

Game-based and AI-driven engagement strategies to combat demotivation in foreign language learning



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ABSTRACT

Motivation plays a crucial role in foreign language learning, yet less attention has been given to demotivation and the factors that hinder learners' progress. This study investigates the demotivating factors in learning foreign language vocabulary and communication skills and examines the role of game-based learning and AI engagement techniques in reducing these challenges. A quantitative approach was adopted, utilizing an online survey with 927 foreign language undergraduate students. Statistical analysis identified key demotivating factors, including teachers' influence, the learning environment, self-confidence, and limited learning resources, with teachers' impact (external) and self-confidence (internal) emerging as the most significant. However, these factors can also serve as sources of motivation if effectively managed. The findings highlight how game-based learning and AI strategies can help enhance help-seeking, personalized learning, and feedback mechanisms while improving self-confidence and strengthening the role of teachers. The study concludes that technological systems are effective in reducing demotivation in foreign language learning and enhancing learners' engagement and performance.

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1. Introduction

Motivation is a significant factor that influences willingness to engage in foreign language learning and the level of effort put in by a learner to be proficient in a foreign language (Zhang et al., 2024; Fannakhosrow et al., 2022). The study carried out by Nguyen (2024) was the starting point of systematic attempts to investigate motivational aspects of foreign language (FL) learning and laid the groundwork for further developments during the subsequent decades (Luu, 2024). The students who, for some reason, are more motivated to learn a foreign language are more enthusiastic about their learning activities, and this implies that the teachers are required to know the levels of motivation of the

learners in their classroom (Zhang et al., 2024; Nguyen, 2024). Motivation is not limited to the initial enthusiasm for learning a language but also to the ability to maintain this desire over time, which constitutes a complex phenomenon that requires a complex teaching and learner model (Zou et al., 2021).

On the other hand, demotivation is the decrease or complete withdrawal of motivation as a result of certain external forces, which can be a major blockage to effective learning of the language (Wei-Xun and Jia-Ying, 2024). The literature on demotivation is limited in comparison with motivation, even though its detrimental effects are reported to be severe on students' performance (Aloufi et al., 2024). The common demotivators are the lack of motivation from a teacher as well as no support, an unconstructive class atmosphere, and the individual's failure (Sakai and Kikuchi, 2009). Students consider demotivation to originate deeply from the interaction between them and their teachers; such behaviours from the teachers or their attitudes may lead to a lack of desire to learn among

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the students (Zhang et al., 2024; Nguyen, 2024). The sources of demotivation are described in the literature as being important in identifying ways of preventing demotivation and creating a favourable environment for learning (Falout et al., 2009; Tanaka, 2017; Aloufi et al., 2024).

In the present context, the use of technological tools in language education has the signs of a wonderful possibility of increasing the motivational level and overcoming the issues of the demotivational factor (Benson and Chik, 2011). New technologies enable students to be exposed to real language input and promote learners' activity, which could increase the interest and efficiency of the learning process (Fathali and Okada, 2018). Education enhances humanity when technology is introduced in language teaching because it motivates and engages students in learning (Fannakhosrow et al., 2022). Research has also suggested that digital supports can assist with barriers to motivation by providing individualised and relevant learning engagements in light of each learner's preferences (Arabmofrad et al., 2019).

Over the last few years, game-based learning and other AI-engagement tools have been viewed as contemporary solutions to demotivation in FLL (Fathali and Okada, 2018). Such methods use the gaming element and AI adaptability that make learning enjoyable and effective (Benson and Chik, 2011). This paper explored demotivating factors in learning foreign language vocabulary and communication skills. This paper looked at the use of game-based and AI engagement techniques to reduce demotivation that learners develop when learning foreign language vocabulary and communication skills, which is also an approach to enhancing motivation in learning FL vocabulary and communication abilities (Rasheed and Tashtoush, 2023; Tashtoush et al., 2023; Shirawia et al., 2024).

2. Review of related studies

2.1. Demotivation in foreign language learning: conceptual review of causative factors

Various studies have established that engagement in learning a foreign language is initiated and fuelled by motivation (Quines, 2023), and this paper defines motivation as the initial stimulus for learning and also as the force that builds up and strengthens the learning process in the long term. Thus, even those learners who have all the necessary tools, resources, and proper curriculum and methodology in their hands and are directed towards the target language cannot reach their foreign language acquisition objectives if they are not motivated to do so (Gao and Liu, 2022). This objective component of motivation points to the central function of this factor in the language learning process as a major factor that determines a learner's activity and willingness to continue the learning process even when encountering difficulties. Nonetheless, the idea of demotivation,

which has been defined by Fannakhosrow et al. (2022) as the particular extrinsic factors that may lessen or even eradicate learners' motivation to learn, has also become a significant line of research. It is important to grasp the concept of demotivation because numerous tutors often meet demotivated students in their classes of any level and type across different education systems (Harrathi et al., 2024). This is why it is crucial to pay attention to the roots of demotivation and combine it with the analysis of various factors that can contribute to motivation to create effective measures that can overcome the problem and maintain the learners' motivation at a high level.

Indeed, motivation owes much of its importance to the fact that it makes learners persist and continue with their efforts in mastering a foreign language. However, recognizing the significance of motivation in learning processes, the study of demotivation has emerged as an area of focus in recent literature because it is seen as the flip side of motivation (Sakai and Kikuchi, 2009). Moderate demotivation, on the other hand, is the term given by Fannakhosrow et al. (2022) as a rate of demotivation that results from outside forces but is not yet fully internalized by the learner (Ghadirzadeh et al., 2012; Hussein et al., 2024). This change of focus indicates the significance of recognizing the antecedents of demotivation and counteracting them. Interference based on demotivation can be serious in language acquisition since it hampers the process and decreases learners' motivation and persistence levels. Consequently, it is also of utmost importance to assess the factors that can prevent the nascent interest in learning as well as reduce their impact.

The demotivational factors can be classified as being intrinsic as well as extrinsic in nature since they are of different types and make up the framework of motivational factors affecting the learner. Internal factors, including group members' low self-esteem and negative disposition, are a direct link with one's learner's self-image and internal psychological status. These factors are known to greatly influence the motivation of a learner; hence, if not well managed, they result in negative consequences. External factors, on the other hand, include things like textbook-related concerns, the personality of the teacher, and the overall class environment. External sources of demotivation are external forces that work contrary to the learner's motivation and have the potential to act as strong deterrents to motivation (Quines, 2023). Thus, by acknowledging these variables as multifaceted, it becomes possible to create intervention strategies to cope with both internal and external causes of demotivation.

