Examining the Influence of Gamification on the Enjoyment, Engagement, and Motivation of Secondary School Students: A Case Study of Vevox

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Article Info

Abstract

This paper attempts to investigate the impact of a game-based learning using an application "VEVOX" on learners' enjoyment, engagement, and motivation. Using a quantitative method, a total of 80 participants from Secondary School completed a questionnaire on the impact of gamification approach on learners' enjoyment, engagement, and motivation. Data was collected and analyzed using SPSS. Overall, the results indicate that "VEVOX" impacts learners' enjoyment, engagement, and motivation positively. Furthermore, the findings imply that gamification for learning should consider that pupils are not identical, but have different perspectives; not all learners are necessarily fascinated in the same element with similar degrees, also the nature of game-based learning should be kept under this impression instead of forcing things on learners.

Citation:

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Introduction

As the ultimate aim of every school is to provide students with indispensable knowledge and experience alike to prepare them for the job market, such efforts won't necessarily be efficacious or fruitful. According to statistics, dropout rates are very high in Morocco (Ichou & Fathi, 2022). Besides, Moroccan students' level is extremely low with reference to the mastery of different languages (Bouziane, 2018). Thus, one of the underlying factors for this matter in question is that education seems to address learners' needs and lacks at the expense of their wants. Likewise, the World Bank report (2011) mentioned that the failure of education in Morocco is due to the quality of education per se, while it calls for reform and recommends stakeholders to reconsider media of instruction (Zerrour, 2013). Put simply, ways of transmitting knowledge to students have not changed for a long-time; methods of teaching are outdated, and assessment techniques are consistent which hinders improvement of education in Morocco.

Having a new generation taught with old paradigms, students feel insufficiently engaged or motivated. The current generation (Y generation) of students are not detached from ICT which is part of their daily lives and practices. Mobile technologies accompany them on a daily basis. They use their mobile phone to network with each other, to work in groups to finish tasks, or play games more than their previous generation (X generation). With digital natives, the power of classroom games gained popularity, and research per se stresses the importance of game-based learning and claims that it enhances chances to acquire knowledge and raises students' interest. This interest in games influences not exclusively youngsters, but, also teachers, researcher, and parents are passionate about it (Kirriemuir & McFarlane, 2004). Undoubtedly, games promote learners' attention and boost their engagement more successfully than old teaching and assessment methods.

Literature Review

Gamification in Education

The neologism gamification is named by Nick Pelling in 2002 (Marczewski, 2013) then it has become ubiquitous in different spheres since 2010 (Deterding et al., 2011). Gamification is a process of applying game element in a non-game environment so that players can feel involved and motivated while finding solutions to difficulties encountered. In the literature, gamification includes game elements (rules that make up the game) such as points, badges, levels that offer different ways for students to perform desired educational activities (Majuri et al., 2018; Koivisto & Hamari, 2019; Bai et al., 2020). In other words, game elements exhibit learner participation and performance (Simões et al., 2013). Recent studies demonstrated that classroom teaching and learning associated with game elements are a way to automatically trigger students' minds to deal with problem-solving tasks without thinking of it as a weighty burden to bear (Majuri et al., 2018; Koivisto & Hamari, 2019; Bai et al., 2020). Put differently, to address students' evasion, lack of motivation, and lack of engagement in the learning context, some research has been implementing educational games to perform desired learning activities (Legaki et al., 2020; Oliveira et al., 2022).

Enjoyment

A mark of distinction of gamification is that games involve evident enjoyment. Thus, the more the individual feel enjoyed, the more he or she becomes motivated, satisfied and productive (PeThan et al., 2014). The concept of enjoyment is termed as the pleasure one gets from enjoying something, and pleasure is a feeling of being happy and satisfied (Oxford dictionary). Enjoyment is a kernel part of enthusiasm. Incorporating games with learning would enthusiastically promote students' readiness to take part in classroom activities and feel energetic rather than exhausted or uncomfortable. Von Ahn and Dabbish (2008) argue that points, levels and leaderboards are highly essential to increase enjoyment in human computation tasks and seem to be an effective way for promoting performance quantity.

