

Gamification: The Effect on Students' Motivation and Achievement in Language Learning

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Abstract

The purpose of this study was to examine the effect of applying gamification strategy to student's motivation and achievement in learning Arabic language. This action research aimed to answer the following research question: Does gamification has a positive effect on students' motivation and achievement in learning Arabic language? To answer the research question, the researcher used before-and-after approach with eleven students in Arabic language class. A questionnaire to assess motivation before and after applying the strategy was used, also written and oral examination to assess students' achievement. The results showed improvement in both motivation and achievement.

Keywords: gamification, motivation, language learning

INTRODUCTION

One of the most important objectives of education is trying to understand and develop the abilities of learners, this happens through identifying their strengths and sustaining them on one side, and getting to know their weaknesses and diminishing them on the other. Systems that only focus on lecturing and other traditional teaching strategies tend to produce passive learners. Due to "spoon feeding" techniques, students are highly dependent on their teachers, which leads to suppressing their creativity and neglecting their strengths.

In addition to that, gaming tablets and social media are becoming a major part of a student's life, teachers face a significant problem with student's motivation and achievement inside classrooms. Learners get easily distracted and show a loss of interest, and communication between the student and the teacher is becoming fragile, that's why teachers work hard to apply teaching strategies that help students attain better results and stay engaged with the taught material. These teaching strategies tend to focus on covering the different learning styles inside a classroom, which include visual (through pictures, paintings, shapes...) or auditory (through rhythms, chants, tones...) or kinesthetic (through body movement, gestures...). One of these teaching strategies is learning through play, or gamification. Kapp (2012) identifies gamification

as “using game-based mechanics, aesthetics and game thinking to engage people, motivate action, promote learning, and solve problems”.

When gamified learning is used inside a classroom, students' engagement may increase and their learning can enhance significantly (Buckley & Doyle 2014). This shows the importance of gamification in creating a positive learning atmosphere.

Larger number of studies point out the positive effect of gamification on motivation, however, a clear evidence of the effectiveness of gamification is still absent due to the limitations of study design and analysis strategies (Hamri, Koivisto & Sarsa 2014; Seaborn & Fels, 2015). Seaborn & Fels (2015) suggest that the motivational effects of gamification need a clear theoretical foundation to be explained, in other words, the question “*how gamification motivates?*” is still not answered in an adequate way.

Another inconvenience with the current research is how studies deal with gamification, it is often treated as a fixed concept, however, when it comes to applying it, the gamified environment can hold a lot of diversity due to the many shapes and forms that it can take. Different game design elements can be used in various combinations that is why the motivational effects of gamification cannot be studied as a generic construct.

Teaching strategies such as lecturing may prevent students from being creative and limit their involvement. Students complain about being bored in classroom due to the absence of interaction, which may lead to the increase of drop-out rates, that's why we need more interactive activities that support communication between students. The findings of this study can positively affect society, considering that a well-educated society is a strong one. When interactive teaching strategy as gamification is used, students will stay interested in going to school, which can have an effect on their achievement later in life.

Gamification can be very beneficial for both students and teachers, it can help students stay engaged and motivated to study, especially through competitive games where students work hard to show their strengths. This motivation towards learning may lead students to achieve better. Gamification can also help teachers enhance their communication with students and create a safety net inside the classroom.

This research may have an influence on how teachers perceive gamification as a teaching strategy, it will supply them with the needed information to know how to apply gamification and use it effectively to reach the best learning outcomes. If this research proves that gamification has a positive effect on students' motivation and achievement, then teachers will be interested in implementing this strategy in their classrooms. Results of this research may influence the way educational policies are written, if the results were positive, new policies can be written to support using gamification in schools, these policies may play a significant role in solving some educational problems such as students dropping out from school, demotivation, underachievement, and others.

A study about gamification in education done in Lublin University of Technology in Poland, suggested that the use of a reward system increased students' engagement, also students were able to understand the content faster by practicing and applying rather

than just relying on traditional lecturing. The study also concluded that gamification created an enthusiastic atmosphere where students were excited to learn, particularly in subjects they used to struggle with like math. The gamified system also helped students enhance their social connections, especially through team competitions. Although previous researches discussed the different aspects of gamification and how it affects the learning process, this topic still has a lot of sides that need analyzing, especially when talking about its effect on motivation and achievement. The effects of using gamification can differ from one study to another, that's why more research need to be done to give more sufficient information about it.

In Lebanon, and due to the old curriculum that is still the same since 1997, teachers tend to follow traditional teaching methods that go along with the curriculum. Instead of going for modern and flexible teaching methods, teachers prefer to stick to the old strategies that suit the existing curriculum. Teachers complain about not having enough time to implement modern teaching strategies in their classrooms, due to the huge amount of lessons that need to be explained. This has plenty of negative effects on the educational process, some of these effects include students developing a negative attitude towards learning, loss of interest, and demotivation.

After looking for researches previously made in Lebanon under the title of gamification, it was clear that the topic was not addressed before, this means that not enough attention was given to it; which is one of the reasons gamification should be addressed especially in the Lebanese context.

The purpose of this research is to study the effect of using gamification on students' motivation and achievement in grade three. In this study the researcher will be looking for an answer to the following questions:

1. Does using gamification teaching strategy affect students' motivation positively?
2. Does using gamification teaching strategy affect students' achievement positively?