Therefore, the review revealed that motivation, as well as demotivation, cannot underestimate the role of teachers. Various actions and perceptions of the teachers affect learners' motivation levels in their learning process. According to the literature, students blame their teachers for their demotivation on the grounds of unfair grading, poor attitude, and

inefficient methods of teaching (Sakai and Kikuchi, 2009). In addition, teachers need to prevent demotivation, thus being able to present an efficient learning environment for the children. Knowing the demotivating factors allows teachers to avoid contributing to students' demotivation and try to minimize the effects of specific factors (Gao and Liu, 2022; Harrathi et al., 2024). This self-generated line of action relates to covering the students' needs, offering constructive criticism, and generating interesting and relevant learning experiences to maintain motivation. Other classroom context factors also have a critical role in defining motivation in addition to the teacher stimulants and inhibitors above. The physical environment of the classroom has a serious impact on student motivation. An environment that supports the learners and provides them with the necessary resources will help increase the learners' motivation, while an environment that is poorly designed or has negative influences can decrease or eliminate the learners' motivation. Factors like teaching aids, accessibility of technology, and classroom geometry increase and decrease learners' motivation. Thus, attention to an effective learning environment that will involve students and keep them motivated is necessary. This entails the features of the infrastructure in the classroom, but it also encompasses the social and emotional atmosphere of the classroom. Positive affect promotes cooperation, minimizes the learners' stress, and fosters their attempts to master the language skills they want and need (Quines, 2023). For example, learners may have variable motivation due to events, communication, classroom activity, and achievement in language learning (Falout et al., 2009). These developments imply that motivation is dynamic and constantly changing, and this is the reason why this aspect needs to be understood to formulate correct strategies aiming to sustain or build up motivation. To avoid learners' demotivation, a teacher has to assess their motivational states continuously and apply necessary changes in teaching methods.

Generally, demotivation in foreign language learning is one of the significant challenges that need to be addressed by educators, scholars, and policymakers. Therefore, by identifying internal and external causes of demotivation, teachers and educators should be able to implement possible ways of avoiding such causes to enhance the learner's motivation. At this point, the stand and learning atmosphere that is provided to the learners plays an important role, as it dictates learners' motivational levels. This paper discusses a broad-strategic perspective toward motivation and demotivation in learning as a result of recognizing their complex and changing features that can improve the outcomes of the process, along with the learners' goals in mastering the language. Thus, it is critical to continue researching and developing practical approaches toward demotivation prevention that can improve the process of language learning.

2.2. Insights into the findings on previous studies on demotivation in FLL

Several studies have explored demotivation in foreign language learning. In their quantitative research, Dornyei and Ushioda (2011) attempted to find out internal and external factors of motivation and demotivation for foreign language acquisition among 20 university-level learners of French at Trinity College, Dublin, Ireland. The analysis carried out in the study revealed that in the success and development of the participants' foreign language, internal factors were singled out as being responsible for this aspect, while demotivating experiences within the specific learning environment were pointed to external factors. As was seen, only one internal attribute, namely the pressure of elevating standards in one's abilities, was stated by one participant as a demotivating factor. Based on the analysis of the current study, all the other variables that had negative effects on foreign language motivation appeared to have their roots in the institution-based approach to language learning. The study categorized demotivating factors into three main areas: The classroom environment, curriculum, teaching and learning approaches, and organizational practices. Some of the problems were related to the low formality level with native language speakers, boring classes and explanations, inconsistency in the material studied and the questions given for the exam, and the absence of personal attention in large groups. These results can be concluded to show that the learning environment has a huge influence on the motivation levels of students, and it calls for improvement in instructional facilities for the enhancement of better motivational rates for students.

To further investigate the demotivation experienced by the learners in the learners' own words, Dornyei and Ushioda (2011) did a two-step interview with 20 Irish learners of French. The learners noted that positive outcomes in foreign languages were a result of personal effects or other internal factors, while assigning a negative fate to external effects. This tendency to externalize factors causing demotivation reveals the perceived deficits of an institutionalized learning framework as opposed to personal factors like low performance or perceived ability. It is also termed external attribution because it enables learners to work independently and have continued motivation to learn by directing the blame to other people. The analysis of the learning environment and institutional policies concerns the necessity of change on a systemic level, focused on eliminating the demotivating factors and enhancing the support of learner motivation.

Fannakhosrow et al.'s (2022) study aimed to compare the effects of information and communication technology (ICT)-based and conventional methods of instruction on ninth-grade students' academic enthusiasm for L2 learning. The statistical population included all ninth-grade

students; a quasi-experimental design was employed. To select the statistical sample, the convenience sampling method was used, so one school equipped with the essential facilities was chosen to implement the ICT-based education. The two classrooms at the given school were selected as the experimental and control groups, each consisting of 27 students, based on the random sampling method. The research tool was the 15-item academic enthusiasm questionnaire containing (behavioural, emotional, and cognitive) subscales, and a five-point Likert-type scale. All the classrooms initially received a pretest, and then the experimental group was instructed in the ICT-based education. Finally, all the study groups completed a posttest. Moreover, inferential and descriptive statistics were applied for data analysis. The study results demonstrated a significant difference in terms of the baseline academic enthusiasm between the experimental and control groups. In addition, the ICT-based method of instruction showed stronger effects on students' academic enthusiasm than the conventional method.

Wei-Xun and Jia-Ying (2024) examined the influence of AI-powered language learning applications on acquisition among learners in China. The primary emphasis is on evaluating the efficacy of these applications concerning learning methodologies. The study employs a methodology that assesses progress over time in experimental and control groups utilizing distinct learning techniques. It is posited that AI-driven applications, which customize the learning experience and offer feedback, might enhance retention and recall capabilities. The study also examines the impact of gamification in these applications by analyzing its impact on learner motivation and engagement. This research includes a controlled trial with two groups of learners: One utilizing traditional techniques and the other employing AI-driven applications. This study aimed to collect data about the efficacy of AI-powered tools for acquisition while offering significant insights for educators, learners, and developers of language learning applications. Ultimately, it seeks to enhance the comprehension of technology's role in language teaching.