Engagement

A prevalent issue education has been trying to settle is students' lack of engagement especially the adolescent cohort considering that they are rebellions and obstinate. Indeed, it looks easy to push learners to memorize by heart, while it is hard making learning meaningful, discoverable, and effortless. Since primary school, the method of teaching has been the same; consequently, they feel bored and demotivated. Being asked to listen to the teacher, to copy and memorize the lesson by heart to get it back in the day of the exam becomes monotonous. Nevertheless, knowing that they love being attached to their mobile phones, students would feel more engaged (Groh, 2012) and interested in discovering knowledge by doing things. The majority of students are kinesthetic tactile, so they obtain information by manipulating or touching materials. Dewey (1938), in this sense, emphasized the importance of hand on approach. Students feel exhausted with pen and paper, they wanted to try something easy, new, and that fits their interests, hence the best way to cater to their wants is through implementing technology inside the classroom and incorporate it with activities performed in the classroom. Students especially adolescents like to go with the flow and be challenged so that time goes by very quickly. Creating a mixture between learning and enjoyment would lead to engagement and motivation.

Motivation

Gamification can fulfill students psychological need for self-esteem through recognition. By virtue, all human beings, not exclusively students appreciate having their efforts acknowledged by others. Acknowledgment fuels their pride and self-confidence, and considerable pride paves the way for the willingness to undertake more responsibility towards their learning by participating in course tasks and improve their skills and knowledge alike (Landers & Landers, 2014). Speaking of feedback, it is a powerful tool to either motivate or demotivate students. Future performances are determined by the quality of earlier feedback. Gamification elements such as points, leaderboards, and badges can raise students' interest and boost their self-efficacy on performance and reinforce their efforts by rewarding the desired target behavior. Most importantly is the fact that learners' extrinsic motivation is gradually shifting towards intrinsic motivation and the desire to learn grow without waiting for concrete real rewarding objects. In fact, ample studies (Deterding, 2014; Francisco-Aparicio et al., 2013; Pe-Than

et al., 2014; Peng et al., 2012) proved that intrinsic motivation satisfies players innate psychological needs for autonomy and competence.

Purpose of the Study

Education has always been a key factor in the development of countries around the world. Morocco is one of the countries that has been through many reforms unsuccessfully. Based on research, Moroccan students' educational level has witnessed an enormous regression in the past few years (Saoudi et al., 2020). Despite all the reforms undertaken by the public authorities, the performance of the educational system in Morocco is still very low (Ibourk & Amaghouss, 2014). Without a shadow of a doubt, the failure of an educational system can be attributed to bringing students' needs and lacks into focus while seemingly ignore their wants and wishes. Students do not feel themselves part of decision-making because in their mind teachers force-fed content into their brains. Owing to traditional teaching methods teachers employ espousing outdated textbooks ('Ticket 2 English': second-year baccalaureate Moroccan students' textbook, as an example, has not been exposed to change for more than a decade), students are triggered by feelings of disengagement, lack of motivation, and failure to enjoy what they learn. An effective way to engage students, especially the adolescent cohort knowing that they are utterly impossible to detach from technological devices, is to allow them to use their mobile phones so that they can gain knowledge. Learning for them has become monotonous and stressful; meanwhile cutting-edge technology is a means to entertain their brains. Therefore, designing learning by maintaining an integration between the curriculum and students' wants unquestionably would lead to desired outcomes. In light of this, this research aims to address the following question:

1- To what extent the application VEVOX is needed in an EFL classroom?
2- To what extent the application VEVOX impacts students' enjoyment, engagement, and motivation?

Method

Participants

The study was conducted among Moroccan students, specifically focusing on 80 pupils from two different majors, namely Earth and Life Sciences (SVT) and Physics (PC), in the 2nd year of their baccalaureate program. These students were enrolled at Al Ahd Al Jadid Secondary School in the Taounat region. The sample comprised three classes, with one class consisting of 26 students and the other two classes having 27 students each. In terms of gender distribution, there were 39 females and 41 males in the sample.

The majority of these students' parents had limited formal education and were primarily employed as either farmworkers or in the military, earning low incomes. However, there was a small subset of parents who had received tertiary education and held positions as teachers, vice school principals, or worked in other sectors, enjoying comparatively better incomes.

