

Gamification as an Instructional Strategy in Motivating and Improving the Academic Performance of Students in Practical Research 2

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ABSTRACT

Research is a 21st century skill to develop. The learning competencies must be well taught as the basic step prior to research paper writing. However, teacher-delivered factual material thru rote memorization is often tedious and boring resulting to low retention of concepts and low MPS. In this pre-experimental research, gamification was used as instructional strategy to motivate the students and to increase their academic performance. One hundred thirty two (132) students from 3 intact classes of General Academic Strand (GAS) and 97 students from 2 intact classes of Technical Vocational and Livelihood (TVL) were used as the subject of the games while convenience sampling was used to select the students to give feedbacks about the strategy. Pretest-posttests questions were validated by three research experts while perception questionnaire was adopted from Alfabeto (2010) to gather the students' feedback about the strategy. Pretest was administered at the onset of 2nd grading period and 3 weeks after, the posttest was administered. Results revealed that pretest MPS of both GAS and TVL *did not meet expectations* with 41.54% and 38.54% respectively while after the treatment, the posttest MPS revealed *outstanding* with 90.69% for GAS and *very satisfactory* for TVL with MPS of 85.45%. T-test revealed that there were significant increase in the MPS of both GAS and TVL with a p-value of 0.00. Meanwhile, GAS and TVL students found gamification as *very much* appealing and acceptable that made the lesson easy to understand; and playful activities were *very much* interesting resulting to active participation. TVL students found it as *very much* meaningful and relevant to their real life while GAS found it *much* relevant and provides meaningful learning. The project's implication is of two-fold: first; conduct seminar workshop to develop research modules incorporating games as instructional strategy. Second; incorporate games in teaching research learning competencies.

KEYWORDS: *Practical research 2 learning competencies, Poor retention rate, Low MPS, Gamification, Motivation, Academic performance*

I. INTRODUCTION

Recreational games are part of everyday lives, both children and adult. Addiction of these games could result to low interest in classroom learning which could end to poor academic achievement. There are various approaches offered to motivate the students to learn however, teacher-delivered factual material thru rote memorization could still be seen used by teachers which is often tedious and boring. This problem must be acted upon by concerned educators.

According to Marzano, 2010, games lead to increase students' academic achievement. Educational games are highly motivating and accomplish the same objectives. (Glendon & Ulrich, 2005). In addition, incorporating games in teaching according to Dewey, 1916 plays significant role in teaching methodology.

The Experiential Theory of Rogers (1987) expounds that significant learning takes place when the

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activities are relevant to the personal interest of the students. Thus, teachers need to always consider the use of varying strategies like cooperative and fun game activities to teach the lesson concepts.

According to DepEd Order #73 series of 2012 entitled Guidelines on the Assessment and Rating of Learning Outcomes under the K+12 Basic Education Curriculum, games can be a formative assessment strategy to assess students' understanding, it is not necessary to be written all the time.

One of the games to be incorporated is the baseball game. This is patterned from the actual outdoor baseball game but instead of the use of a bat and a ball, the game requires set of questions in increasing difficulty for single, double, triple and homerun. This

was used either in reviewing concepts, in developing and processing the lesson as well as on assessing or evaluating the cognitive understanding of the students.

Aside from this game, dartboard game was incorporated in teaching the instrument development for the students to have a thorough understanding about validity and reliability of the research instrument. Cabbage relay was often used to review the lessons while crossword puzzle, jumbled words were for drill purposes. Fact or bluff also was another fun game activity patterned to the well-known celebrity bluff game of GMA Network. In educational fact or bluff, there were student bluffers who will try to confuse the student contestant.

Fun factor is the reason why games are popular as experiential learning techniques. Learning through fun helps the learner for a longer period. It is a powerful learning anchors that fights against dullness due to rote memorization and recitation (Antonio and Celocia 2003).

Education researchers encouraged the teachers to foster games in the classroom as these activities are undertaken not for enjoyment only but also have significant role in the teaching methodology (Dewey, 2003). These games are called serious games that has serious goals instead of mere entertainment. If these serious goals are attained, then games promote better learning for improved academic performance.

Therefore, it is on this context that the researcher advocate the promotion of learning through real-life situation by conducting an action research using gamification as an instructional strategy in teaching research concepts in Practical Research 2.

1.1. Significance of the Study

Students: Research writing is typically tiresome and boring but research baseball maybe of great help to

them because the major learning output of this strategy is for mastery of the concepts that are necessary in the writing process.

Research Teachers: Useful for teachers in reviewing the lessons. Teachers will be facilitators while the students are enjoying the game. This is an independent learning activity that will help ease the burden of teachers

Department of Education and School Administrators: This would be of great help for Department of Education and school administrators in designing and planning for School Based Management (SBM) In-Service Training seminars and workshops for the enhancement of teachers' capability in teaching research concepts.

