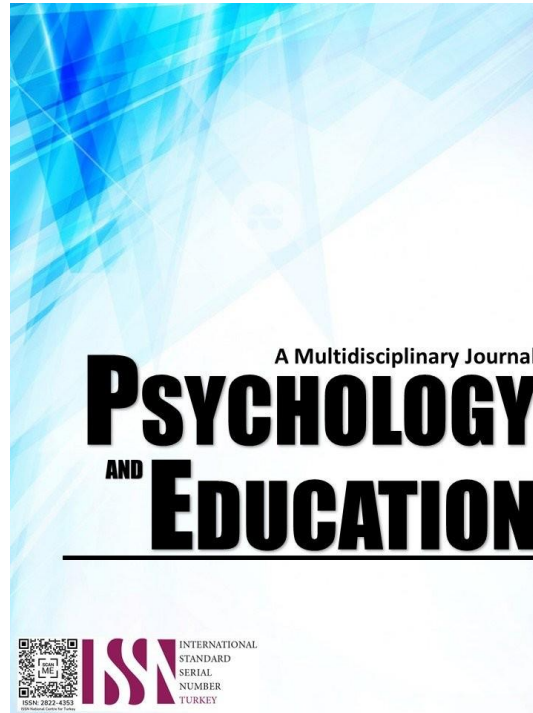


EFFECTIVENESS OF GAMIFICATION STRATEGY IN INCREASING THE GRADE 10 STUDENT'S ACADEMIC MOTIVATION



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Effectiveness of Gamification Strategy in Increasing the Grade 10 Student's Academic Motivation

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Abstract

As an essential aspect of education is to achieve academic objectives and enhance academic performance, student motivation is significant. This action research used gamification as a teaching strategy to increase the grade 10 students' academic motivation. The researchers tapped into this form of motivation by tracking the progress of each learner and providing badges for their achievements. The study utilized the researcher-made questionnaire composed of intrinsic and extrinsic motivation, as the instrument for data gathering. Statistical tools are used to analyze the data. The result showed that Grade 10 students had a very large extent of intrinsic and extrinsic motivation after the conduct of gamification. Moreover, the students had a very large extent of overall motivation. Comparing the mean results of the two components of motivation, the students were motivated more intrinsically than extrinsically after the intervention. There is no significant difference in the level of academic motivation of the Grade 10 students before and after the intervention of gamification in social studies class. Overall, these findings strongly support that gamification in education improves student motivation. Thus, gamification as a teaching strategy is highly recommended for use for it could effectively increase students' academic motivation.

Keywords: *gamification strategy, academic motivation, grade 10 students*

Introduction

When it comes to learning, students have their heartfelt desires to achieve what they want or need in terms of academic motivation. Motivation greatly affects learning; lack of motivation causes students to feel more distracted, disinterested, and reluctant to participate in class (Özen, 2017).

Upon the return of limited face-to-face classes after the hindering pandemic, students have had trouble redeeming their motivation to learn. As the researchers observed and conducted their field study in various class sessions in different grade levels in La Paz National High School, it was observed by the researchers that students seldom encountered gamification in-class sessions, and there was a lack of participation and engagement from students.

The researchers have considered that the accumulation of learning experiences must be sprinkled with gamification by incorporating different game-like- mechanics inside the classroom. Thus, the researchers felt that gamification has much room for experimentation. It has the potential to increase student's motivation throughout the learning process.

Gamification as a teaching method encourages students to participate in a game or activity to accomplish a goal, such as winning rewards or learning new knowledge. Gamification is utilizing game design strategies to include pupils in their academic work. Student engagement and learning can be increased through games and incentives. It has been demonstrated that gamification in education improves student achievement (Legaki et al., 2020). It is a means to include students in the learning process, reinforce key ideas, and promote engagement. The instructor can raise participation and interest in a class by providing a range of incentives and prizes. Gamification is the practice of incorporating game design elements into the learning environment for students. According to Guilló et al. (2019), by the conclusion of the twenty-first century's first decade, gamification has gained huge significance in delivering an impact on the learning environment. Gamification techniques are used in education to adapt game dynamics to classroom settings to enhance motivation and, as a result, the teaching-learning process. The goal is to increase teacher-student engagement to boost motivation, enhancing a student's capacity to assimilate information and develop new abilities.

