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# *Psychometric Properties of the Self-Efficacy Sources Scale for High School Students*

# الخصائص السيكومترية لمقياس مصادر الفاعلية الذاتية لتلاميذ المرحلة الثانوية

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**الملخص:**

على الرغم من أن العديد من الدراسات ناقشت الآثار الإيجابية للألعاب على نتائج التعلم، إلا أن دور الألعاب في تسهيل اكتساب مهارات القرن الحادي والعشرين لا يزال يتم التقليل من شأنه، وفي هذا الصدد، يسعى البحث الحالي إلى تسليط الضوء على دور الأنشطة القائمة على الألعاب في تطوير مهارات التعلم في القرن الحادي والعشرين، وهي التواصل والتفكير النقدي والتعاون والإبداع. بهدف تقديم إجابة لسؤال البحث الرئيسي، أجريت دراسة بحثية نوعية في قسم اللغة الإنجليزية بجامعة عباس لغرور.

كأداة لجمع البيانات، اخترنا مجموعة اسئلة تحفيزية لتقييم أداء طلاب السنة الأولى أثناء تدريس دروس القواعد من خلال عملية التعلم القائمة على الألعاب، كشفت النتائج التي تم الحصول عليها أن اللعب في فصول اللغة الأجنبية له دور حيوي في تدريب المتعلمين على تطوير المهارات الأربعة، يُعزز التفكير النقدي، كما يطور الشعور بالمجتمع والعمل الجماعي والإبداع، وبناء على ذلك، توفر الورقة رؤى قيمة للباحثين والمدرسين ومصممي المناهج الدراسية، والمعلمين حول الدور الحاسم للألعاب في البيئات التعليمي.

**الكلمات المفتاحيّة:** ألعاب، مهارات اكتساب المعرفة، التواصل، الإبداع.

## ***Abstract:***

*The interrelationship between game-based learning and the 21st century skills has attracted largely the researchers' interest and attention. Although numerous studies discussed the positive effects of games on learning outcomes, the role of games in facilitating the acquisition of the 21st century skills is still underestimated. Related to this, the current research seeks to spot the light on the role of game-based activities in developing the 21st century skills of learning namely communication, critical thinking, collaboration and creativity. With a view to provide an answer of the main research question, a qualitative research study was conducted at the department of English , Abbes Laghrour University. As a tool of data collection , we opted for response prompts to assess first year students' performance while being taught grammar lessons through a game-based learning process.*

*The obtained results re vealed that gamification in foreign language classrooms has a vital role in training learners to develop the four 21st century skills of learning. Gamified learning provides learners with complicated tasks that boost them to think critically.Gamification also develops ,on the part of foreign language learners, the sense of community, teamwork and creativity.The paper , accordingly, provides valuable insights for researchers, instructors, syllabus designers and teachers about the crucial role of games in educational settings.*

***Keywords:*** *games ; learning ;skills ; communication ;creativity.*

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# 1. Introduction:

Teaching foreign languages in the 21 st century demands innovative and creative teaching methods as the traditional lecture style methods do not meet the needs of the 21 st century learners. Gamification or game-based learning is highly recommended to enhance students' participation, communication and motivation. This article is effective in capturing the extent to which game-based learning is effective in developing the 21st century skills of learning namely the 4 C's (communication, creativity, collaboration and critical thinking) . It aims at concretizing the way of developing the 4 C's through the teaching of grammar. Most of the researchers hypothesized that game-based learning creates a collaborative environment of learning. Manokaran , Abdul Razak and Hamat (2023) contend that along with the integration of technological tools in teaching, GBL helps in creating an environment of learning that is charaterized as active and collaborative. GBL is distinct from the traditional methods of teaching as it equips the learner with the ability to face the challenges that may encounter them in the educational context. (Manokaran, Abdul Razak, & Hamat, 2023)

# 1. Literature Review

## 1.1. Games and the 21st Century Skills

Game-based learning has emerged as a new teaching tool to equip learners with motivation, engagement and creativity. This innovative teaching method reflects on the application of some gaming principles for a didactic objective. The application of games in educational contexts becomes a pedagogical appeal in an era that is influenced by technology. Game-based learning can be found in different contexts including educational settings, social media and in workplaces.