Research Hypothesis

H1: If gamification approach is implemented inside grade three classroom, it will have a positive effect on students' motivation and achievement.

H2: If gamification approach is implemented inside grade three classroom, it will have no effect neither on students' motivation nor on their achievement.

LITERATURE REVIEW

In this literature review the researcher provides a summary to related literature, and relevant researches that support or disprove the use of gamification in the educational framework. The researcher also supplies readers with the needed information on how to use gamification inside classrooms along with the elements that contribute to achieving a gamified classroom. The review also provides a look on the benefits that gamification holds and the drawbacks that may occur. In addition to that, the researcher gives information on theories of motivation and how they are linked to education, also

how performance and motivation are affected by implementing the gamification approach.

A key attribute to keep students involved in the learning process is how educators manage learner's participation in the classroom. Teachers may be very aware of the subject matter they are teaching, however, they may lack the ability to get students engaged in learning. The key attributes to effective learning are engagement and motivation.

The learning environment should include various conditions that foster motivation, these conditions include establishing inclusion, developing attitude, enhancing meaning, and engendering competence. Establishing inclusion is when the learning atmosphere is based on mutual respect and positive connections between teachers and students. Developing attitude is when learners are not afraid to fail and make mistakes while learning, usually known as a "safety net". Enhancing meaning is when the learning process promotes challenges and learning experiences that are related to students' perspective. Engendering competence which is understanding that students learn things they value more effectively. The inclusion of these four conditions in the learning process improves learner's motivation (Jones & Jones 1998).

Skinner's reinforcement theory

Skinner (1948) suggests that behavior which is reinforced tends to be done again, however, behavior that is not reinforced tends to be weakened. This means that behavior can be modified by the responses that follow it.

Skinner identifies these responses as neutral operants, reinforcers, and punishers. Neutral operants are responses that have no effect on the behavior. Reinforcers, which can be either positive or negative, are responses that have an effect on the chances of behavior reoccurring. On the contrary, punishers are supposed to prohibit the behavior from occurring again.

Positive reinforcement is when the behavior is rewarded in an attempt to strengthen it. For example, when teachers give students candy each time they complete their homework, they are more likely to repeat the behavior later. On the other hand, negative reinforcement is also used to strengthen behavior but through removing an undesirable reinforcer, for example, if students do not complete a certain task, they have to give back the candy they took earlier (McLeod, 2015). On the other hand, punishment leads to eliminating a response, it works by introducing unpleasant stimulus or removing a rewarding stimulus.

Expectancy-value theories

According to the expectancy-value theories, two main factors influence behavior. First the way individuals relate doing a task to their personal values and interests (task value), and second, the level of confidence individuals have to succeed at a certain task (expectancy of success).

Expecting to succeed at a task is important, it determines whether individuals have the tendency to be competent. Students who believe they will succeed in accomplishing a

task are motivated to start working on it. Expectancy beliefs can forecast learner's engagement in activities and learner's achievement (Eccles, 2000).

However, motivation needs more than just an expectancy of success, individuals should be able to find value in what they're trying to accomplish. This can be achieved through four elements: students may find a certain topic amusing to learn (interest or intrinsic value); learners may consider a skill important because learning it is beneficial for future practices (utility or extrinsic value); students perceive acquiring a new skill as a way to develop themselves (importance or attainment value); the fourth factor is when students give one task a great amount of focus and time (opportunity costs).

Self-determination theory

This theory suggests that motivation varies in both quantity and quality. Individuals are most productive when they have an intrinsic interest in the task, but this intrinsic motivation shifts throughout the years to extrinsic motivation. Unfortunately, students tend to focus on extrinsic motivators such as deadlines and rewards, which subverts intrinsic motivation. Student's performance vary between activities done due to internal influences and those done due to external influences. For example, students who do their homework based on sincere desire will produce better product than students who do their homework to avoid punishment.

According to Deci (1999), Intrinsic motivation is increased when favorable conditions are present; autonomy, competence, and relatedness are three key factors that promote intrinsic motivation. Teachers can foster autonomy by staying away from judging students, acknowledging their feelings, and giving them an opportunity for choice. Competence is promoted by introducing suitable challenges and giving students feedback that enhances their self-efficacy. Relatedness is encouraged when the learning environment shows mutual respect, caring, and safety.

ARCS model of motivational design theories (Keller)

Based on the findings of Keller (2009), motivation inside classrooms is promoted through four steps: attention, relevance, confidence, and satisfaction. Each of these factors is achieved through specific ways. Attention is gained through perceptual arousal which includes surprising events to gain interest; and Inquiry arousal targets curiosity by asking a challenging question. Various methods work on improving attention, such as active participation where teachers apply strategies like games and role playing to get learners involved.

Relevance is considered a key aspect to increase motivation, teachers can relate lessons to familiar examples from real life. Many strategies are suggested to establish relevance which include showing learners the future usefulness of what they're learning, modeling, sharing personal experience, and others. Confidence is when learners believe they have what it takes to reach a certain goal. Teachers can help students grow through specifying objectives and giving supportive feedback. And finally, satisfaction is gained by rewarding and praising students for their achievements.