Academic motivation is crucial for students to maintain their mental and emotional engagement with their studies. Gamification is a creative and effective strategy that can be used to enhance academic motivation (Xu et al., 2021). Gamification is a process that involves integrating game elements into non-game contexts to engage and motivate individuals. Gamification in education has become more popular recently due to its ability to promote active learning, enhance student engagement and improve academic performance (Manzano-Leon, 2021).

Points and rewards are two game elements that can be used in gamification to enhance academic motivation. By awarding points for completing academic tasks or achieving learning goals, students are encouraged to strive harder and put in more effort, furthermore, by offering rewards that are meaningful and appealing to students, such as badges, certificates or prizes, their intrinsic and extrinsic motivation can be reinforced (Norberto & Noriko, 2021). Progress tracking is another game element that can enhance academic motivation through gamification. By providing students with a visual representation of their progress, such as progress bars or levels, they can see how far they have come and set achievable goals for themselves. Additionally, social interactions and collaboration can

be integrated into gamification to enhance academic motivation.

Research Questions

The researchers aimed to determine the effectiveness of gamification as a teaching strategy in increasing the level of academic motivation among grade 10 students of La Paz National High School. Specifically, the researchers sought to answer the following questions:

1. What is the level of academic motivation of the grade 10 students before and after the intervention of gamification in social studies class?
2. Is there is a significant difference in the level of academic motivation of the grade 10 students before and after the intervention of gamification in social studies class?
3. How did the researchers use gamification as a teaching strategy to increase the level of academic motivation of grade 10 students? School after the intervention of gamification in social studies class?

Literature Review

Innovation, Intervention, and Strategy

Gamification has emerged to potentially provide effective intervention strategy in various fields, particularly in education. By integrating game elements such as points, badges, and leaderboards into the learning process, gamification has been shown to increase student engagement, motivation, and achievement. Given the researchers' observations of an issue regarding to student involvement, they employed Gamification as a teaching strategy to enhance students' interest in social studies class. The researchers found out during their field study on the same class where in gamification was utilized that students are in need of teaching strategies that would prompt their sense of involvement in classroom discussion, thus paved the way on the idea of gamification. The researchers saw the need for improvement as students were then uncooperative, had the most series of absenteeism among other sections and often gets low scores on quizzes and exam. It was also observed that students were unmotivated to participate in classroom activities implemented by the teachers. With this, the researchers, as future Social Studies teachers, aimed to introduce the lessons in an enjoyable way without compromising the learning process in order to address the issue observed inside the classroom. Incorporating gamification in teaching also offers the opportunity to track and measure student progress more efficiently, allowing for targeted interventions and support. Overall, gamification has the potential to revolutionize and improve the way of approach towards teaching by making it more engaging, personalized, and effective.

Achievement as an Aspect of Gamification

It deals with progression, awards, and completion. This form of motivation is when we complete a difficult task in a game; or while we are doing said task, we can see the progress we made. According to a study by Yee (2016), achievement is one of the aspects of gamification. In this study, the researchers aimed to tap into this form of motivation by tracking the progress of each learner and providing trophies of their achievements. The intervention strategy involved incorporating game elements such as points, badges, and leaderboards into the learning process to make it more interactive and fun. According to a research study by Norberto and Noriko (2021), it was presented and shown that incorporating these game elements into the learning process can lead to an increase in student engagement and motivation, both of which are crucial factors in academic achievement.

