعريف (the) والنكرة (a, an)، واستخدام الأفعال الناقصة (modal verbs). أظهرت النتائج وجود تحسن دال إحصائيًا في أداء الطلاب في مهارات القواعد النحوية، إلى جانب تحسن ملحوظ في اتجاهاتهم نحو تعلم القواعد واستخدام الألعاب التعليمية الرقمية. وتوصي الدراسة بضرورة توفير برامج تدريب مستمرة للمعلمين لدمج الألعاب التعليمية الرقمية بفاعلية في تدريس القواعد، إضافة إلى إجراء المزيد من الدراسات حول تأثيرها في تنمية مهارات لغوية أخرى. وبشكل عام، تُبرز النتائج الإمكانات الكبيرة للألعاب التعليمية الرقمية بوصفها أدوات تعليمية فعالة ومحفزة لدعم تعليم القواعد في مؤسسات التعليم المهني.

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