Control theory

Glasser (1999) introduced control theory as a theory of motivation. It suggests that behavior is not affected by an external stimulus but by what an individual wants most. All individuals control their behavior to increase their need satisfaction. When students are not willing to do their homework it's because they consider it not related to their needs. Glasser (1999) believes that the material taught and the strategies used should be discussed with students. When it comes to instruction and assessment, teachers should make sure that the teaching techniques used are interactive and fulfill learners' satisfaction, this creates loyalty between instructors and students.

Theory of flow

According to Csíkszentmihályi (2008), there are eight mental states that occur during the learning process, in addition to flow, these mental states include anxiety, apathy, arousal, boredom, control, relaxation, and worry.

Flow is a psychological state where learners are most engaged in tasks that challenge them in an appropriate way. Learners experience the flow state when they are immersed in a task which leads to deep learning and satisfaction. At other times, students may experience relaxation state when their skills exceed the level of the task, or they experience anxiety when their skills are less than what a task demands. Teachers should give tasks that are appropriately challenging at student's skill level, which help to reach the state of flow that supports optimal learning.

Professionals in education try to comprehend the state of flow and how it is reached in order to reach the best learning outcomes. Flow can be achieved in a variety of activities that include music, writing, sports, and others.

Needs theory

Maslow (1943) proposes that a series of needs should be fulfilled before individuals can reach their maximum potential. Maslow's hierarchy of needs includes five levels that range from the basic physiological needs (air, water, food, shelter...), safety needs (security, employment, health...), love and belonging (friendship, connection...), esteem (respect, status, freedom...), and the final level which is self-actualization.

When it comes to education, students may not be getting all their physiological needs, or some students may struggle with safety at home or even in school. Not all students feel they belong to the classroom, which could affect moving to further stages like esteem and self-actualization.

Teachers should make sure that the majority of needs are satisfied inside a classroom so that students can unlock their full potential. For example, students should have access to water, be able to rest, feel that they are safe and not being bullied, have a sense of belonging to their classroom, and get all the support they need from teachers. This enhances their learning and gives them the opportunity to focus on their academic achievement rather than being distracted.

Social learning theory

Bandura (1977) intended to explain how children emulate the behavior of others after observing it. He proposed that learning is a process influenced by others, his findings came after an experiment where children were observing adults attacking a doll, children copied the behavior, however when children observed that adults are punished after attacking the doll, they were less willing to copy the same behavior.

Bandura (1977) formulated four principles for social learning, attention, retention, reproduction, and motivation. Attention is needed to focus on a task so that it can be learned properly, retention is recalling information after internalizing it, reproduction is based on duplicating previously learned information when required, and lastly motivation, which is affected by noticing if others are being rewarded or punished for their actions.

When students see positive results from a certain behavior, they are more likely to reproduce this behavior, on the contrary, when the results of a behavior are negative, students tend to stay away from adopting that behavior. Also learners are influenced by the actions of their peers, so they are motivated to pay attention and participate in activities when they observe that their peers are motivated and engaged.

Students who are unmotivated

Unmotivated students seem to give little to no effort and are hard to teach. Demotivation makes students lose the will to participate in discussions. Some students may distract their peers and interrupt the flow of classes due to loss of engagement. Teachers are frustrated when students are disengaged. Conway (2014) found that teachers are challenged by disengaged students and find them hard to manage. In some cases, students who are unmotivated may have learning difficulties or giftedness that need special attention.

Teachers often find it hard to comprehend what truly demotivates students. Explaining students' actions and reactions requires knowledge of how they developed over years which could be a daunting task. In today's classrooms, students seem to be unmotivated. This absence of motivation may be a result of a variety of reasons, ranging from confusion to boredom. In most cases, unmotivated learners do not perceive assignments as a fun task. Some students may categorize themselves as low-achievers, so they prefer not to try and solve assignments.

In other cases, students who are unmotivated could be just bored because tasks are not challenging enough to meet their learning levels; which implies the importance of challenging learners in favor of achieving better academic learning goals. The lack of a reward system could also demotivate students. Acknowledging and rewarding students' work is crucial for their development. Students tend to be more interested in courses where their progress is noticed and publicly recognized.

Extrinsic and Intrinsic motivation

Extrinsic motivation occurs when external factors motivate an individual to do a certain task, these factors may include money, extra grades, praise, and other external rewards.

This type of motivation arises from outside the individual. On the other hand, intrinsic motivation occurs when an individual has an inner enthusiasm to accomplish something successfully. Although both extrinsic and intrinsic motivation are present in classrooms, teachers tend to focus on promoting extrinsic motivation (Spaulding, 1992).

Both extrinsic and intrinsic motivation have pros and cons. Advantages of extrinsic motivation include the more rapid changes in behavior without too much effort, also teachers do not need to have extensive knowledge of individual learners in order to apply it. However, it has disadvantages too, it can distract students from learning, it can also be challenging for teachers to come up with suitable rewards and punishments for each behavior of students. In addition to that, extrinsic motivators usually do not work over the long term, so once rewards or punishments are removed, students lose their motivation to learn.

On the other hand, the advantages of intrinsic motivation are related to the long-lasting and self-sustaining effect it has, also efforts to implement this type of motivation are usually focused on the subject matter rather than rewards or punishment. Its disadvantages include the amount of time it needs to be fostered, which is lengthy. Students are not all the same, which means various approaches may be required to motivate different students; this needs an extra effort on teachers' behalf to know what interests individual students in order to connect these interests with the subject matter. Therefore, it is important to focus on learners' intrinsic motivation due to its long lasting effects.