A badge is typically a graphical icon that appears as a reward for the user after reaching an achievement. Achievement badges have been used as a gamification method in educational settings in attempts to increase learners' motivation and engagement towards the studied subject. A research study conducted by Decker and Lawley (2013), noted that there is a significant shift in student behavior in terms of peer tutoring with the use of an achievement system. Achievement badges can be seen as a form of praise as they often are a positive evaluation of one's performance. There is evidence that achievement badges can have an effect on students' behavior. Denny (2013) studied the effect of badges and found out that they had a positive effect on the quantity of student's contributions during the course.

Methodology

After explaining to the participants the assent forms and obtaining their assent and their parents' consent, the gamification intervention was conducted continuously throughout the 4- week intervention in the Social Studies class of Grade 10 in La Paz, Iloilo City.

The researchers distributed a researcher-made academic motivation questionnaire composed of (20) items, (10) items for intrinsic and (10) items for extrinsic motivation designed according to the research study of Norberto and Noriko (2021) entitled "Enhanced academic motivation in university students following a 2-week online gratitude journal intervention" which conceptualizes motivation in academic settings as being composed by two different components, i.e., intrinsic and extrinsic motivation. This researcher-made instrument was content validated by the three experts in the field of Social Studies and Curriculum Development. Administering the academic motivation questionnaire before and after intervention allowed the researchers to determine the level of academic motivation of students. Utilizing the Academic Motivation questionnaire can also facilitate meaningful research on both intrinsic and extrinsic

student academic motivation, providing insights into how it impacts academic performance and identifying effective teaching practices that can enhance student motivation in the classroom.

A maximum of 30-minute interview schedule was also conducted for both the cooperating/subject teacher and the students who volunteered to participate in the interview session. The co-researchers constructed narrative reports after each day that gamification is conducted in class.

Research Design

Participants

The participants of this study are the Junior High School students of La Paz National High School, specifically the Grade 10 section Topaz. Students were selected through purposive sampling through the observation and judgment that were undertaken field study and as well as providing a short interview with the participant's classroom adviser.

Instruments

A letter of permission was secured from the principal of the school to permit the researchers to conduct the study, prior to the actual gathering of data. Initially, the researchers visited the Grade 10- Topaz to orient them about Gamification. Subsequently, the researchers integrated the gamification to the Grade 10 – Topaz as teaching strategy. The students need to pass through each level and win some rewards, they need to engage in classroom recitations, volunteer in sharing their own ideas and experiences connected and related to the lessons, win competition games with their group mates, answer timed quizzes and accomplish different learning activities provided by the researcher. At the same time, special learning badges were given to students who were able to gain special achievements with such specific conditions. For each learning point, a green strip of paper was given by the teacher and pasted in order to fill in their progress bar. With these, the researchers observed the level motivation students had during the class interaction and accomplished the motivation checklist. This study utilized a researchers-made motivation questionnaire, as the instrument in data gathering. The motivation questionnaire was distributed before the implementation and after the implementation. The implementation will took four weeks. The researchers also conducted an interview with the students as well as the subject teacher. The students were asked about their experiences before, during, and after the implementation of the gamification. The subject teacher was also interviewed about his observations regarding the effectiveness of gamification on the students. The researchers personally facilitated and administered the gathering of data upon the approval of the principal.

The researchers also observed the students and constructed weekly narrative reports about students' responses and classroom behavior during the implementation of gamification.

Procedure

This study utilized a researcher-made questionnaire composed of intrinsic motivation and extrinsic motivation items that were accomplished by the participants before and after the implementation of gamification intervention. The gathered and measured data from the questionnaire completed by students and the subject teacher were then analyzed by a licensed statistician using SPSS-Statistical Package for the Social Sciences. Subsequently, the data were categorized as a whole and show the level of motivation of students in Social Studies class through the use of Gamification.

Table 1. *Likert Scale for Level of Motivation of students in social studies class using Gamification Strategy*

Scale	Interpretation	Description
1.00 - 1.80	Very Little Extent	Students do not show any interest or motivation in class discussion when gamification is used.
1.81 - 2.60	Little Extent	Students show slight interest and motivation in class discussion but needs to be called out to participate when gamification is used.
2.61 - 3.40	Some Extent	Students are interested and motivated enough in class discussion when gamification is used.
3.41 - 4.20	Large Extent	Students are moderately motivated and shows more interest in class discussion when gamification is used.
4.21 – 5.00	Very Large Extent	Students are highly interested and motivated in class discussion, and have the initiative and confidence to participate when gamification is used.