Research Model

The research utilized a quantitative methodology along with a quasi-experimental research design. The primary objective of this study was to assess the impact of implementing Vevox (which served as the independent variable) on the levels of enjoyment, engagement, and motivation among secondary school students (considered as the dependent variables).

Measuring Tool

The study employed a questionnaire to investigate the impact of the VEVOX platform, used for formative assessment, on students' enjoyment, engagement, and motivation. This self-completion questionnaire was developed by the researchers based on prior research and a literature review (see the appendix). Before distributing the questionnaire to the 80 participants, it was initially shared with a group of 10 students to ensure the validity and reliability of the measurement tool. Once the data were collected, they were coded and entered into a computer using Statistical Package for the Social Sciences Software (SPSS) version 25. The analysis of the data involved quantitative procedures, primarily descriptive statistics such as frequencies and percentages.

The Implementation of the Mobile Phone Application VEVOX in the Classroom

VEVOX is an interactive software teacher can use to design engaging sessions through live polling, quizzes, and Q&As. Teachers create sessions through VEVOX dashboard using their computers while students use the session ID to connect via their smartphones or tablets. The application is a real fun and helps support learning. It is distinct owing to its anonymity of the participants as it helps remove fear and judgment and increases participation alike. It is a tool to gauge learners' understanding and spot areas of weaknesses for immediate remedy. The application is considered as a game and is presented to students under the same impression.