Principles that develop intrinsic motivation

Providing a predictable learning environment where the subject is not ambiguous is very helpful to keep students interested, also creating balance between easy and challenging tasks because a lot of complex tasks can lead to demotivation. Another way to promote intrinsic motivation is through modeling, it is a very effective way in showing students how a task is done, which makes it easier for them to progress and move forward in the learning process. Breaking large assignments into smaller facilitated tasks, which is known as putting sub-goals, helps students stay encouraged, because ambiguous and far goals demotivate learners, while setting milestones to reach step by step keeps learners involved, interested, and on the right track.

Cooperative learning is a technique used in modern teaching and keeps students motivated. When students work together in groups, low achievers and high achievers are in the same team, which gives the low achievers motivation to learn from their peers and prove themselves, also it motivates the high achievers to help their friends. So in this way, students are motivated internally and are more willing to study, nevertheless, sometimes students comprehend things more if they work in groups, which also helps to develop their metacognitive skills and critical thinking. Playing a game that teaches the needed principles and delivers the point is very important to motivate students, as they will find it more fun to learn.

Classroom structure can be altered by moving tables around or sitting in circles, which enhances the way students communicate with each other, also taking a class outside the

classroom can help learners get closer to the subject they are studying. Teachers may even give students the opportunity to choose project topics that they find interesting.

Gamification

It is when game-related fundamentals are applied to non-game contexts such as education. These game-related principles may include the use of badges, points, fun, social connections and many others. The goal is to enhance users' engagement with a system.

Gamification in education

Teachers always seek to find ways that make education more interesting and meaningful, it is a concern for course designers to fulfill this goal. Many researches has been done to find tools and strategies that enhance the learning experience and improve the quality of learning, that is why over the past years gamification got a lot of attention, hoping that it would benefit the academic field.

The concept is also recognized as gamification in learning or gameful thinking. It works under the supposition that students will have the same type of engagement that gamers experience while playing games. The aim of achieving this type of engagement is to influence learner's behavior and make learning an easier experience.

A gamified classroom

For a classroom to be gamified it should include some game elements, such as progress indicators (badges, leaderboards, points...), player control, social connections, fun, scaffolded learning (with challenges that increase), and others. Teachers can use some or all of these elements, but there are some combinations that work better than others, these are the combinations that produce continuous engagement and deal with learners as distinct individuals. In addition, the most beneficial gamification structures are those which use the connection between players (learners) to make the learning process interesting (Leaning, 2015).

Benefits of gamification in education

Leaning (2015) suggests that students tend to be more comfortable in gaming environments, they also feel relaxed due to the positive atmosphere that considers failure as a normal part of learning. Students in a gamified classroom are able to show intrinsic motivation towards the subject matter, especially that fun becomes a major part of learning. In addition to that, students have the chance to look into various identities through avatars (characters) which enhances creativity.

The instant feedback that gamification provides is essential for students to be aware of what they already know and what they should know, it also makes learner engagement smoother which results in better recall and retention. In addition to that, gamification is a flexible strategy that can be applied in a variety of subjects. This can lead to boosting the productivity of students and enhancing their achievement across different courses.

Gamification also showed other benefits, including the sense of acknowledgement that a student feels (Goehle 2013). According to Barata et al. (2013), students showed interest

in participating and being actively involved with the subject matter. The gamified atmosphere gave students something else to care for besides just a grade (Goehle 2013). Charles et al. (2011) noticed that students appeared more excited to fulfill voluntary tasks that include attending classes, participating, and preparing for a session.

When the content of the course is gamified, learners tend to develop a sense of loyalty with the instructor and the course, because they enjoyed learning in a fun and interactive way, this means that the teacher has more influence on students' actions due to the safe and supportive atmosphere that gamification promotes.

Application

Gamification can be practiced in a learning environment through the use of three methods. These include altering the structure of the class, modifying the classroom language, and adapting grades. Teachers might use a ladder of experience points which is referred to as (XP), students climb this ladder through progress, instead of just being graded by traditional letter grades. Teachers can later translate the XP into letter grades, the more XP a student has gained the better letter grade the teacher assigns. Regarding modifying the classroom language, teachers may change the terms used to describe assignments or classwork, for example instead of referring to completing tasks as "assignments", teachers can call them "embarking on a quest" or "uncovering secrets of knowledge", using such terms makes it more interesting for students to learn. The third method is altering the structure of the class into a gamified one, this can be achieved through organizing classroom leagues where students compete and rack up points.

Prensky (2005) proposes that the methods and practices of teaching used in today's classrooms are "stale, bland, and almost entirely stuff from the past", while today's students require modern and up-to-date practices that assure their engagement. Educators tend to look for methods that sustain a high level of engagement. According to Goehle (2013), the purpose for using educational games is to teach students something through clear objectives that are achieved progressively by supplying learners with occasional rewards, these rewards act as external motivators that keep students interested. Games have been shown to be successful in promoting learning, due to their motivational effect that non-gaming teaching methods may fail to achieve. For educational games to be effective, they should be "motivating, addictive, and provide encouragement through very short-term goals, so that the player can fail and try again until they succeed" (O'Donnell, Gain, & Marais, 2013).