Ethical Considerations

In order to protect the rights of the informants, the ethical aspects of the study were considered. A set of ideas guide the researchers with their study designs and procedures. Voluntary engagement, informed permission, and anonymity of data are ensured for ethical considerations. The researchers recognize that consideration of research related ethical issues is crucial throughout all stages of the study to keep the balance between the potential risks of research and the likely benefits of the research. Further, researchers consider that failure to adhere to these ethical considerations will directly affect the research's goals of transmitting real knowledge, truth, and error prevention about the research subject.

Results and Discussion

Level of Academic Motivation of the Grade 10 Students of La Paz National High School Before the Intervention of Gamification in Social Studies Class

Table 1 shows the mean result on the level of academic motivation of the grade 10 students before the intervention of gamification in social studies class. The result shows that Grade 10 Students have a large extent of intrinsic motivation ($M=4.13$, $SD=.71$) and extrinsic motivation ($M=4.11$, $SD=.72$) before the conduct of Gamification. Moreover, the students have a large extent of overall motivation ($M=4.12$, $SD=.69$). Comparing the mean results of the two components of motivation, the students were motivated more intrinsically than extrinsically before the conduct of the intervention.

Table 1. *The Mean Result on the Level of Academic Motivation of the Grade 10 Students Before the Intervention of Gamification in Social Studies*

Pre-test	Intrinsic			Extrinsic			Overall Mean	
	SD	Mean	Description	SD	Mean	Description		
Participants	.71	4.13	Large Extent	.72	4.11	Large Extent	4.12	Large Extent

Note: The description was based on the indicated scale. Very Large Extent (4.21-5.00), Large Extent (3.41-4.20), Some Extent (2.61-3.40), Little Extent (1.81-2.60), Very Little Extent (1.0-1.80).

Level of Academic Motivation of the Grade 10 Students of La Paz National High School After the Intervention of Gamification in Social Studies Class

This result is proven true and similar to the findings of the study conducted by Gomez Carrasco, et.al (2019) finds that the students had a very positive overall opinion on the effects on the motivation, both extrinsic and intrinsic. Noteworthy is the higher score given to intrinsic motivation, especially that related to the various teaching strategies used by the teachers, over the extrinsic one, where the mere fact of passing was scored lower, a noteworthy matter in itself.

The Grade 10 Topaz were asked about how they feel upon knowing that gamification will be implemented, most of their answers were:

"Medyo excited nga may kakulba ma'am siyempre 1st time mo may game sa classroom, tapos na ano man na sadyahan man syempre parts man sang amon nga ano nga pageskwela ang ipahmpang sila si may strategy bala nga tawah nga mabal an sa ulihi muna ma'am thank you" (A bit excited and nervous also since this is the first time that there will be games in the classroom, then somewhat happy because of course this game is part of our study, so there is a so called strategy that we will know in the end ma'am thank you)

Meanwhile, gamified instructional materials on student motivation were used. The participants strongly agreed that gamification in education piqued their interest and that they appreciated the activities. Moreover, as a collective response of the students, they verbalized that gamification motivated them to prepare ahead of time, to actively participate during activities and recitations, and to win badges and points, both individually and as a group (Funa, et. al., 2021).