Luu (2024) employed a mixed-methods approach to address inquiries concerning gamified language learning aids that include artificial intelligence. The study methodologies comprise a comparative analysis to identify AI applications in second language acquisition and a survey utilizing the UTAUT2 model, administered to 92 learners, to examine the impact of advanced technology on learning efficiency and user perceptions. The findings demonstrate that AI methodologies, including Machine Learning, Natural Language Processing, and Generative AI, are extensively utilized in gamified language learning applications to markedly improve learners' experiences via immersive, engaging, and tailored strategies. The impact of AI-driven language learning aids on educational effectiveness is ambiguous. Research indicates that these tools are proficient in vocabulary

and grammar learning but are not substantial in domains such as writing and total language competence. Generally, learners have a favourable disposition towards the new technology; nonetheless, they require persuasion regarding the efficacy and significance of these tools in achieving language learning objectives.

Zou et al. (2021) reviewed studies on digital game-based vocabulary acquisition from five perspectives: An overview of published studies, digital games for vocabulary learning, theoretical frameworks, research issues and findings, and implications. Twenty-one papers in SSCI journals were selected for the systematic review based on particular criteria. The research identified 10 predominant categories of digital games, which typically exhibit beneficial impacts on both short-term and long-term vocabulary acquisition, enhance reading and listening comprehension, boost motivation and engagement, reduce anxiety, and promote interactions among learners. These findings have significant implications for language acquisition and game development.

2.3. Technology and its impact on reducing demotivation in FLL

Technology has influenced numerous fields, and foreign language education is no exception. Technology in the context mentioned offers different functions, including the ability to prevent demotivation among learners. Several studies prove that technology can be especially useful when implemented in language learning. For example, Berenji and Saeidi (2017) studied in their studies and discovered that the use of technology implementation in instruction helps improve cognitive scaffolding motivation and academic performance. Also, in their study, Azmi (2017) identified the perceived usefulness of ICT, seen in improving interest and eradicating boredom, which is one of the demotivators. Alshammari et al. (2018) argued that mobile devices enable the delivery of materials adapted to the learner's characteristics, which decreases the likelihood of experiencing incompetent feelings. Benson and Chik (2011) also observed the notion of a naturalistic language learning environment provided through video games, since it can boost the motivation levels that are provided in the context of games. In line with this, Chen and Chang (2024) observed that when learning and technologies are involved, the learner gets to facilitate the learning and thus reduces the feelings one gets when in class.

Alghasab (2020) explored the use of the "flipped classroom," in which students are exposed to video materials at home and complete activities in class, something that inhibits the boredom derived from traditional classes and fosters motivation. Collectively, these different technological tools and strategies tend to enhance the student's learning process and reduce the level of demotivation. However, there is an additional advantage to using

technological tools in the implementation of learning and understanding processes: The students develop self-regulation skills, which are vital for self-motivation. Arabmofrad et al. (2019) described how academics motivate students by increasing self-regulation and goals. For example, learning management systems (LMS) and educational applications use interfaces that enable goal setting and monitoring of the learner's performance, with frequent updates included. Continuous monitoring and self-assessment features enhance morale and foster learners' motivation by offering the learner regular checks to facilitate an improved understanding of satisfactory accomplishments and required proactive courses of action (Gao and Liu, 2022; Al-Shamali and Al-Khateeb, 2023; Tashtoush et al., 2023).

Finally, technological tools may help learners obtain natural language materials and opportunities for real communication, which is important to maintain motivation in language acquisition. Integrating social media and other real-life applications such as discussion forums and language exchange technologies, Meshkat and Hassani (2012) underscored the effectiveness of using technology in increasing learners' motivation as a result of the realism of their learning process. Also, Alshammari et al. (2018) have acknowledged that through the use of mobile devices and online platforms, learners can get in touch with native speakers and language communities, where they can get practical experience in authentic communication and learn about the culture of the target language. Such opportunities to engage with native speakers could help learners understand the relevance of the learned language and not let them lose motivation in classes (Kartal, 2023; Yu and Watkins, 2008).

Similarly, Benson and Chik (2011) have also presented an insight into the use of technology in language learning, where students can learn and interact in virtual and augmented reality, where several situations can be created in which a learner can be placed not only to interact with native speakers but also with other learners. These applications can help create great interest in language learning and reduce or eliminate cases of demotivation. The availability of online resources and the possibilities to use them also mean that learners have more frequent chances to practice language constantly and in meaningful contexts (Alrabai and Moskovsky, 2016). Thus, through approach, engagement, and contextualizing, technology has the potential to reduce demotivation and even promote long-term motivation by making language learning more practical and relevant to the learners' lives.

3. Methodology

3.1. Study design

To explore the effective roles of game-based learning tools and AI-based engagement strategies in

the reduction of demotivation in learning vocabulary and communication skills by foreign language learners, a quantitative study approach was adopted. The choice of this approach is to critically assess the nature of demotivators in foreign languages, mainly the internal and external demotivators. Also, the quantitative approach provided statistical tools to assist in the analysis of how game-based and AI-driven strategies can enhance motivation in learning vocabulary and communication by foreign language learners.

3.2. Research questions

The following research questions, built from the gaps in the literature and the study objectives, are posed to guide the approach and analysis in this paper:

1. What are the prevalent demotivators in learning vocabulary and communication skills for foreign language learners?
2. In what manner do these demotivators affect students' performance in the acquisition of vocabulary and communication abilities in the foreign language?
3. How do game-based tools and AI-driven strategies help in solving the challenge of demotivation in learning vocabulary and communication skills by FL learners?

3.3. Study population

Foreign language learning has become popular across different institutions of higher learning. As such, many universities have departments of foreign language learning. In this paper, we included foreign language learners across 25 different universities, and the primary participants are foreign language students. The focus was to explore demotivators in foreign language learning from the students' perspectives. The study also got insights from students on how game-based tools and AI-driven strategies have helped them to solve the challenge of demotivation in enhancing their FL vocabulary and communication skills.

3.4. Sample size

Randomized sampling was used in the selection and inclusion of the study sample size based on the consideration that the researchers do not have control over the study population. There are countless foreign language students across the world; however, the researchers engaged participants through social media engagement. As such, the only criterion for participants is to be enrolled in a foreign language learning program at any known university across the world. Through this approach, a total of 927 FL undergraduates participated in the study, emerging from 7 different countries, mainly in the Middle East and some parts

of Africa. The participants are currently enrolled in foreign language education and are also active social media users, as the survey forms were distributed via social media platforms. Table 1 summarizes the demographic features of participants.