The first thing teachers need to do is to log into their dashboard at https://login.vevox.com/[1], click on sign up[2] (see Figure 1) in case they do not have an account yet, then they have to click on get a free account[3] (see Figure 2) where they will be asked to enter their e-mail and a password[4]. Immediately after creating an account (see Figure 3), they need to create a session[5] (see Figure 4) and give it a name[6] and click create[7]. Soon afterwards, a notice at the top of the page will remind teachers that the session is inactive and that they have to click start session[8] (see Figure 5) and provide students with the session ID[9]. However, before activating the session, teachers need to create one[10] (students already know what they are revising, in this example, it is revision of a combination of lessons of function); the teacher choses the question type[11] (such as multichoice), the question title[12] (such as "I am afraid I can't, I have an important meeting," expresses), while the choices[13] are displayed below (e.g., giving opinion, declining a request, or lack of understanding). The teacher decides beforehand the correct answer[14] and clicks create (see Figure 6).
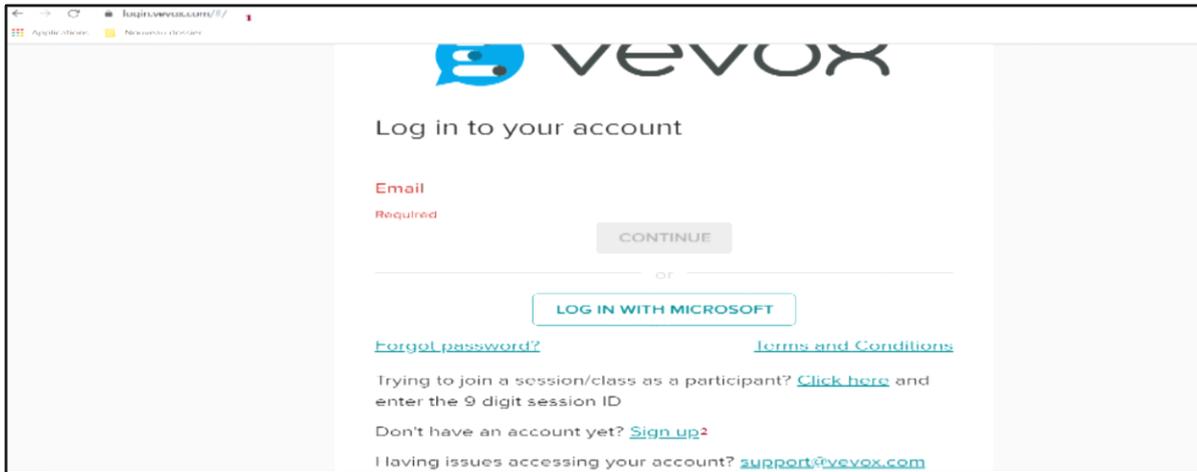
Figure 1. Log in to Vevox
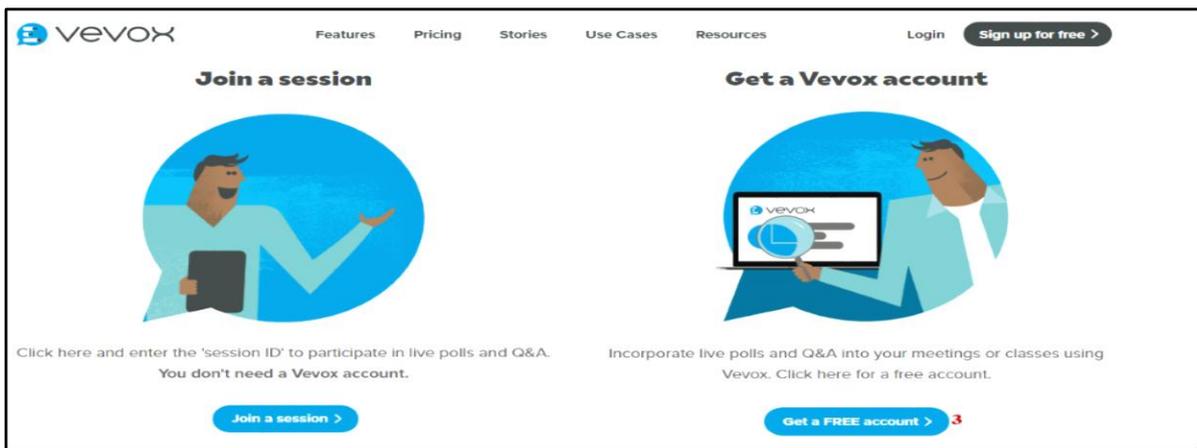
Figure 2. Getting a Free Account
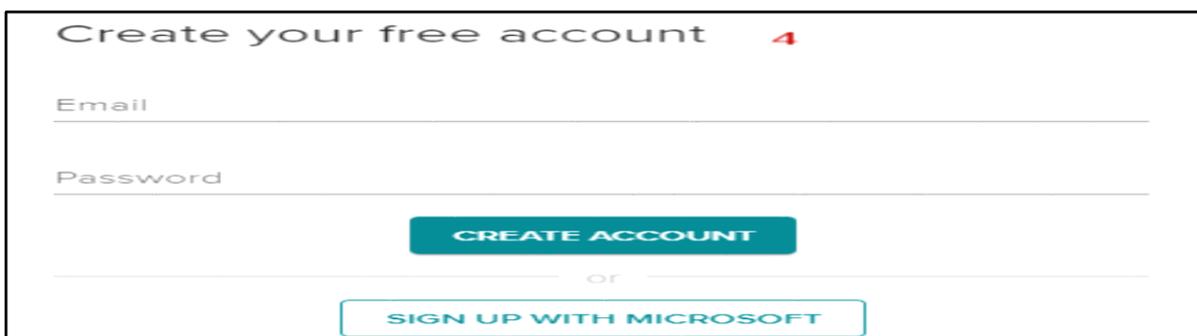