Points

The majority of studies found that including points had a positive effect on motivation, especially that points provided a speedy feedback. Researchers also suggest that using points with other combinations is more effective than using points solely. The motivation that points provide is due to the instant recognition of student's work, which goes along with the findings of O'Donnell et al. (2013), who found that instantaneous feedback was a "key aspect of gamification, in that it solidifies the connection between doing right and being rewarded for it". Gåsland (2011) also suggests that learners are

more engaged with the subject matter when a points-based gamification system is used. On the contrary, Meyer (2008) found that using points had no relation with motivation and performance, after examining the effect of points on the quality of posts in an online discussion forum by graduate students, the majority of students reported that points had no effect on the quality of their posting.

Levels

A key aspect to achieve a successful gamified classroom is to ensure that the content and activities are scaffolded at an appropriate level in which students do not feel overwhelmed, but instead challenged to learn (Stott & Neustaedter, 2013). Levels add a sense of progression to the game, because tasks are split into small and attainable ones, so when students advance from one level to another they feel motivated to continue (Gåsland, 2011).

Badges / Achievements

Regarding the use of badges and achievements, results were not the same in all researches. In some research, using badges and achievements supported student engagement, while in other research the findings suggested that there is no correlation between using badges and student motivation.

Badges or achievements are symbolic awards that teachers give to learners for acquiring a certain skill, gaining knowledge, or completing a task. Learners usually display these badges as way to “let others know of their mastery or knowledge” (Abramovich, Schunn, & Higashi, 2013). Badges are considered a common aspect of gamification and in most cases operate under specific criteria. (Ahn, Pellicone, & Butler, 2014; Dominguez et al., 2013; Hanus & Fox, 2015). Badges support the social component of learning because they allow students to work towards the same goal, also students are excited to share these accomplishments with their family and friends.

Abramovich et al. (2013) consider badges to have mixed effects on students’ motivation and performance. According to McDaniel et al. (2012) using badges succeeded to achieve the motivational impact that was required. Students felt rewarded for completing their homework and were motivated due to the badges they received (Geohle 2013). On the contrary, Hanus and Fox (2015) found that when badges are integrated in a gamified version of a university course, students were less motivated and even had lower performance in their final exam compared to students registered in a non-gamified version of the same course.

Learners are different; therefore, they are not all motivated by the same sort of badges (Ahn et al., 2014). Students that are considered low-achievers were motivated by badges given for participation, while high-achievers were motivated by badges given for acquiring skills; this means that patterns for acquiring badges differ from one learner to another based on levels of prior knowledge (Abramovich et al., 2013)

Leaderboards

Another commonly used element in gamification is leaderboards. The impact of using leaderboards on motivation varies depending on students. Some learners dislike

leaderboards due to the element of competition that may take control of the learning environment, while other students may perceive leaderboards as a motivator. Students who are competitive tend to try hard in order to boost their place in the rankings.

Through using leaderboards, teachers can create a positively competitive atmosphere, and students tend to feel a sense of attachment to a similar-minded group. Learners can also compare their progress to that of other students. Leaderboards can be based on the progress the student makes, points system, or how many achievements learners have acquired (Dominiguez et al., 2013).

Some research found that leaderboards can be a source of motivation, because students' work is instantly recognized and appreciated publicly. It was also clear how leaderboards pushed students to work harder in order to sustain their performance and maintain or improve their position compared to other students (Mekler et al., 2013). Other research found that some students didn't enjoy competition, which affected their motivation in a negative manner.

Motivation effectiveness

As illustrated in Table 1, the effect of gamification varies between studies. Some research found that low achieving students may be more motivated in a gamified environment than high achieving students (Charles et al., 2011). When attempting to use gamification, course designers should be make sure that the competitive nature of gamification does not interfere with the engagement of less competitive students (Abramovich et al., 2013).

The majority of studies reported that gamification has a positive effect on student motivation, other studies, which are considered a small percentage, reported no effect or a negative effect on student motivation. Some studies reported mixed results when it comes to motivation. Gamification mainly supports extrinsic motivation because students will work harder to get the rewards (points, badges, etc), however, it also has the tendency to enhance students' inartistic motivation. When learning is fun, learners can develop genuine enthusiasm that affects both their motivation and achievement positively.

Since it's based on a reward system, gamification can become ineffective due to the overuse of its elements. Students may become bored by the reward system and eventually lose interest. Sometimes games used are not relevant and do not meet students' expectations, hence, the more teachers know their students the more likely they are to find games that suit them.

As a result, the effectiveness of gamification on motivation can be altered based on many results factors that include the games used, the type of students and their interests, and the intensity of using this strategy. The summary of the motivational effectiveness of gamification reported in studies is shown in Table 1.