Researchers and instructors are starting to recognize the benefits of implementing gamification in learning environments. Most researchers argue that games have an effective role in boosting learners' motivation and collaboration.It is argued that« Games enable the integration of both intrinsic and extrinsic motivational components to cultivate an environment where players feel more motivated to engage in the target activities. » (Hartt, Hosseini, & Mostafapour, 2020, p. 4) . As a new educational tool , games can foster new concepts and skills on the part of learners:

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1. Games can motivate students to combine knowledge from various disciplines and utilize it in decision-making processes.
2. Students can test how game outcomes change based on the choices and decisions they make.
3. Games also allows students tocommunicate with other participants and discuss game-related moves; this increases coordination which, in turn, improves social association skills.

Game-based learning plays a key role in developing the 21st century skills. Zi-Yu Liu , Shaikh and Gazizova (2020) state that « Changes in the technological and social conditions of modern society need new professional skills, which are often called "21st century skills". These skills should be developed starting from the primary school, as they are psychological and behavioural, rather than practical. Game-based learning and gamification are effective means of such skills development ».

In the 19th Century , textbooks were mainly used as the prime teaching tool to help students acquire content and the basic literary skills. Although the literary skills are still valuable and essential, they are not enough. Learners need to be provided with the professional skills that help them to be acquainted with life in the modern age. Learners need to develop the 21st century skills (collaboration, communication, critical thinking, creativity, problem solving,etc) . (Jan, 2013)

## 2. Objectives of the Study

Teaching foreign languages in an era that is dominated by the use of technological tools necessitates a shift from employing traditional lecture-style methods to innovative strategies in teaching. In conducting this study, the researcher aims at highlighting the pivotal role of educational games in enhancing the 21st century skills on the part of foreign language learners. The current research is valuable as it offers researchers, teachers and syllabus designers new insights of how game-based learning may be beneficial in foreign language learning.

## 3. Research Questions

1. Does game-based learning enhance the 21st century skills on the part of foreign language learners ?
2. How do foreign language learners react to learning via games ?

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## 4. Research Method

The formulated research question, the research problem and the objectives of the study impose the type of the research design. The research paradigm opted for the current research is the qualitative method. This design frame was selected for an urge to explore the learning outcomes of a novice teaching method and evaluate how far it may boost the acquisition the 21st century skills of learning.

As a tool of data collection, we selected a response prompt to elicit students' reactions towards games as a novice teaching method. This research seeks to uncover the role of game-based learning in developing the 21st century skills of learning. The sample of our study consists of foreign language students belonging to the department of English, university of Abbes Laghrour Khenchela during the academic year 2023-2024. Participants were selected to elicit their views as to learning via the traditional teaching method and the game-based learning , their interaction and their performance.

Participants were asked to write down their responses towards learning via games. In order to get their responses , they were given a prompt in the form of an open-ended question. They were asked seven questions to get more specific information about the way they develop the 4C's while learning Grammar via gamification. Written responses provided multifaceted data which offer better understanding of the pivotal role of games in foreign language learning.

## 5. Analysis, Results and Discussion

The qualitative content analysis was opted for in this research study to analyze the obtained data. The qualitative content analysis has to deal with analyzing a written or visual material that might include films, textbooks, written responses , oral responses, literary texts,etc. It is defined as the process of dividing raw data into a set of themes , categories and codes based on the researcher's examination and interpretation. Three main steps were involved in the qualitative content analysi as it is displayed in the following table :

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| **1. Reviewing and Organizing** | Being familiar with the data through reading and listening |
| **2. Coding and Categorizing** | Developing concepts from the raw data |
| **3. Representing and interpreting** | Providing an explanation and interpretation of the main concepts and themes |

**Table1 : The Main Steps in Qualitative Content Analysis**

Today more than ever before, foreign language learners need a new instructional method to foster their 21st century skills. Students' written reactions show that game-based learning has a pivotal role in enhancing their 21st Century skills. The collected data display that game-based learning becomes a requirement in the 21st century as it boosts students' motivation and engagement. Adopting game-based learning as the instructional approach, most students show a major shift in their learning behaviours that become apparent in their level of motivation. Teaching and practising grammar rules through games builds positive attitudes on the part of learners. Researchers assure that game based learning promotes meaningful learning environment by increasing motivation as well as giving learners a chance to acquire the 21st century skills of learning (Qian & Clark, 2016). Through reviewing previous studies on the role of games in promoting the development of the 21st century skills , Qian and Clark (2016) deduced that using games in education influences the development of the 21st century skills with particular emphasis on critical thinking and communication.