Figure 3. Creating an Account
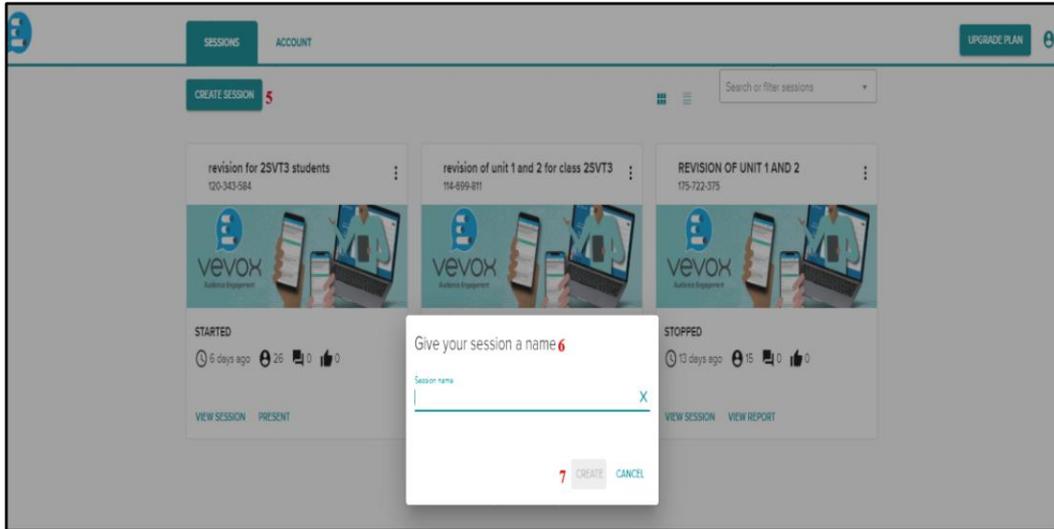
Figure 4. Creating a Session
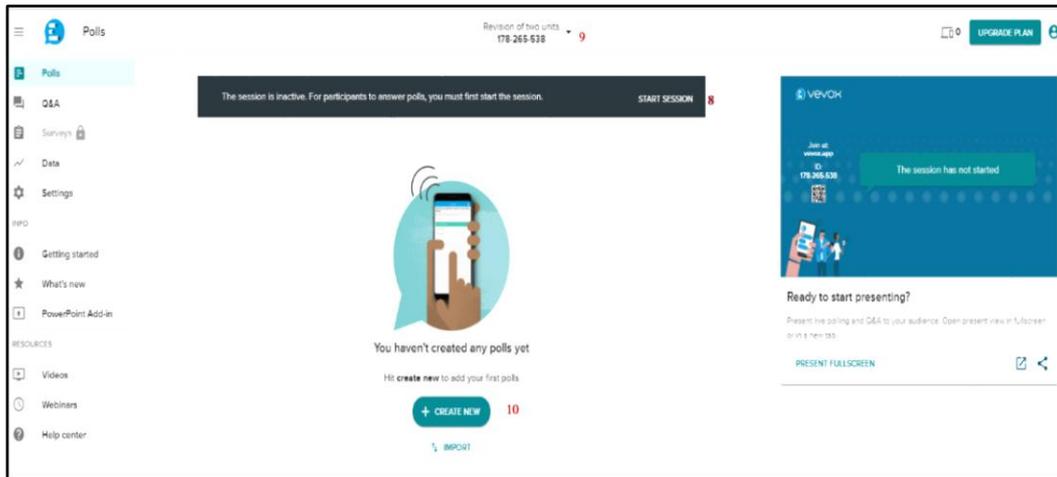
Figure 5. Starting a Session
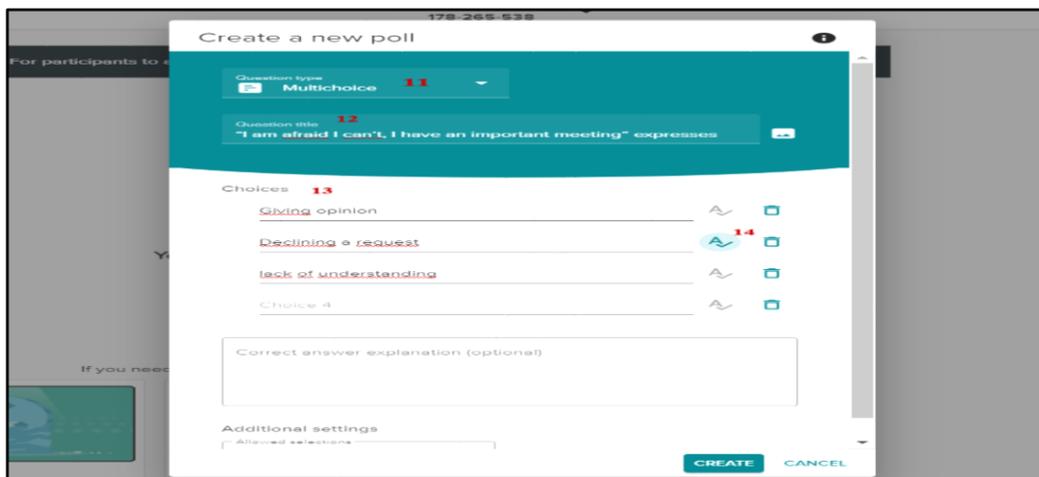
Figure 6. Create a Poll

For students to join a session, it is better to download the application on their mobile phones. Still, they can use the online/ web version. When the teacher activates the session, students need to open their application and enter the ID session. Questions appear immediately in their mobile phone screen after having the teacher hit the button open poll. Students make their minds and click the convenient answer for them, if they changed their minds, they can click cancel to alter their response.