Table 1. Summary of the motivational effectiveness of gamification reported in studies

Author	Motivating	Demotivating	Mixed Impact on motivation
Abramovich et al, 2013	X		
Barata et al, 2013	X		
Berkling & Thomas, 2013		X	
Charles et al. 2011	X		
de-Marcos et al. 2013	X		
Dominguez et al. 2013	X		
Gåsland 2011	X		
Goehle 2013	X		
Hanus & Fox , 2015		X	
Haaranen et al, 2014			X
Li, Dong, Untch, & Chasteen, 2013	X		
McDaniel, Lindgren, & Friskics, 2012	X		
Mekler et al, 2013	X		
Meyer, 2008			X
O'Donovan, Gain & Marais, 2013	X		

Impact of gamification on performance

The effect of gamification on achievement and student performance was difficult to comprehend, because many studies showed no report regarding this side. However, out of the studies that gave results, the outcome was not the same. According to Barata et al. (2013) , there was a growth in the number of students achieving the highest grades, also the variable between the highest and the lowest student grades decreased. Mekler et al. (2013) also suggests that gamification increases performance in a noticeable way.

On the other hand, Hanus & Fox (2015) found the opposite, Students who were enrolled in a gamified environment had lower scores in exams. However, Goehle (2013) reported little proof of the effect on student performance, whether negative or positive.

Drawbacks of Gamification

Based on the findings of Haaranen et al. (2014), when it comes to being motivated, not all students benefit the same way from gamification, because what motivates one student may not motivate another. Studies also showed that students who play video games regularly had higher motivation levels that students who do not.

Mayer & Johnson (2010) state that "entertainment features of games may distract the player from the academic content of the game, and reduce the players' efforts to process the material more deeply". The introduction of competition inside classrooms may encourage students to hate each other, which can lead to serious problems related to bullying. In addition, some learners may be careless when it comes to competition due to the lack of self-confidence, which makes them lack the motive to participate.

Haaren et al. (2014) recommend that teachers give students the option to turn off certain elements that may discourage them. For example, if the majority of learners find the use of badges discouraging, teachers need to find alternatives to replace it.

Considerations for pedagogical practice

Games are motivating due to their effect on emotional, cognitive, and social areas of players (Annetta et al., 2009), as a result, a gamified classroom should take into consideration how to appeal each of these areas. A good implementation of gamified elements should generate inspired learners that find the learning process meaningful.

Allowing students to share the badges and achievements they acquired can integrate social aspects into the process of gamification (Haaranen et al., 2014). Learners can share their accomplishments in person or through social network systems, this can "increase the amount of weight the achievements and levels carry with the student" (Goehle 2013). Another aspect that could be added into course design is group achievements, this gives learners the opportunity to work together to reach their goals, which contributes to improving social interaction.

Regarding the emotional area, gamification affects students through feelings of failure and success, also through dissatisfaction and fearfulness (dominguez et al. 2013). When gamification is applied in the right way, it offers learners the chance to experience various emotions. To create balance, teachers can minimize the feelings of anxiety and frustration through altering the levels of challenge so that they suit the abilities of students. Also progressing with the material at an appropriate manner decreases levels of frustration (Stott & Neustaedter, 2013).

When a learning environment is poorly designed, students will be forced to play, which is not considered fun (Deterding, 2014). Introducing game elements in classrooms (badges, points, levels...) is not enough to make a non-game context fun, it is so important that teachers find effective ways to integrate these elements so that they serve the purpose of gamification.

METHOD

In this chapter, the researcher offers a description of the (1) research design, (2) participants, (3) procedure, (4) instruments, (5) intervention, and (6) data analysis. The methodology of this research aims to answer the research questions: (1) Does using gamification teaching strategy affect students' motivation positively? (2) Does using gamification teaching strategy affect students' achievement positively?

Design of the study

A before-and-after study design was used for this research (also known as the pre-test/post-test design). This design provides the chance to measure change in a situation, problem, or attitude. This method is considered the most adequate to measure the effectiveness of a program. In before-and-after design, change is measured by comparing the difference in the variables before and after the intervention.

The purpose of this research was to examine the effect of using gamification on students' motivation and achievement in grade three. Achievement was measured by comparing students' grades before and after the use of gamification, while motivation was measured through a questionnaire that students filled before and after the teacher applied gamification.

Participants

Research was conducted over a three-week period at a school in Nabatieh Lebanon. The study was conducted in one section of grade three classrooms. The classroom included eleven students that were receiving traditional teaching with no gamification. The researcher had a meeting with the Arabic language teacher of grade three and discussed various aspects of gamification that she could use, which include points, levels, badges, and others. In addition to how she can alter her teaching methods in a way that can create a gamified atmosphere inside the classroom.

Procedure

The aim of the research was to study students' motivation and achievement and how teaching strategies and classroom atmosphere may have an effect on learners' engagement and how they perform. Gamification caught the researcher's attention because it holds a lot of interesting aspects that teachers can apply, it is also flexible and can fit to different subjects. The researcher read about gamification and read many articles about its definition, main aspects, importance, and how teachers can implement it inside their classrooms.

The researcher acquired approval from the school administration, and from the Arabic language teacher of grade three. At first the teacher was surprised and reluctant on how gamification will fit with the context of the Arabic language course, but after conversing about the topic, the teacher showed interest in cooperating and considered this an enriching experience for the classroom. The researcher and teacher discussed how lesson plans can be altered in a way that serves the purpose of the research, the teacher was flexible in updating the lesson plans and adding the elements of gamification into the context of the subject.

Previous lesson plans followed the traditional ways of teaching, however, when gamification approach was applied, the teacher started using points where students get rewarded for their work and attention for points that later on are transferred into grades or gifts. The teacher also used a leaderboard where students started competing to make it to the top levels, students who worked hard, participated, and showed improvement were offered better places on the leaderboard. In addition to that, achievement cards were given to students who scored well on the exams, or gave good performance in the oral communication skills, or even showed improvement in their overall level.