Providing an interpretation of learners' written reactions was an indepth-analytical process through which we tried to construct meaning out of the different codes , categories and themes emerged from the collected data. We have analyzed the response prompts of foreign language learners who have experiened both the traditional lecture-based learning and game-based learning. The analysis highlights the different ways of how games may enhance learners to acquire the 4Cs (communication, collaboration, creativity and critical thinking).

Participants showed great motivation and emotional engagement while being involved in a set of games that were mainly aimed to teach them grammar rules. They were actively collaborating to realize the game activities assigned to them. Findings from the research study of Raffar (2021) show positive effects of games on learners' engagement and motivation. The novice teaching method helped learners to acquire a gratifying feeling and be fully involved in the process of learning grammatical rules. In that context , Velazquez , Rodés and Navarro (2014) contend that game-based learning provides independence, effectiveness and better support for learners than the traditional methods of teaching.

The very first quesion centred upon the way learners develop their communication skills through games. In asking the question « Do you think learning via games help you to communicate with others (students and teachers) ? » participants declare that learning via games offers them more opportunities of communication with their peers without being ashamed. Participants also think that learning via games is the best way to encourage spontaneous communication in a relaxing environment. Based on her own experience , one of the participants proclaims : *"Learning through games enhances communication with students and teachers by promoting active participation, teamwork, and problem-solving, creating a dynamic environment conducive to exchanging ideas and fostering mutual understanding.For example, in a language class, students play a vocabulary matching game where they must communicate with each other to find the correct word pairs. As they collaborate, they reinforce their understanding of the vocabulary and practice communicating effectively. Meanwhile, the teacher observes their interactions, providing guidance and feedback to enhance their communication skills further. »*

Taking the aforementioned words into account, it is deduced that learners ' communication skills can be boosted and improved while learning via games. Learners who were at first shy and silent initiate different ways of communication both with their teacher and classmates. That is to say, game-based learning has the potential of creating communicative learning environment. In exploring the role of games in developing the21$^{st}$ century skills, researchers claim that games enable players to work in coordination, communicate effectively and be equipped with problem solving skills towards achieving the game objectives (Dwinggo, Bojic, Rodríguez, Klimova, & Ranuharja, 2023).

The second question tackles the issue of raising creativity via games. All participants agree that learning via games urges them to bring new and innovative ideas to their classroom. One of the participants reacts by stating that *« I think games can help us bring new ideas to the classroom because there are a lot of different games with different concepts that help students develop new ideas."* Another student claims that *"Games can serve as a powerful tool for enhancing the learning, and that by promoting creativity, students have the opportunity to express themselves creatively while learning."* All participants agree that games can be very helpful to create new ideas. They claim that *"The pressure to reach the excellence may develop our critical thinking and skills. The student could figure out total different methods that do not only facilitate the comprehension but also help to memorize things for a long term. Games also increase the person's IQ leading to the innovation of several solutions to one issue."*

The GBL approach presented a real opportunity for learners to be creative and innovative. Being asked, for instance, to write a short fictional story applying the grammar rules they previously learn to illustrate the setting of the story, they are encouraged to create , innovate and bring novice ideas to their classroom.

The subsequent question attempts to reveal the potential of games in raising critical thinking. One of the participants assures that through games that are based on problem-solving activities, learners are trained to ask questions beyond the literal level and this consequently expands their critical thinking. Using her own words *« Thinking in a critical way is stimulated directly by games. Once the student starts to question what, how and why is something been chosen or proposed as problem, it will give him the need to find the ideal and most suitable answers. Also, participating in games will impose you to reason logically and analyse the bias that may obstacle the thinking process."* The same view is shared by participant B who says that "*by using games the students can develop their analytical skills and critical thinking because they make students analyze given situations, adapt strategies, and make choices, and that helps enhance their abilities in critical thinking. There are a lot of games that the teachers can apply in the classroom that help students collectively work and think together to solve problems via games..*

Ismat, Mai , and Soon (2023) tested the potential of games in fostering learners' motivation , engagement and the 21st century skills. They found that introducing games in class enable students to be involved more in the learning process by enhancing their problem solving and critical thinking skills. The researchers declared that the collaborative game environment offers students a well understanding of the topic, the acquisition of the communication skills that lead subsequently to enhancing their critical thinking and problem solving skills. (Ismat, Mai, & Soon, 2023)

In addition, the obtained results display the key role of games in enhancing collaboration among peers. By providing learners with games that are completed in pairs or in groups , learners are trained to learn collaboratively. In sharing her own experience , one of the students states *« Learning with games teach me to work in collaboration with others because we have to divide our selves into groups and work together and each group competing with others on condition by a spirit of community and learning not to fight or to upset the others. »*