When the teacher notices that all the participants give their responses[15] (see Figure 7), he or she can stop the poll and clicks show results[16] to show the percentage for each choice[17]. Afterwards, instant remedial work take part. Teachers and students proceed in the same way until they finish all the questions. At the end, the teacher hits the button display leaderboard[18]; a sort of feedback which enables students to have an idea about their performance.
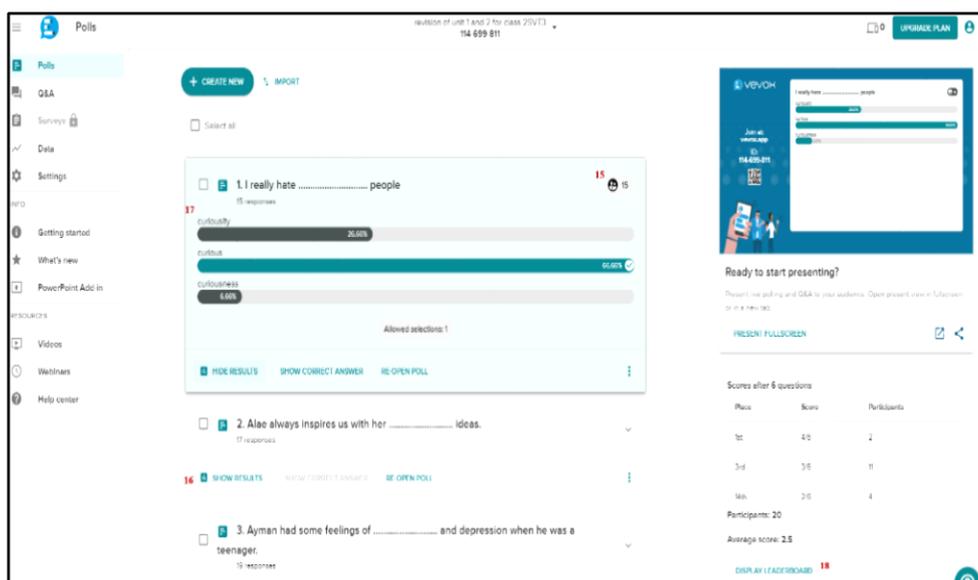
Figure 7. Number of Participants

Results

In this section, we present results that the researcher collected in order to investigate the impact of a mobile application named VEVOX along three dimensions: on students' enjoyment, engagement, and motivation. The tables below represent students' attitudes towards the application Vevox.

Enjoyment

Table 1. Learning through VEVOX is Incredibly Fun

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Agree	77	96,3	96,3	96,3
	Neutral	2	2,5	2,5	98,8
	Disagree	1	1,3	1,3	100,0
	Total	80	100,0	100,0	

Table 2. I Feel Happy When I Play with the Game

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Agree	72	90,0	90,0	90,0
	Neutral	6	7,5	7,5	97,5
	Disagree	2	2,5	2,5	100,0
	Total	80	100,0	100,0	

Table 3. I think it Makes Me More Productive Rather than Bored

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Agree	62	77,5	77,5	77,5
	Neutral	8	10,0	10,0	87,5
	Disagree	10	12,5	12,5	100,0
	Total	80	100,0	100,0	

Table 4. I Feel Less Energetic and Exhausted When I Play with It

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Agree	34	42,5	42,5	42,5
	Neutral	13	16,3	16,3	58,8
	Disagree	33	41,3	41,3	100,0
	Total	80	100,0	100,0	

Table 5. I Do Not Feel Comfortable Playing It

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Agree	51	63,7	63,7	63,7
	Neutral	3	3,8	3,8	67,5
	Disagree	26	32,5	32,5	100,0
	Total	80	100,0	100,0	

To investigate the participants degree of enjoyment, they were asked five questions. Responses were as follows: 96,3% of the respondents agreed that learning through VEVOX is incredibly fun, 1,3% disagree, while 2,5% were neutral. Respondents were asked about their feeling during the game, the majority (90%) expressed their happiness, only 2,5% were not happy, and 7,5% opted for neutral. To gauge whether or not VEVOX was able to make learners active and productive, they were asked to either agree or disagree with the statement provided.