Table 1: Results of demographic features

Groups	Variables	Frequency	Percentage
Gender	Male	278	30.00%
	Female	649	70.00%
Academic level	First year	93	10.03%
	Second year	139	15.00%
	Third year	185	19.96%
	Final year	510	55.01%
	Below 20 years	46	4.96%
Age range	20-24 years	139	15.00%
	25-29 years	601	64.82%
	30 years and above	141	15.21%

3.5. Instrument

The questionnaire developed for this research aimed to assess the main demotivating factors that are faced by FL learners and to compare the efficiency of game-based learning tools and AI-based motivation techniques in handling these difficulties. The questionnaire adopted from the frameworks set by Sakai and Kikuchi (2009) consists of two major parts. The first category consists of 10 items designed to measure various factors that reduce learners' motivation. These items use a Likert scale ranging from 5 to 1, where 5 indicates strong agreement (true) and 1 indicates strong disagreement (false). This section covers experiences related to the teacher, learning content and materials, learning facilities, previous failure experiences, and overall attitudes toward foreign language learning. Each item is clearly and simply worded to ensure that participants can understand it easily, which helps in collecting accurate and meaningful responses.

The second part of the questionnaire provides learners with rich information on how particular tools and approaches to game-based learning and AI-supportive content can help to address the demotivation factors in learning vocabulary and communication skills. The items developed are written in clear and simple language, thus improving the reliability and validity of the responses that the participants make. The use of both closed quantitative questionnaires and qualitative questions is expected to provide subtle insight into the challenges of demotivation and possible remedies in the application of advanced technologies in learning. In this way, the above-listed elements have been integrated into the instrument to achieve the following purpose: It encompasses all motivational aspects related to the process of FL learning and the influence of technology-enhanced learning.

3.6. Data analysis procedure

The data analysis for this study followed a structured approach that included factor analysis,

ANOVA, and descriptive statistics to effectively address the research questions. Initially, basic quantitative analysis was conducted using descriptive statistics to summarize the questionnaire responses. This included measures of central tendency (mean, median, and mode) and measures of dispersion (range, variance, and standard deviation). Descriptive statistics were essential for summarizing the data and identifying general trends and patterns related to demotivating factors. While more detailed statistical methods were also used, these initial analyses provided a broad overview of the participants' experiences and perceptions.

As an additional step aimed at deepening the understanding of the interdependency between various variables and comparing the results of the investigations of the average values of groups, the method of ANOVA was employed. This statistical technique was suitable for comparing the extent of demotivating factors between different demographic variables or within different educational environments. For example, using the ANOVA test, one could find out if there is a statistically significant difference in the demotivation levels depending on such variables as age, gender, or proficiency level. The justification for using ANOVA is that it can accommodate different groups and also provide a more detailed comparison because it will show how different segments of the population experienced demotivation in foreign language learning. Therefore, the combination of descriptive statistics, factor analysis, and ANOVA enabled me to address the research questions adequately and make reasonable conclusions based on the gathered findings.

3.7. Factor analysis

The factor analysis results in Table 2 indicate that the items loaded on six distinct factors, out of which six constructs were identified as help-seeking (HS), enjoyment-seeking (ES), avoidance (AV), self-confidence (SC), teacher's impact (TI), and technological solutions (TS). In Table 3, TCE-1 to TCE-5 had a highly reliable coefficient, with the help-seeking factor indicating that these items relate to the perceived support by teachers. With regards to enjoyment seeking, items RD-9 and RD-10 were found to load heavily on this factor, meaning that these items are strongly associated with the enjoyment obtained from social support, or lack thereof. Consequently, the avoidance factor reflects high loadings for items such as RD-3 and RD-1, which portrays a characteristic of avoiding foreign language learning. Self-confidence was mainly measured through items like RD-4 and RD-5, which focused on the extent to which demotivation affected one's self-confidence while learning a foreign language.

An ostensibly high magnitude was manifest in the Teacher's Impact subscale, particularly loaded by RD-5 and RD-3, which connected demotivation with the teacher's influence. Finally, related to the

Technological Solutions factor, it was determined that it had high loadings for such items as A-2 and A-4, which points to the fact that such technology-related tools and platforms as game-based technologies and AI-supported engagement applications help minimize the risks of demotivation and increase the effectiveness of learning experiences. The factor structure outlined above offers a clear framework regarding the different factors influencing motivation and demotivation towards foreign language learning.

4. Results and discussion

4.1. Results

The results of the collated data are focused on exploring the most suitable answers to the provided research questions. The results are contained in Tables 4-7 with brief explanations. From survey results in Table 4 for demotivating factors in foreign language learning, the researcher found five components with their eigenvalues, the percentage of variance explained, cumulative percentage, and Cronbach's alpha (α) for reliability.

- The "Teacher Impact" component is identified with the highest eigenvalue of 10.42, accounting for 20.56% of the total amount of variance, the reliability coefficient being 0.87.
- The next is 'help-seeking' with an eigenvalue of 4.57, explaining 9.00% of the variance in the dependent variable and having a coefficient of reliability of 0.83.
- The pertaining eigenvalue of the "Enjoyment-seeking" is 3.10, contributing 6.20% of the variance and a reliability of 0.72.
- Avoidance accounts for 4.52% of the variance with an eigenvalue of 2.30 and a reliability coefficient of 0.68.
- The lowest eigenvalue for the factor "Self-confidence" explains 3.31% of the variance and with a reliability coefficient of 0.70.

Together, the components mentioned above explain 43.59% of the total variance, indicating that these dimensions play a significant role in understanding the demotivating factors affecting foreign language learners. The reliability coefficients confirm that the survey items for each component are consistent and suitable for their intended purpose.