« Which do you prefer learning with games or the traditional ways of teaching?" This question is intended to elicit students' attitudes towards both the traditional ways of teaching and learning with games. Most of the participants think that both methods are complementary. Using one of the participants' words "*I prefer both methods. First, the courses should be explained through the old fashioned way which means the teacher provides his students with examples, rules and activities; However, if there is a need to make them more understandable and too memorable, games might do the job."* Another participant adds *"Learning with games in my opinion and my own experience is very helpful, it makes the lecture more relatable and entertaining. Games make the information easier to grasp and last longer in the memory of the student.*" One of the participants prefers learning with games. According to her "*as its generation has its preferences and profile we prefer new games which may interest the current generation."*

The following question seeks to dig deeper into learners' personal experiences with learning via games. All participants agree that games provide them with a relaxing environment of learning. Participant A, for instance, states that *"Learning with games is a lot more fun than learning with traditional ways it makes me more comfortable in the classroom and removes the stress of actually studying and they also make me bond more with my teacher and my classmates by creating good memories and learning at the same time.*"The same view is shared by participant B "*The feeling that stuck to my mind was a lot of joy and motivation at the end of each gained*

*challenge. It was amazing living those moments."* Participant C says *" It is really helpful and enjoyable. It improves my mood as a student and makes me feel comfortable and have a desire to study as if I am not restricted like other methods of education do to me.* » In addition to providing joy and motivation, learning with games makes grasping knowledge more easier « *My experience with learning via games had a great influence on my academic journey. I developed critical thinking, acceptance of different perspectives, self-confidence and learning methods. Games offered me an abundant platform not only to grasp knowledge but also to produce it. They enabled me to blend in the classroom and provided an efficient guide to build strong bands with my colleagues and teachers. In brief, games enriched my understanding and awareness."*

The digital tools innovated in our era make a transformative shift in the educational system. Teachers need to substitute the traditional lecture-based instructional approaches with novice approaches that conform to the needs of the digital world, on one hand, and the digital learner, on the other hand. Several studies have been conducted in the field of foreign language teaching to uncover the crucial value of using games in teaching. Researchers seek to study the impact of games on learners' performance and motivation, the interrelationship between games and the development of the 21st century skills, the role of online games in the digital classroom, etc. Researchers declare that gamified grammar activities offer learners the chance to acquire the grammar concepts more interactively. They state that gamification enhances the intercultural communication and collaborative learning (Nilubol & Sitthitikul, 2023). In investigating the efficacy of computer games on language learning , KLIMOVA and KACET (2017) argue that educational games are effective enhancing vocabulary acquisition. They expose learners to the target language, increase their engagement , communication and involvement (KLIMOVA & KACET, 2017). Accordingly, game-based learning has proven to have a key role in foreign language learning. It assists learners in acquiring vocabulary, mastering grammar rules and developing the 21st century skills of learning that will undoubtedly be of a significant use in their professional life. The findings, hence, demonstrate that the 4C's have been substantially promoted as students being involved in game-based learning classes.

## 6. Conclusion

This paper displayed that the educational environment , nowadays, must integrate game-based learning in education to meet the requirement of the 21st century. GBL has proven to contribute widely in boosting the 21st century skills of learning on the part of learners. Through games , foreign language learners are trained to communicate , collaborate , think and be innovative. We opted for a qualitative research design in order to investigate the potential of game-based learning in developing the 21st century skills of learning namely the 4 C's (communication, collaboration, creativity and critical thinking). Through analyzing foreign language learners' response prompts, we come to the conclusion that they hold positive attitudes towards learning via games. They feel themselves more comfortable when they are taught via games. Most of participants prefer learning via games as it offers them joy , fun , and motivation. Learning via games creates a space where both the teacher and the learner can interact effectively. Learners , within this novice teaching method , are trained to work in collaboration with others. More importantly, they are encouraged to come with creative ideas while being involved in game activities. All in all, the traditional lecture-style instructional approaches are no more suitable during an era that is dominated by the use of digital technologies. Teachers should update their teaching strategies to meet the requirement of the digital age and the needs of the digital learner.

## Recommendations

- ✓ Teachers are adviced to adopt games as a novice teaching method to fit the requirement of the age.
- ✓ Teachers who want to adopt games as a learning tool in their classes have better to adopt games which have been successfully implemented in other contexts.

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