The results showed that 77.5% agreed with the statement, 12,5% disagreed, meanwhile 10% could not decide. To check if VEVOX has an impact on their energy or not, they were asked to either agree or disagree with the statement provided, results showed that 42,5% felt less energetic and rather exhausted while playing the game. Meanwhile, 41,3% disagree with them, and 16,3% opted for neutral. Based on the findings, 63,8% of the participants did not feel comfortable playing the game, 32,5% felt comfortable, 3,8% opted for neutral.

Engagement

Table 6. I Want to Discover All the Questions in The Game

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	75	93,8	93,8	93,8
	Maybe	3	3,8	3,8	97,5
	No	2	2,5	2,5	100,0
	Total	80	100,0	100,0	

Table 7. Time Passes Quickly When I Play with It

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Agree	74	92,5	92,5	92,5
	Neutral	4	5,0	5,0	97,5
	Disagree	2	2,5	2,5	100,0
	Total	80	100,0	100,0	

Table 8. I Would Love to Complete All the Question in The Game

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Agree	70	87,5	87,5	87,5
	Neutral	5	6,3	6,3	93,8
	Disagree	5	6,3	6,3	100,0
	Total	80	100,0	100,0	

Table 9. I Feel Bored, I do not Want to Complete the Activity

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	31	38,8	38,8	38,8
	Maybe	7	8,8	8,8	47,5
	No	42	52,5	52,5	100,0
	Total	80	100,0	100,0	

Table 10. It Was Really Significant to Revise Lessons Using this Game

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Agree	69	86,3	86,3	86,3
	Neutral	7	8,8	8,8	95,0
	Disagree	4	5,0	5,0	100,0
	Total	80	100,0	100,0	

To develop awareness about students' engagement, participants we invited the participants to answer five questions. First, while 93,8% expressed their desire to discover all the questions in the game, only 2,5% did not want to, and 3,8% opted for maybe. Second, 92,5% voted that time passed quickly when they were playing the game, merely 2,5% claimed the opposite, and 5% were neutral. 87,5% wanted to complete all the questions of the game, 6,3% did not want to, and the other 6,3% were neutral. Again, participants were asked to describe their feeling about the activity, 38,8% felt bored and did not want to complete it. Nonetheless, 52,5% did not feel bored

and wanted to complete the activity, while 8,8% opted for maybe. Furthermore, 86,3% found that revising lessons using VEVOX is really significant, 8,8% were neutral, meanwhile 5% disagreed.

Motivation

Table 11. This Activity is Highly Interesting

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Agree	76	95,0	95,0	95,0
	Neutral	2	2,5	2,5	97,5
	Disagree	2	2,5	2,5	100,0
	Total	80	100,0	100,0	

Table 12. I Did My Best to Finish the Activity

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	68	85,0	85,0	85,0
	Maybe	7	8,8	8,8	93,8
	No	5	6,3	6,3	100,0
	Total	80	100,0	100,0	

Table 13. I Did Not Invest Much Effort in the Game

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	50	62,5	62,5	62,5
	Maybe	16	20,0	20,0	82,5
	No	14	17,5	17,5	100,0
	Total	80	100,0	100,0	

Table 14. I Allocated Less Energy for The Activity

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	54	67,5	67,5	67,5
	Maybe	16	20,0	20,0	87,5
	No	10	12,5	12,5	100,0
	Total	80	100,0	100,0	

To measure students' level of motivation in gamification, participants were asked to react to four questions. For them, 95% found that the activity was interesting, merely 2,5% disagreed, and the other 2,5% were neutral. To check their level of motivation, participants were asked if they did their best to finish the activity, 85% of them opted for yes, 6,3% chose no as a convenient answer to them, while 8,8% could not make their mind and they chose maybe. In addition to this, 62,5% stated that they did not invest much effort in the game, while 17,5% claimed the opposite, 20% were not sure and they chose maybe. Further, the majority (67,5%) allocated less energy for the activity, 12,5% did the opposite. Meanwhile, 20% opted for maybe.