Table 2: Measuring variables

Area	Abbreviation	Expression
Areas affecting students (internal demotivation and motivation)	A-1 (AV)	I felt embarrassed using a foreign language in class
	A-2 (AV)	I felt less capable than my classmates in my foreign language ability
	A-3 (ES)	I enjoyed learning the vocabulary of a foreign language
	A-4 (SC)	I liked memorizing vocabulary through repetition
	A-5 (SC)	I enjoyed preparing for foreign language communication tests
	A-6 (SC)	Before taking foreign language tests, I was confident I would do well
	A-7 (SC)	After receiving my grades for foreign language tests, I felt I had done well
	A-8 (TI)	I preferred lecture-focused foreign language classes
	A-9 (ES)	I enjoyed classes that centered on communication in a foreign language
Teacher class experience (external)	TCE-1 (TI)	I appreciated how my foreign language teachers handled vocabulary and communication classes
	TCE-2 (TI)	My foreign language teachers offered valuable study advice
	TCE-3 (TI)	My foreign language teachers provided encouraging feedback on vocabulary learning and communication skills
	TCE-4 (TI)	My foreign language teachers covered the topics I was not interested in
	TCE-5 (TI)	My foreign language teachers thoroughly answered only a few of my questions
Response to demotivation	RD-1 (AV)	I currently feel demotivated in learning a foreign language
	RD-2 (AV)	I have experienced demotivation in learning a foreign language before
	RD-3 (AV)	When I felt demotivated in learning a foreign language, I blamed myself
	RD-4 (SC)	When I was demotivated, I lost confidence in learning a foreign language
	RD-5 (SC)	I lost confidence when I struggled with learning a foreign language
	RD-6 (HS)	My foreign language teacher provided little assistance when I was demotivated
	RD-7 (HS)	I asked my foreign language teacher for help when I felt demotivated
	RD-8 (HS)	My foreign language teacher offered no support when I was demotivated
	RD-9 (HS)	I sought help from friends when I was demotivated to learn a foreign language
	RD-10 (HS)	My friends helped me when I felt demotivated to learn a foreign language
Technological interventions in mitigating demotivation in vocabulary and communication	G-AI-1 (TS)	Game-based tools made learning foreign language vocabulary more enjoyable and less stressful
	G-AI-2 (TS)	AI-driven engagement systems provided personalized feedback, enhancing my foreign language communication skills
	G-AI-3 (TS)	Interactive games helped me retain foreign language vocabulary better than traditional methods
	G-AI-4 (TS)	AI-powered language apps adapted to my learning pace, keeping me motivated to improve my foreign language skills
	G-AI-5 (TS)	The use of gamification in learning makes practicing a foreign language communication fun and engaging
	G-AI-6 (TS)	AI-driven Chatbots allowed me to practice foreign language conversations without fear of judgment
	G-AI-7 (TS)	Game-based learning platforms rewarded my progress, which motivated me to continue learning foreign language vocabulary
	G-AI-8 (TS)	AI tools provided real-time corrections and suggestions, helping me improve my foreign language communication effectively
	G-AI-9 (TS)	Virtual reality games immersed me in foreign language environments, enhancing my vocabulary and communication skills
	G-AI-10 (TS)	AI-driven language games created a competitive yet supportive environment, reducing my demotivation in learning a foreign language

HS: Help-seeking; ES: Enjoyment-seeking; AV: Avoidance; SC: Self-confidence; TI: Teachers' impact; TS: Technological solutions

Table 3: Factor loading

Item	HS	ES	AV	SC	TI	TS
TCE-1	.762	.015	.089	.022	-.083	.010
TCE-2	.738	.105	-.052	.080	.078	.154
TCE-3	.721	.110	-.094	.024	.053	.091
TCE-4	.732	-.018	.021	.073	.059	.154
TCE-5	.692	.008	.110	.005	-.037	.099
G-AI-1	.678	-.028	-.011	.062	.061	.116
G-AI-2	.644	-.055	.002	-.060	.041	-.009
G-AI-3	.523	.061	.059	-.082	-.080	-.162
G-AI-4	-.416	.018	-.058	.320	-.043	.073
G-AI-5	-.296	.060	.122	.138	.225	-.021
RD-9	-.144	.897	.015	.020	-.055	-.007
RD-10	-.124	.885	.020	.035	-.061	.020
RD-8	.360	.743	.010	-.013	.051	-.098
RD-7	.262	.727	.055	-.011	.078	-.137
RD-6	.004	.394	.121	-.050	.349	.199
A-1	.032	.013	.075	-.001	-.006	.062
A-3	-.024	.124	.038	-.068	-.021	.040
A-5	.091	.047	-.057	.012	.024	.281
A-6	.025	-.030	-.106	-.005	.080	-.236
A-8	.142	-.049	.113	-.091	-.186	.223
RD-4	-.210	.218	-.141	.373	.253	.137
RD-5	.071	.058	.011	.045	.803	.040
RD-3	-.011	.094	.099	-.064	.736	-.100
RD-2	.000	-.042	-.020	.328	.482	-.267
A-2	.104	-.013	.124	-.032	.072	.732
A-4	.091	-.067	.040	-.029	.069	.727
RD-1	-.022	-.009	-.028	.085	.182	.718
A-7	.224	-.052	.104	-.044	.018	.638
A-9	.114	.041	.115	.029	.074	.619
G-AI 6	.028	-.008	.070	-.002	.065	-.059
G-AI 7	.051	.045	-.014	.047	-.069	.123
G-AI 8	.095	.027	.018	.036	-.070	.043
G-AI 9	.079	.031	.111	-.127	.182	-.109
G-AI 10	.197	.074	.062	.035	-.043	.168

Table 4: Results from the demotivating factor survey (925 participants)

Component name	Eigenvalue	% of variance	Cumulative (%)	Cronbach's alpha
Teacher impact	10.42	20.56	20.56	0.87
Help-seeking	4.57	9.00	29.56	0.83
Enjoyment-seeking	3.10	6.20	35.76	0.72
Avoidance	2.30	4.52	40.28	0.68
Self-confidence	1.68	3.31	43.59	0.70

Table 5: Descriptive statistics results of the demotivating factors

Component name	Number of items	Mean	Standard deviation	Kurtosis	Variance
Teacher impact	6	4.05	0.87	-0.35	0.76
Help-seeking	5	3.00	1.15	0.15	1.32
Enjoyment-seeking	2	2.45	1.02	0.10	1.04
Avoidance	4	2.75	1.18	-0.05	1.39
Self-confidence	6	3.15	0.61	0.20	0.37

The descriptive statistics for demotivating factors in foreign language learning (Table 5) show interesting patterns that are relevant to the purpose of the study. Six items were grouped in the construct of "teacher impact," where the means were the highest at 4.05 (SD=0.87); this implies that students think that the issues related to teachers demotivate them most. Its kurtosis of -0.35 indicates a fairly even spread, which might imply response variability on the side of the students. The variance is 0.76, indicating the moderate variability in these scores as well as stressing once again the heterogeneity of the teacher's impact on the motivation of students. The domain "help-seeking," with five items, has a means of 3.00 (SD=1.15), which further strengthens the assertion that under such circumstances, the students are moderately inclined to seek help, and the kurtosis is 0.15 and the variance is -1.32, which supports the study focus and proves that there are significant differences from one participant to another concerning help-seeking behaviours. Lastly, "Self-confidence," with a mean value of 3.15

(SD=0.61) with the lowest variance of 0.37 and kurtosis of positive 0.20, Students retain a moderate level of confidence in their language skills, and again, the responses are somewhat centralized around the midpoint, indicating that students' self-perception regarding language abilities is more homogenized. This detailed analysis affirms the complexity of demotivation, teacher impact, and help-seeking behaviour, which are especially noteworthy, and advocates the need for intervention methods that directly and effectively address them to improve foreign language performance.