In Funa's (2021) study, based on the journal logs of students, there were numerous reasons why they worked so hard in the game. These reasons include getting higher grades, leveling up, earning badges and points, being on the leaderboard, and dealing with peer pressure. Furthermore, in an interview with the subject teacher with his observation prior to the implementation of gamification, he stated that:

"So through gamification, the learners level of participation get higher. Since first grading and second grading, our learners inside the room are unparticipative, not motivated and the level of excitement..during classes, du medyo ara lang sa average and below (students motivation and participation is on below average to average level only) so because of gamification, I forsee nga sa ila mga faces, they are excited to explore and to learn more Araling Panlipunan because they are awaiting for their next activity, their games nga connected gid sa ila nga lesson. So makita mo ang improvement in terms of participation, scores nila nag taas, kag ang attendance nila nag improve. (There is improvement in terms of participation, scores and attendance)"

Table 2 shows the mean result on the level of academic motivation of the grade 10 students of La Paz National High School after the intervention of gamification in social studies class. The result shows that Grade 10 Students had a very large extent of intrinsic motivation ($M=4.91$, $SD=.25$) and extrinsic motivation ($M=4.90$, $SD=.23$) before the conduct of Gamification. Moreover, the students had a very large extent of overall motivation ($M=4.90$, $SD=.23$). Comparing the mean results of the two components of motivation, the students were motivated more intrinsically than extrinsically after the conduct of the intervention.

Table 2. *The Mean Result on the Level of Academic Motivation of the Grade 10 Students After the Intervention of Gamification in Social Studies Class*

Pre-test	Intrinsic			Extrinsic			Overall Mean		
	SD	Mean	Description	SD	Mean	Description			
Participants	.25	4.91	Very Large Extent	.23	4.90	Very Large Extent	.23	4.90	Very Large Extent

Note: The description was based on the indicated scale. Very Large Extent (4.21-5.00), Large Extent (3.41-4.20), Some Extent (2.61-3.40), Little Extent (1.81-2.60), Very Little Extent (1.0-1.80).

In practice, gamification has been shown capable of increasing user performance and engagement (Hamari et al., 2014, Seaborn & Fels, 2015), which indicates increased motivation. Meanwhile, studies on the effects of gamification on intrinsic motivation feature both neutral, positive and negative results (Mekler et al. 2017; Hanus & Fox 2015; Lieberoth 2015). This shows that gamification can affect intrinsic motivation in varied ways depending on implementation and contextual factors.

Meanwhile, Roy and Zaman (2018) also found out that students' extrinsic motivation after using the gamification approach in learning is at a moderate level. However, Jia, et al (2016) in examining the relationship between individual personality traits and the level of extrinsic motivation in the gamification approach shows a higher level of motivation among the students. Mekler, et al. (2013) found that the points are effective in increasing motivation and attractive to the players because it provides with immediate feedback as well as recognition in completing the activity or task given.

The Grade 10- Topaz as the respondents were interviewed and students responded when asked about how they feel in receiving points, token, and badges, in class, they stated that:

"Nasadyahan man ma'am eh syempre ang nga nabaton mo nga badge du part na na sang achievement mo kag ang nga puntos bala nga nahatag sa imo matyag mo sa kaugalingon mo may na achieve kana syempre nakabagin kana sang mga puntos halin sa teacher du gna ano ka na nila du gna dayaw bala ma'am nga du may ano kaya ka kaya mo na muna ma'am" (Happy ma'am of course we have received badges, it seems like its part of our achievement and the points that were given to us made me feel that I had achieved something. Also those points and praises from the teacher made me feel that I can do it, that's it ma'am).

This is because points have been the necessary element of gamification as it serves to be the feedback mechanism and reward in the games (Zichermann & Cunningham, 2011). Other than that, the reward can also be the critical factors for students to engage and intrinsically motivated in using the gamification approach as their learning styles to be acknowledged by their teacher or facilitator.

The Difference Between the Level of Academic Motivation of the Grade 10 Students of La Paz National High School Before and After the Intervention of Gamification in Social Studies Class

Table 3 shows the Wilcoxon Signed Ranks Test result on the difference between the level of academic motivation of the Grade 10 students of La Paz National High School before and after the intervention of gamification in social studies class. The results show that all the hypotheses will be rejected.