Discussion

Our motivation for the present study was to investigate the impact of game-based learning using the application VEVOX on 2nd year baccalaureate students' enjoyment, engagement, and motivation. In line with previous research on the potential of gamification to promote learners' enjoyment, engagement, and motivation (e.g., Koivisto & Hamari, 2019; PeThan et al., 2014; Groh, 2012) the findings demonstrated that gamification using VEVOX has a positive impact on learners. To address issues presented by many researchers (Ichou & Fathi, 2022; Bouziane, 2018; Zerrour, 2013) in the field, this paper is meant to find a solution to issues of students' evasion, lack of engagement, and low motivation in classroom activities. Accordingly, gamification is not only the best way to promote students' interest in education, but also the convenient option to cater to their wants and wishes as well as hone their ICT skills.

According to the findings, participants expressed their enthusiasm and passion towards the application, for the majority claimed it was an enjoyable experience as it contributed in making them happy and more constructive and productive rather than bored or impotent. However, many students claimed being less energetic and exhausted when playing with the game, 38.8% claimed feeling bored and uninterested in completing the game which can be interpreted as due to their lack of readiness to get exposed to a new mode of learning, as some of the participants did not have a mobile phone or data connection. These are some of the assumptions made by the researcher observer of the participants. Though most of them can't detach from their mobile phones, there is still a small number of them coming from disadvantaged backgrounds who seem unable to accept the world changes; they prefer to remain in their comfort zone; they are advocators of lecturing, and pen and paper-based assessment. Even though, it does not make them involved in classroom activities, still it keeps them away from embarrassment and protect their self-esteem. Similarly, Kahveci (2010) was interested in investigating students' motivation towards the use of technology; consequently, the researcher found that some students have less confidence and a negative attitude toward the use of technology.

In accordance with Groh's (2012) study, the implementation of ICT in the classroom contributes to students' engagement. In this paper, it was crystal clear that the participants' engagement was extremely high, they were eager to discover and complete all the questions in the game; they could not feel the time as it passed quickly and the majority express their interest in revising lessons using the game or the application implemented. Actually, technology was able to engage unengaged learners, attention of reluctant students can be raised and enhanced via personal related things involving their mobile phones. Likewise, participants demonstrated their motivation to play and learn through the VEVOX application; they found it interesting, engaging, and easy since it did not require them much effort and energy (Simões et al., 2013), above all, it was able to contribute in developing their learning outcomes.

Conclusion

In an attempt to address issues of students' drop out of school, disengagement, lack of motivation and outdated medium of instructions, this paper is meant for testing the effect of gamification on students' attitudes with three

dimensions; students' enjoyment, engagement, and motivation. Generally, the findings were favorable; the mobile application VEVOX facilitated the process of learning for learners, contributed in engaging and motivating them. Consequently, the application is recommended in the classroom. However, the researcher needs to consider certain important elements which are not all learners are similar; some may feel comfortable using their mobile phones trying novel experiences, while others may not. Furthermore, coercing learners into using a mobile phone and have a data connection to do the activity would lead the practitioner to the initial dilemma.

Recommendations

The findings imply that gamification for learning should consider that pupils are not identical, but have different perspectives; not all learners are necessarily fascinated in the same element with similar degrees, also the nature of game-based learning should be kept under this impression instead of forcing things on learners.

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Appendix

	Statements	Agree/ Yes	Neutral/ Maybe	Disagree/ No
1	Learning through VEVOX is incredibly fun			
2	I feel happy when I play with the game			
3	I think it makes me more productive rather than bored			
4	I feel less energitic and exhausted when I play with it			
5	I do not feel comfortable playing it			
6	I want to discover all the questions in the game			
7	Time passes quickly when I play with it			
8	I would love to complete all the question in the game			
9	I feel bored, I do not want to complete the activity			
10	It was really significant to revise lessons using this game			
11	This activity is highly interesting			
12	I did my best to finish the activity			
13	I did not invest much effort in the game			
14	I allocated less energy for the activity			