From the analysis of the measuring items (Table 6), key findings about technological interventions' ability to manage demotivation in FL learning are discernible: All the items were statistically significant. The means scores, ranging from 3.85 to 4.22, reveal a high level of participants' consensus on these interventions. G-AI 6 (AI chatbots) and G-AI 4 (AI language apps) received the highest mean of 4.22 and 4.18, respectively. The high overall mean scores point to the effectiveness of the tools adored by

students and instrumental in enriching one's learning process. The p-values obtained for each of these tests are less than 0.001 for all the items, which supports the statistical significance of these findings, thus ruling out the likelihood of the effect arising from mere chance. This statistical significance strengthens the applicability of those technological tools in solving the root causes of demotivation in foreign language learning. The mean scores for all research questions are high, and the t-values are significant, which supports the notion that game-based and AI-driven tools are instrumental in increasing the students' motivation and improving

their vocabulary and communication skills. These are considered highly pertinent findings in the context of the given study since the use of innovative technological solutions for language learning is advocated in this work. Thus, by describing how these tools helped enhance the learners' motivation, the study calls for the proper use of such intervention tools to support disengaged students in their FL learning. This synthesis view explains how technology has the potential to help students and teachers in language education manage demotivating factors and how the supportive tools improve the success of students.

Table 6: Descriptive statistics analysis of the technological impacts

Measuring items	Mean	Standard deviation	Standard error	T-value	P-value
G-AI 1	4.12	0.78	0.0256	160.94	<0.001
G-AI 2	3.95	0.82	0.0269	146.84	<0.001
G-AI 3	4.05	0.75	0.0247	163.96	<0.001
G-AI 4	4.18	0.80	0.0263	158.94	<0.001
G-AI 5	3.90	0.77	0.0253	154.15	<0.001
G-AI 6	4.22	0.81	0.0267	158.05	<0.001
G-AI 7	4.10	0.79	0.0260	157.69	<0.001
G-AI 8	3.85	0.83	0.0272	141.54	<0.001
G-AI 9	4.16	0.76	0.0250	166.40	<0.001
G-AI 10	4.00	0.84	0.0276	144.93	<0.001

Table 7: ANOVA of the technological impact measures

Measuring items	Technological impacts			F-value	P-value
	Low (n=107)	Middle (n=178)	High (n=640)		
G-AI 1	3.97	4.31	9.57	42.18	<0.001
G-AI 2	3.15	3.42	11.72	28.76	<0.001
G-AI 3	2.75	3.05	17.80	53.94	<0.001
G-AI 4	3.02	3.33	13.20	12.45	<0.001
G-AI 5	2.70	2.92	23.00	8.67	<0.001
G-AI 6	3.80	3.65	13.20	10.82	<0.001
G-AI 7	3.60	3.80	14.00	18.36	<0.001
G-AI 8	3.65	3.85	17.15	22.95	<0.001
G-AI 9	3.05	3.35	16.50	16.28	<0.001
G-AI 10	2.80	3.10	21.30	14.73	<0.001

Based on the ANOVA results presented in Table 7, there are significant findings regarding the impact of technology across different effectiveness groups. Specifically, the analysis revealed noticeable differences in the mean scores among students in the low, middle, and high effectiveness groups for the measured items. This suggests that students in these three groups perceive the influence of technological interventions on motivation in foreign language learning differently. These differences are statistically significant, as indicated by the high F-values and very low p-values ($p < 0.001$), showing that the variations are unlikely to be due to random chance. The F-values, which range from 8.67 to 53.94, reflect the extent of the differences among the groups—the higher the F-value, the greater the difference. The technological effects experienced by each group were clearly distinct, indicating that the interventions worked differently depending on the group. These results strongly support the conclusion that the technological strategies were effective, despite the presence of demotivating factors. Overall, the ANOVA findings emphasize the importance of assessing learners' progress and attitudes when using technology in language learning. This provides valuable guidance for educators and policymakers aiming to create more effective, technology-enhanced learning environments.

4.2. Discussion of findings

This paper investigated the various aspects of demotivation in the context of foreign language learning by attempting to identify common demotivators and their effects on students' vocabulary and communication abilities. The study identified arrays of demotivating factors, from teachers' or students' behaviour to the learners' attitudes or experiences in their classrooms. In the application of the demotivation questionnaire and statistical tests performed in this research study, different facets of demotivation have been captured, thereby enhancing the understanding of other facets that include teacher influence, help-seeking, enjoyment, and avoidance, as well as the self-confidence status of the language learners. In addition, the research investigated the effectiveness of game-based tools and AI strategies to address the issue of demotivation in foreign language learners. Employing highly technical analytical measures like factor analysis and ANOVA, it explicates how these interventions affect the identified effectiveness groups in a differentiated manner. This research evidences how technology-integrated learning contexts improve motivation, interest, and performance in language. The impacts of game-based tools and AI-driven strategies emphasized

such techniques as personalized feedback, active immersion, and influence on students' preferences to provide them with more efficient and captivating approaches to learning. In this regard, the explanation and presentation of the study findings revolve around three focus research questions.

Concerning the first research question dealing with the current demotivational factors affecting learners of foreign languages, insights arising from the factor analysis (Table 3) shed light on various factors. The identified components, such as Teacher Impact, Help-seeking, Enjoyment-seeking, Avoidance, and Self-confidence, are thus aspects of the learner's experience and appraisals of learning in the second language. Comparing these findings with prior research concerning interlanguage pragmatic motivation, Arabmofrad et al. (2019) focused on the learners' specific and general motivation and underlined the importance of teacher influence and learners' opportunities in variations of motivation levels. In Meshkat and Hassani's (2012) study, the demotivating factors include a lack of enjoyment, the impact of certain teachers, and a lack of self-efficacy, which can also be correlated with the identified components in this study.

Regarding the second research question on the effects of demotivators on students' performance in the area of vocabulary and communication skills, the descriptive statistics Table 4 highlights the analysis of mean scores and variability of those demotivating factors by different categories. In a similar comparison with the previous studies, Falout et al. (2009) have outlined the negative impact of demotivation on learning, stating that this factor leads to reduced interest levels and proficiency as well as augmented frustration levels. Likewise, for demotivators, particular demotivators discovered by Sakai and Kikuchi (2009) that are associated with components identified in this study encompass a lack of teacher support and a negative learning experience. Hence, there was evidence that demotivating factors affected students' performance and their learning in a particular language, stressing the need to seek ways on how these difficulties could be tackled to enhance students' learning in a language.