In conclusion, there were significant differences between the level of academic motivation of the Grade 10 students of La Paz National High School before and after the intervention of gamification in social studies class in terms of intrinsic motivation ($Z=-4.628^b$, $p=.000$), extrinsic motivation ($Z=-4.633^b$, $p=.000$), and overall motivation ($Z=-4.706^b$, $p=.000$). The results imply that the intervention had significantly increased the intrinsic, extrinsic, and overall motivation of the Grade 10 students.

Table 3. *The Wilcoxon Signed Ranks Test on the Difference Between the Level of Academic Motivation of the Grade 10 Students Before and After the Intervention of Gamification in Social Studies Class*

<i>Pre-test – Post-test</i>	<i>Z</i>	<i>Asymp. Sig. (2-tailed)</i>
Intrinsic	-4.628 ^b	.000
Extrinsic	-4.633 ^b	.000
Overall Motivation	-4.706 ^b	.000

a. Wilcoxon Signed Ranks Test

b. Based on negative ranks.

In line with Sitra et al.'s (2017) finding that gamification in the form of a badge as a reward provides strong encouragement for students to participate more actively in learning activities. This is also in line with Hamari's (2017) finding that badges can motivate an individual to engage in an activity. The findings indicate that the intervention considerably improved the overall motivation of the Grade 10 Topaz students as reflected on one of the answers of the subject teacher during the interview.

"Ah, Every learner awaits for a prize, that's the best thing this action research gives to the learners but at the end of the day the researchers emphasizes that prizes are secondary only, so through this prizes they were able to..be fully equipped for the next day that they...that they will have the topic, they equipped themselves with the learning so that they could participate well. They study the lesson ahead so it gives them the... a little of spices, that during the..the.. gamification they will get the perfect score and through this prize they are motivated that they can do more and become more because of this action research."

Yet, according to Zichermann & Cunningham (2011), both intrinsic and extrinsic motivation has to be considered in gamification development as it complements each other in human behaviour. Deterding (2011) also agreed that the pressure on extrinsic motivation might have a significant impact from the gamification to achieve the satisfaction needs, even though the game design elements deployed in the gamification is to act as the intrinsic motivation affordances.

As seen in both the subject teacher and student's responses, both intrinsic and extrinsic motivation increased dramatically with the

introduction of gamification. When asked about about the effectiveness of gamification in increasing the student's motivation in the classroom, the subject teacher said:

“ I think there is a very high significant difference on the application of gamification in increasing the level of motivation of the learners because, as a teacher, as an araling panlipunan teachers, we often heard that Araling Panlipunan is a boring subject so because of gamification we are able to let the minds of the young, that they will able to explore more, discover more, Araling Panlipunan in a new setting that is through gamification, so ah indeed gamification gives us new idea that we should use differentiated instruction such as gamification to determine what kind of learning..uhh ahmm approach that we need to give our learners and this is new to me.”

In line with that, the students were also asked the if gamification helps them become more motivated, and their answers were:

“Yes ma'am. As a student may positive impact gd samon ang gamification kay gabulig sya motivate kag bulig pgd samon to learn more kag to do better” (As a student, there are positive impacts that the gamification brings us because it helps us to become motivated to learn more and to do better)

Barata et al. (2013) found that “students were more proactive and participative” in a gamified course. Also, Charles et al. (2011) observed that learners appeared “more motivated to complete voluntary tasks” such as preparation for class, attendance and participation

Finally, when comparing the pre-test and post-test there was an increase in the intrinsic, extrinsic and over-all motivation of students. The result is similar to other studies mentioned above, in which student grade improve and level of academic motivation increases.

Conclusion

Increasing student's academic motivation is necessary to achieve academic success, therefore, there is a need to increase it before they move up to another important chapter of their education, the Senior High School. Gamification as a teaching strategy was utilized to the social studies class of Grade 10- Topaz students to achieve the goal. The academic motivation of students has indeed improved numerically, thus gamification can be effective in improving the academic motivation. Lastly, it was noted at first that before the conduct of the gamification students have shown that they are intrinsically motivated than extrinsically motivated, but other students as first are shy to participate in class discussion but during the intervention students are slowly engaging and shows motivation inside the classroom.