II. REVIEW OF RELATED LITERATURE

2.1. Conceptual Literature

Game as Instructional Strategy

Games are forms of play which involve two opposing teams competing against each other for a common goal-that is to win. Zhao (2010) describes games as competitive interactions bound by rules to achieve specified goals that depend on skill and often involve chance to win the game. According to Dewey,1938; Gros, 2003; Prensky, 2007) games play a significant role in teaching methodology. It is a dynamic, intrinsically motivating, and involve high levels of involvement (Malone, 1981 & Hood, 1997).

Educational games can be simply defined as motivational games designed for learning which subset both fun and play. Like other games, educational games are artificial conflict or contest governed by sets of rules by which students engage to develop mental skills which need materials like pictures, cards, real objects, word strips, maps, flashcards, and/or consumable materials.

Baseball Game

One of the games incorporated in gamification is baseball game. It is a game that has been played in a number of settings including Sabbath School, youth group, family gatherings and even online. Instead of bat and ball, this requires 4 sets of questions with increasing difficulty (Christian Book: Bible Baseball, 2010). The first player in a team bats the spinner of the baseball game board to have a chance of stopping homerun base with corresponding homerun question which is equivalent to the highest score among other bases. After the player has chosen the question on that base, the opponent will ask the question for the student to answer within an allotted thinking time. If the player answers correctly, the scores will be credited to that base. The scoreboard changes every after the questions are correctly answered. Teams will

be given points when players make it to homerun base. A team may continue to bat until it receives three outs and when that happens, the opposite team goes up to bat. Before the start of the game, the teachers will determine the allowable number of innings or length of time. At the end of the predetermined innings, the team with the most run wins (Sertel, 2010; Scanlon 2010; May, 2010).

Dartboard game

Kleeman (2015) used dartboard games to teach research concepts. To play, students have to hit the bull's eye using the three darts closer to each other to arrive with a valid and reliable score. It is the student who will tell whether their hits are valid and reliable, reliable but not valid, valid but not reliable and not valid and not reliable.

Cabbage play

Cabbage relay can be played by passing an improvised cabbage while the music play. The student who holds the cabbage when the music stops have to peel one strip from the cabbage and then answer the question within it.

Fact or Bluff

Fact or Bluff in research is an innovation from the celebrity bluff of Eugene Domingo in GMA Network. This also consists of student bluffers who has the role of confusing the student gamers. The contestants are group in teams instead of individual. The teams will attempt to outsmart one another by answering questions and performing challenges which will make them advance to the final round.

Pros of Educational Games

Games are the most **ancient and time honored vehicle for education**. They are the original educational technology having received the seal of approval in natural selection. Game-playing is a vital educational function for any creature capable of learning (Crawford, 1982). McFarlane (2002) viewed games as historically known as “edutainment” marketed as being accurate, relevant to formal curriculum and developing specific knowledge and skills through fun.

Fun factor is the reason why games are popular as experiential learning techniques. Learning through fun helps the learner to retain the lessons for a longer period. A fun learning environment with plenty of laughter and respect for the learners' abilities foster an effective experiential learning environment. Supporting to this idea are Antonio and Celocia (2003) who asserted that students learn more when they are enjoying the task, when they are involved, and when they are fully focused rather memorizing isolated facts.

Motivation is one among the positive effects of educational game play. As posited by McFarlane (2002), there are two key themes common to the development of games for education which are: first, the desire to harness the motivational power of games which is “making learning fun, and second, the belief that learning is acquired through doing in games.

In addition to sustaining learners' interest, Hogle (1996) considered games as **cognitive tools**. Games can soften the rough edges of difficult. This cognitive benefits of educational gaming are supported by Piaget's learning theory which serve as important assimilation strategies considered essential in learning process.

Retention of the instructional material embedded in educational game is an important issue. There is some evidence that game formats may improve retention of what is learned. Pierfy (1977) reviewed twenty two comparative gaming studies and concluded that the used of games demonstrated greater retention of the learned information over time than conventional classroom instruction.

Competition is one variable of educational games. The result is either winning or losing. To most people, the understanding of losing or failing in the game is not as threatening to students' psyche because they know it is just a game. Knowing it is just a game may help to ease anxiety and intimidation to the point that the learner is comfortable enough to practice games sometimes making mistakes, and learning from those mistakes and correcting them (Brozik, 1999). While anxiety is replaced with competitiveness through motivation of being rewarded, the main point is that a concept is learned and perhaps learned in a way in which it will be retained vibrantly as compared to a more formal method in rather static setting. It is clear here that through group games, students can learn from one another through the spirit of competition.