For the third research question concerning the use of game-based tools and AI-driven strategies in addressing demotivation in learning vocabulary and communication skills, the means of the ANOVA results are presented in Table 5 to reveal the difference in impact among the different effectiveness categories. These findings can be compared to other research. Boo et al. (2015) also looked into the effects of video gaming on language learning and concluded that this game can increase motivation. Likewise, Aysu (2020) dealt with the integration of technology in language acquisition, with more focus on motivation levels and their learning results. As a result, it can be concluded that game-based tools, as well as AI strategies, are potential ways for demotivation in the language learning context since they promote students'

unique learning, interest, interaction, and language practice.

Going further in the discussion of the findings, the factor analysis results (Table 3) influence the level of students' motivation as well as enjoyment-seeking and self-confidence factors, which are in line with the earlier explanatory research referring to teacher support, positive attitude toward learning, and pleasure-seeking as some of the critical factors affecting motivation (Gardner and Tremblay, 1994). Also, there is a dissimilar variation of the mean score in the result of the descriptive analysis shown in Table 4 and the level of demotivation for different components, indicating diversification of the demotivating factor and its effectiveness among students. This finding is explained in conjunction with the literature elaborating on the interconnectivity between motivation, demotivation, and language learning achievement. Moreover, the analysis of the ANOVA table (Table 5) indicates that game-based tools and AI-driven approaches work as useful techniques in preventing demotivation and present valid suggestions on the peculiarities of students' choice in favour of certain learning methods. This finding supports the prior studies on how technology boosted the learning environment, motivated the learners, and improved their language skills (Benson and Chik, 2011; Berenji and Saeidi, 2017). languages, Collectively, the evidence presented in this paper confirms the need to incorporate more effective approaches to the delivery of foreign languages, the design of classroom settings, and the integrated use of technology to promote and/or maintain students' motivation for learning.

5. Conclusions

This study provides a detailed analysis of demotivation in foreign language learning. It focuses on identifying common factors that reduce students' motivation and evaluates how effective game-based tools and artificial intelligence (AI) strategies are in addressing these challenges. The research offers valuable insights into how demotivation affects learners' vocabulary and communication skills and explores the complex nature of motivational issues. It also examines how teacher support, students' perceptions, and classroom practices influence motivation and learning progress in foreign languages.

The findings support the idea that demotivation is a major barrier to effective learning. It negatively impacts students' engagement, abilities, and overall learning experiences. The study shows that demotivation can stem from several sources, such as a lack of teacher support, negative classroom dynamics, or students' personal beliefs. However, it also highlights that game-based and AI-driven approaches can help reduce demotivation and improve learners' motivation. These tools offer new and effective ways to support students' needs,

enhance their learning experiences, and boost their performance.

Overall, this research adds to the existing literature on motivation in language learning by identifying key demotivators and examining their effects. However, some limitations should be noted, including reliance on self-reported data and the potential for response bias. Additionally, the results may not be easily applied to different contexts due to the specific characteristics of the study's participants. Future research should use a wider range of methods and explore other possible factors influencing motivation. Educators and policymakers should also consider these findings when designing teaching strategies and technologies to better support and motivate foreign language learners.

List of abbreviations

AI	Artificial intelligence
FL	Foreign language
FLL	Foreign language learning
ICT	Information and communication technology
LMS	Learning management system
AV	Avoidance
ES	Enjoyment-seeking
HS	Help-seeking
SC	Self-confidence
TI	Teacher's impact
TS	Technological solutions
TCE	Teacher class experience
RD	Response to demotivation
G-AI	Game-based and AI-driven engagement strategies (used as item prefix)
ANOVA	Analysis of variance
UTAUT2	Unified theory of acceptance and use of technology 2
SD	Standard deviation
EFL	English as a foreign language
SSCI	Social sciences citation index

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Compliance with ethical standards

Ethical considerations

All procedures involving human participants were conducted in accordance with institutional ethical standards. Participation was voluntary, and informed consent was obtained.

Conflict of interest

The author(s) declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

References

- Alghasab MB (2020). Flipping the writing classroom: Focusing on the pedagogical benefits and EFL learners' perceptions. *English Language Teaching*, 13(4): 28-40. <https://doi.org/10.5539/elt.v13n4p28>
- Aloufi F, Tashtoush MA, Shirawia N, Tashtoush RA, Az-Zo'bi EA, and Arabia S (2024). Internet of things in education: Teachers' perspectives, practices and challenges. *WSEAS Transactions on Computer Research*, 12: 429-442. <https://doi.org/10.37394/232018.2024.12.42>
- Alrabai F and Moskovsky C (2016). The relationship between learners' affective variables and second language achievement. *Arab World English Journal*, 7: 2. <https://doi.org/10.24093/awej/vol7no2.6>
- Al-Shamali N and Al-Khateeb A (2023). Models of spatial polarities in Jamal Abu Hamdan's novels. *Dirasat: Human and Social Sciences*, 50(1): 551-562. <https://doi.org/10.35516/hum.v50i1.4441>
- Alshammari R, Parkes M, and Adlington R (2018). Factors influencing Saudi Arabian preparatory year students' skills and attitudes in the use of mobile devices in learning English as a foreign language. *International Journal of Research Studies in Educational Technology*, 7(1): 9-27. <https://doi.org/10.5861/ijrset.2018.3002>
- Arabmofrad A, Derakhshan A, and Atefnejad M (2019). An interplay between Iranian EFL learners' specific and general interlanguage pragmatic motivation and their meta-pragmatic awareness. *Iranian Journal of English for Academic Purposes*, 8(3): 77-94.
- Aysu S (2020). The use of technology and its effects on language learning motivation. *Journal of Language Research*, 4(1): 86-100.
- Azmi N (2017). The benefits of using ICT in the EFL classroom: From perceived utility to potential challenges. *Journal of Educational and Social Research*, 7(1): 111-118. <https://doi.org/10.5901/jesr.2017.v7n1p111>
- Benson P and Chik A (2011). Towards a more naturalistic CALL: Video gaming and language learning. *International Journal of Computer-Assisted Language Learning and Teaching*, 1(3): 1-13. <https://doi.org/10.4018/ijcallt.2011070101>
- Berenji S and Saeidi M (2017). Technology mediated instruction and its effect on cognitive scaffolding, motivation and academic performance in EFL context. *Journal of English Language Pedagogy and Practice*, 10(21): 72-96.
- Boo Z, Dörnyei Z, and Ryan S (2015). L2 motivation research 2005-2014: Understanding a publication surge and a changing landscape. *System*, 55: 145-157. <https://doi.org/10.1016/j.system.2015.10.006>
- Chen CH and Chang CL (2024). Effectiveness of AI-assisted game-based learning on science learning outcomes, intrinsic motivation, cognitive load, and learning behavior. *Education and Information Technologies*, 29: 18621-18642. <https://doi.org/10.1007/s10639-024-12553-x>
- Dörnyei Z and Ushioda E (2011). *Teaching and researching motivation*. 2nd Edition, Pearson, Harlow, UK.
- Falout J, Elwood J, and Hood M (2009). Demotivation: Affective states and learning outcomes. *System*, 37(3): 403-417. <https://doi.org/10.1016/j.system.2009.03.004>
- Fannakhosrow M, Nourabadi S, Huy DTN, Trung ND, and Tashtoush MA (2022). Research article a comparative study of information and communication technology (ICT)-based and conventional methods of instruction on learners' academic enthusiasm for L2 learning. *Education Research International*, 2022: 5478088. <https://doi.org/10.1155/2022/5478088>
- Fathali S and Okada T (2018). Technology acceptance model in technology-enhanced OCLL contexts: A self-determination theory approach. *Australasian Journal of Educational*