Previously, the instructor used to teach poems through repetition. However, with the gamified atmosphere, the teacher used different ways to teach a new poem. For example, she created a competition where students who memorize the poem faster and

recite it well are given a badge, this motivates them to learn faster and in an interesting way.

Instruments

To gather information for this study, the researcher used two types of data collection, pre and post exam, and a questionnaire to measure motivation.

The written exam was taken by students before the use of gamification, to measure their achievement when teaching methods were standard. After applying gamification for three weeks, another equivalent-level test is taken. The function of this exam is to give the teacher an idea about the performance level of learners and whether it is affected by the use of gamification strategy in class or not.

In addition, students were also tested for their oral skills, through poems. The teacher assessed students for a poem before applying gamification. And after teaching them another poem through a gamified atmosphere, they were also assessed to check if oral skills are affected by gamification.

The questionnaire was also used to collect data for this study. The teacher guided the students to fill the questionnaire two times, the first time before applying gamification and the second time was after a period of three weeks. The function of this questionnaire is to give the teacher an outlook on students' motivation. The questionnaire checked if learners were enjoying the class or not, their level of engagement, favorite course, and others.

Intervention

Before implementing the elements of gamification, the teacher guided students while they filled the questionnaire. Although the questionnaire was simplified in order to suit students' age and abilities, the teacher helped each student individually to answer the questions, this helped students understand what they are doing, and gave the researcher more accurate answers. The teacher also taught students a poem through repetition and evaluated them. Later, students were taught another poem through gamification, and after that they were assessed by the teacher.

The teacher modified the teaching schedule of the Arabic language course to include 20 minutes of gamified activities in each session, on a period of three weeks. The teacher used the same material she prepared previously, but in a gamified context. So the content of the course was not modified, but rather the way of rewarding students and teaching them.

Data Analysis

Various types of data collection were used in this study which included written exams, oral exams, and questionnaires. The method of acquiring the data was before-and-after method, students were assessed before starting the study, through a written and an oral exam to measure achievement, also through a questionnaire to measure motivation. After a period of three weeks and after applying gamification, students were assessed through the same previous methods.

The researcher was able to compare the written and oral performance of students before the use of gamification and after applying it. This helped the researcher form an idea on the effect of gamification on performance. In addition, the questionnaire helped determine whether motivation is affected in a gamified classroom

RESULTS

The aim of this study was to determine whether the use of gamification inside a classroom has an effect of students' motivation and performance. A class of eleven students went through a before-and-after experiment; they were tested before applying gamification and after applying it over the course of three weeks. Through these three weeks, students were learning in a gamified atmosphere where the teacher used points, badges, levels, and others.

Data were analyzed to determine if the researcher could accept or reject the hypothesis of the research.

H1: If gamification approach is implemented inside grade three classroom, it will have a positive effect on students' motivation and achievement.

H2: If gamification approach is implemented inside grade three classroom, it will have no effect neither on students' motivation nor on their achievement.

Motivation Results

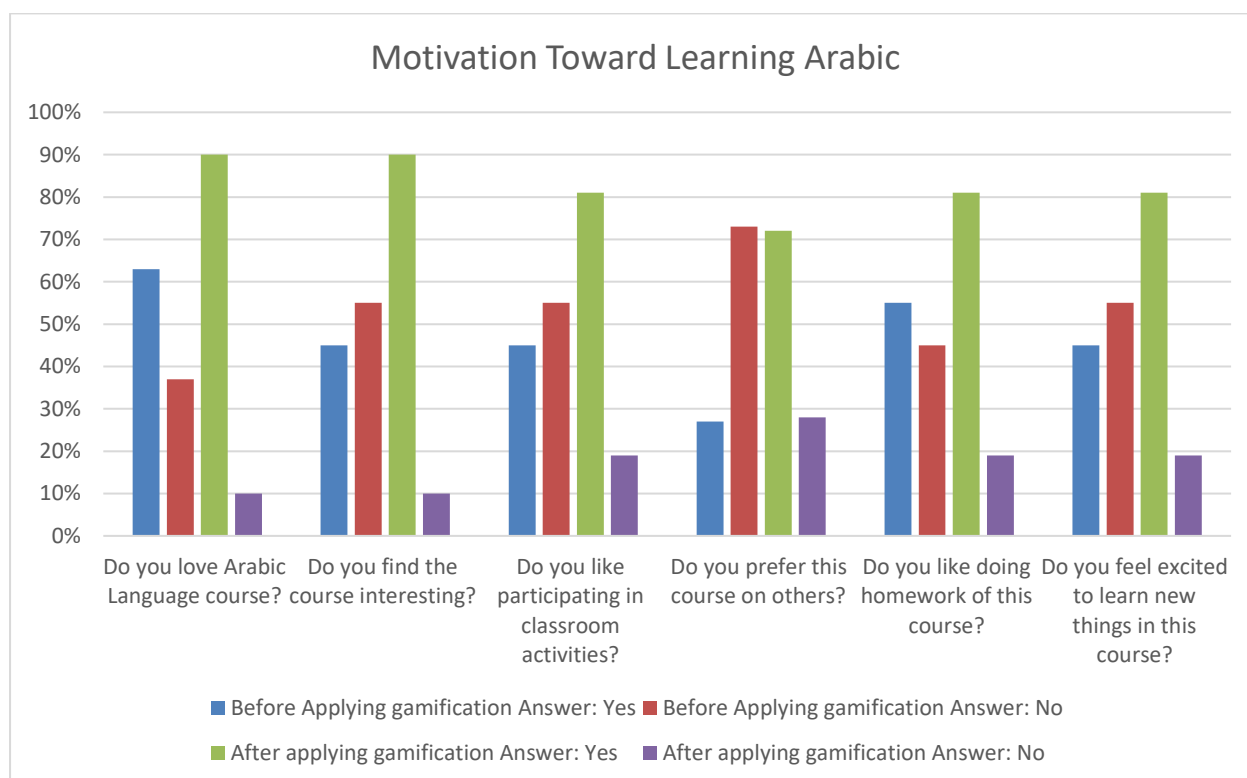
After analyzing the results of the questionnaire, the researcher realized a difference in results before and after applying gamification. Before applying the strategy, 63% of students said they love the Arabic language course, however, the percentage increased to 90% after applying gamification. Before, 45% found the Arabic language course fun and enjoyable, the percentage increased to 90%. Prior to applying the strategy, only 45% said they like participating in classroom activities, the percentage increased to 81%. The majority of class did not prefer Arabic course over other courses, only 27% said they do, but after applying gamification the percentage increased to 72%. In addition, when it comes to doing homework of the course, 55% said they enjoy doing homework, but after applying gamification on the course of three weeks, the number increased to 81%.