More importantly, students are encouraged to join and participate in class encounter through gamification, in this way they engaged themselves in different games prepared by the researchers. They are motivated because they are excited of what games that could help them learn does the researchers prepared.

Overall, these findings strongly support that gamification in education improves student achievement (Legaki et al., 2020). The application of gamification is a big help in increasing students' level of motivation. By using this type of strategy, students' knowledge, collaboration and motivation, communication and other 21st century skills may be developed. Thus, gamification as a teaching strategy is highly recommended for use for it could effectively increase students' academic motivation.

However, the result of this study may only be applicable to the Grade 10 students of Social Studies and same research on the effectiveness of gamification intervention may be conducted to other subjects and levels.

The following recommendations are made and offered based on the findings of this research:

Gamification should be utilized as a teaching approach, particularly in social studies. Based on the findings of this study, it has been adequately stated that gamification method enhances the teaching experience by addressing intrinsic and extrinsic motivation, applying reward systems, and encouraging student collaboration. Gamification is a teaching method that has been gaining efficiency in recent years involving the integration of game-based elements into the learning process to increase student engagement and motivation. Upon incorporating gamification into teaching, educators can design a learning curve for students based on their personality traits.

Additionally, gamification is the use of game principles and components in non-game environments to increase motivation and engagement. Because it increases students' motivation and engagement in the learning process, gamification can therefore be a successful teaching strategy.

To the researchers, as future social studies teachers, the intervention strategy used in this study can be utilized towards diverse classrooms. Gamification will be established as a highlight to create an interactive teaching environment and encourage a highly motivated classroom setting, to enhance adopt, modify and reuse gamification as a teaching strategy or approach.

To the students, as 21st century learners, gamification extensively targets to improve student's motivation inside the classroom, students will cultivate an engaging learning environment through the comprehensive use of gamification. The intervention strategy constructed and adapted in this study actively supports students to monitor their own learning progress through the utilization of the learning progress bar. This actively contributes to the personal growth of the students inside the classroom. Evidently, the study will improve

the intrinsic and extrinsic academic motivation of the students. Moreover, it is important for researchers to consider the ethical implications of using gamification in research studies. They should be transparent with participants regarding the use of gamification, obtain informed consent, and ensure that it does not have a negative impact on their well-being.

To the professional social studies teachers, teachers and professors specifically who are teaching in social studies subject are highly encouraged to incorporate or implement gamification strategies into their classroom activities, assignments, and assessments. As teachers were to be informed on how gamification was utilized and incorporated along with the invention of the intervention strategies by the researcher, they can get a glimpse or be enlightened on how gamification should be utilized. Teachers will further understand the purpose of gamification and will be knowledgeable on how to utilize it effectively in class. It is crucial that teachers make sure the aforementioned teaching strategy is applied to a lesson or topic that is appropriate for it. This study presented how establishing clear goals is important before incorporating gamification inside the classroom. This will ensure that the gamification elements are aligned with the desired outcomes and that their effect can be accurately measured.

To the school curriculum, including gamification in the enhancement of the school curriculum for various fields is recommended to educational institutions. The study, along with the accommodation of the cooperating schools have strived to inform and encourage educational institutions to invest in accessible and user-friendly gamification strategies to facilitate the implementation of such effective teaching strategies.

To the future researchers, gamification will benefit future scholars who sought to utilize additional sources connected to gamification. The findings of this study will further guide the future researchers to adopt and reuse the intervention strategy we utilized, which is proven to enhance the motivation of the students that was presented evidently in the quantitative and qualitative research instruments used in this study. Academically, this research study ideally contributes to professional growth. Finally, encouraging future researchers to conduct additional research and studies on the role of gamification in research studies is crucial. Since numerous research studies have already proven the effectiveness of gamification in terms of enhancing student motivation. Future researchers should consider other domains other than student's motivation if this study would be taken in consideration.

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