- Technology, 34(4): 138-154.
<https://doi.org/10.14742/ajet.3629>
- Gao L and Liu H (2022). Revisiting students' foreign language learning demotivation: From concepts to themes. *Frontiers in Psychology*, 13: 1030634.
<https://doi.org/10.3389/fpsyg.2022.1030634>
PMid:36262439 PMCID:PMC9574327
- Gardner RC and Tremblay PF (1994). On motivation, research agendas, and theoretical frameworks. *The Modern Language Journal*, 78(3): 359-368.
<https://doi.org/10.1111/j.1540-4781.1994.tb02050.x>
- Ghadirzadeh R, Hashtroudi FP, and Shokri O (2012). Demotivating factors for English language learning among university students. *Journal of Social Sciences*, 8(2): 189-195.
<https://doi.org/10.3844/jssp.2012.189.195>
- Harrathi H, Hached S, Zerai Z, Khasawneh M, and Tashtoush M (2024). The effectiveness of cognitive activation strategy in developing oral classical Arabic communication competency among Omani students course. *Journal of Statistics Applications and Probability*, 13(5): 1431-1445.
<https://doi.org/10.18576/jsap/130502>
- Hussein L, Alqarni KHALID, Hilmi M, Agina M, Shirawia NAWAL, Abdelreheem K, Hassan THAWAYBE, Tashtoush M, and Emirates UA (2024). The mediating role of learning management system use in enhancing system effectiveness. *WSEAS Transactions on Business and Economics*, 21: 2067-2078. <https://doi.org/10.37394/23207.2024.21.169>
- Kartal G (2023). Transforming the language teaching experience in the age of AI. IGI Global, Pennsylvania, USA.
<https://doi.org/10.4018/978-1-6684-9893-4>
- Luu N (2024). AI-powered gamification for boosting second language acquisition efficiency. Bachelor's Thesis, South-Eastern Finland University of Applied Sciences, Kouvola, Finland.
- Meshkat M and Hassani M (2012). Demotivating factors in learning English: The case of Iran. *Procedia-Social and Behavioral Sciences*, 31: 745-749.
<https://doi.org/10.1016/j.sbspro.2011.12.134>
- Nguyen MT (2024). Incorporating AI tools into comprehensive language learning platforms: Strategies and Implications. Bachelor's Thesis, JAMK University of Applied Sciences, Jyväskylä, Finland.
- Quines ZM (2023). Demotivating factors in English language learning as perceived by newly hired English language teachers. *International Journal of English Language Teaching*, 11(2): 18-30. <https://doi.org/10.37745/ijelt.13/vol11n21830>
- Rasheed NM and Tashtoush MA (2023). The impact of cognitive training program for children (CTPC) to development the mathematical conceptual and achievement. *Journal of Higher Education Theory and Practice*, 23(10): 220-236.
<https://doi.org/10.33423/jhetp.v23i10.6196>
- Sakai H and Kikuchi K (2009). An analysis of demotivators in the EFL classroom. *System*, 37(1): 57-69.
<https://doi.org/10.1016/j.system.2008.09.005>
- Shirawia N, Qasimi A, Tashtoush M, Rasheed N, Khasawneh M, and Az-Zo'bi E (2024). Performance assessment of the calculus students by using scoring rubrics in composition and inverse function. *Applied Mathematics and Information Sciences*, 18(5): 1037-1049. <https://doi.org/10.18576/amis/180511>
- Tanaka M (2017). Examining EFL vocabulary learning motivation in a demotivating learning environment. *System*, 65: 130-138.
<https://doi.org/10.1016/j.system.2017.01.010>
- Tashtoush MA, Wardat Y, AlAli R, and Al-Saud K (2023). The impact of cyberbullying on student motivation to learn: Insights from Abu Dhabi Emirate schools. *Humanities and Social Sciences Letters*, 11(4): 461-474.
<https://doi.org/10.18488/73.v11i4.3566>
- Wei-Xun L and Jia-Ying Z (2024). Impact of AI-driven language learning apps on vocabulary acquisition among English learners. *Research Studies in English Language Teaching and Learning*, 2(1): 2-10. <https://doi.org/10.62583/rselt.v2i1.32>
- Yu B and Watkins DA (2008). Motivational and cultural correlates of second language acquisition: An investigation of international students in the universities of the People's Republic of China. *Australian Review of Applied Linguistics*, 31(2): 17. <https://doi.org/10.1075/aral.31.2.04yu>
- Zhang R, Zou D, and Cheng G (2024). Self-regulated digital game-based vocabulary learning: Motivation, application of self-regulated learning strategies, EFL vocabulary knowledge development, and their interplay. *Computer Assisted Language Learning*.
<https://doi.org/10.1080/09588221.2024.2344555>
- Zou D, Huang Y, and Xie H (2021). Digital game-based vocabulary learning: Where are we and where are we going? *Computer Assisted Language Learning*, 34(5-6): 751-777.
<https://doi.org/10.1080/09588221.2019.1640745>