The results of the questionnaire imply that a gamified learning atmosphere had the ability to increase students' motivation. The majority of the classroom became excited to participate and finish their homework. The results also show how gamification had the ability to alter the way students perceive Arabic language course, and how they are engaged in learning because it's more fun and interesting. The results of the motivation questionnaire are shown in table 2.

Table 2. Results of the motivation questionnaire

	Before Applying gamification		After applying gamification	
	yes	no	yes	no
Do you love Arabic Language course?	63% yes	37% no	90% yes	10% no
Do you find the course interesting?	45% yes	55% no	90% yes	10% no
Do you like participating in classroom activities?	45% yes	55% no	81% yes	19% no
Do you prefer this course on others?	27% yes	73% no	72% yes	28% no
Do you like doing homework of this course?	55% yes	45% no	81% yes	19% no
Do you feel excited to learn new things in this course?	45% yes	55% no	81% yes	19% no

Figure 1 shows the results of the motivation questionnaire presented in a bar graph as follows.

Figure 1. Results of the motivation questionnaire

Written exam results

After going through the results of the written exam, the mean of the scores in the written test prior to applying gamification was 17/30. After applying gamification and doing a post written exam, the mean score appeared to be 20/30, which means that the overall achievement of students improved in written exams.

Oral exam results

After going through the results of the oral exam, the mean score of students in the Oral exam increased from 5/10 before applying gamification, to 6.5/10 after applying the

strategy. Which means that gamification also helped improve students' achievement in oral exams.

All the results indicate that gamification affected students' achievement and motivation positively. In addition to that, the teacher observed that students were more excited and willing to engage in activities. This means that the first hypothesis is valid H1: If gamification approach is implemented inside grade three classroom, it will have a positive effect on students' motivation and achievement.

DISCUSSION

The results of the study, which include results of the motivation questionnaire and the written and oral exams, showed that gamification had a positive effect on student motivation and achievement. Although the method was applied only on the course of three weeks, the results were fast and positive.

Comparing the results of this study to similar studies like Leaning (2015) research, who examined the use of games and gamification to enhance student engagement on a theory-based course of an undergraduate media degree; the experimental group of students taking the gamified module enjoyed the course and put in more effort. However, the results of this study did not find evidence that gamified learning enhanced the students' attainment.

Results of the study showed how gamification has a positive effect on students' achievement and motivation, which means teachers can integrate this strategy into their classrooms to reach a more interesting atmosphere that emphasizes students' engagement at one hand and improving their performance on the other.

Teachers can adapt the content of their courses to the gamification strategy, especially that a gamified classroom can be achieved through various activities and concepts, which means there is no "one size fits all", and teachers can be flexible in using the strategy. School are also an important influence on what strategies are applied inside the classroom, if schools support gamified learning then teachers will be more willing to apply and cooperate.

Various limitations were faced throughout this study. The teacher had to follow the curriculum and couldn't apply gamification throughout the whole session. A second limitation was that the number of students in the study is only 11, a larger number on participants could have given clearer and more reliable results. Also, the time frame in which the study was applied was considered short, but the researcher had to commit to three weeks due to academical reasons.

Although the Lebanese curriculum may be rigid and not flexible enough to apply new teaching strategies inside the classroom due to the limited time, teachers can still find a way to use modern strategies in a way that goes along with the curriculum. Literature and this research support that gamification proved to be a tool that helped students learn with enthusiasm and allowed them to enhance their performance. To sum up, various stakeholders in education should cooperate to implement new teaching strategies that benefit the whole learning process, these stakeholders may be schools,

teachers, ministry of education, and others. The goal is to reach a motivating and learning friendly classrooms.

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