Another premise of educational games are that teaches **cooperation and teamwork** and **conflict resolution** (Neubecker, 2003). Game players tutor their peers and work as a team. These can help create an environment for shared values, deeper communication, congeniality and emotional openness. Games can teach many valuable academic and social skills like team management, communication and leadership (Nilson, 1998).

Part of educators' mission is to instill good values. According to Tolbert (2010) classroom games can teach students **good values**. Good values may lead to potentially prepare students for the challenges in modern society.

Statistics as set out by Dryden and Boss (1999) as cited by Longatan (2009), reading contributes 10% learning, hearing by 15% but experience by itself provides 85% learning. Aligned to this is the well-known principle “I hear and I forget, I see and I remember, I do and I understand.

Educational Games and its Effect to Academic Performance

Marzano (2010) strongly recommends games be used in the classroom as he posited that games enhance student’s academic achievement as it increase motivation that include challenge and curiosity (Zhao, 2002). Marzano (2010) explains that of the 60 studies he has been involved in regarding the effects of games on student achievement, “on average, using academic games in the classroom is associated with a 20 percentile point gain in student achievement” Although quantitative evidence is quite scarce regarding the use of board games and television based review games, there is evidence that shows positive results from computer based games and other cooperative learning techniques, such as the Team-Games-Tournament (TGT) method and the knowledge net framework.

Research Literature

Pros of Educational Games

Liu & Chen (2013) investigated the perceptions of students regarding the integration of game into science learning as well as the educational benefits of the game with regard to learning performance, they found out that students demonstrated positive attitudes toward the use of the educational card game Conveyance Go in science learning and an increased improvement of students’ scientific knowledge in transport and energy

In the study entitled “Using Mobile Game to Enhance the Learning Motivation and Performance in Higher Education” by Daungcharone (2016), he claimed that learners’ motivation and performance was improved. Thus, thus he recommended games in teaching by using mobile game since mobile technologies is equipped with advance features and most learners use them in a regular basis

Vega, et.al (2009) conducted a true experimental research design employing the pretest and posttest to determine the effectiveness of scientific games as a strategy in teaching chemistry to 22 third year students of EARIST Laboratory High School in Nagtahan, Sampaloc, Manila during the school year 2007-2008. They were divided into two groups and randomly assigned to experimental and control group. The experimental group was exposed to actual application using four (4) scientific games as motivation while the control group was exposed to

the traditional method only. The pretest and posttest mean of the experimental group and control groups revealed the mean difference of experimental group is 6.7 as compared to 6 mean difference for the control group which show that the experimental group learned very well with the lesson after the experimental period. The p-value of 0.0004 showed significant difference in favor to experimental group.

In the study conducted by Papellero (2010) at Bunawan National High School, School Year 2010-2011 to First Year High School Students using Science Baseball Game as an instructional Strategy, the data showed significant difference in the mean score of the experimental and control group which favor the former with 0.68 and 1.8, respectively.

On the other hand, Shresta (1990) used games in teaching the Principles of Underwater Sound Propagation. She compared a simple game to a more traditional lecture-type instruction on the principles of underwater propagation. The author of this research found no learning differences among two groups of college students. However, the author did find the learners in the game condition spent more time interacting with the game and concluded that games may have motivational benefits over the traditional instruction.

III. RESEARCH QUESTIONS

This aimed to determine the effect of using games as an instructional strategy to motivate and improve the academic performance of Grade 12 students in Practical Research 2.

1. What is the pretest and posttest mean percentage scores of Grade 12 GAS and TVL students in Practical Research 2?
2. Is there a significant increase in GAS and TVL students’ pretest MPS before the treatment and posttest MPS after the treatment in teaching Practical Research 2?
3. What are the perceptions of GAS and TVL students towards the gamification as an instructional strategy in teaching Practical Research 2?

3.1. Null Hypothesis

1. There is no significant increase in GAS and TVL students’ pretest MPS before the treatment and posttest MPS after the treatment in teaching Practical Research 2.

3.2. Theoretical/ Conceptual Framework

This study is anchored in **VAK Theory of Learning style** by Fleming (2001) and **Multiple Intelligences** by Gardner which claimed that learners learned in different ways. VAK is the common and widely-used model of learning styles. According to this model,

most people possess a dominant or preferred learning style; however some people have a mixed and evenly balanced blend of the three styles. Meanwhile, Multiple Intelligences by Gardner (1999) consists of nine (9) learning styles namely: Visual/Spatial; Verbal/Linguistic; Mathematical/Logical; Bodily/Kinesthetic; Musical/Rhythmic; Intrapersonal; Interpersonal; Naturalist and Existentialist. While Rogers (1987) in his **Experiential Theory** expounds that significant learning takes place when the activities are relevant to the personal interest of the students. Thus since majority of the Grade 12 TVL and GAS are kinesthetic and games are kinesthetic strategy, then therefore, there is no enough reason to apply Research baseball.

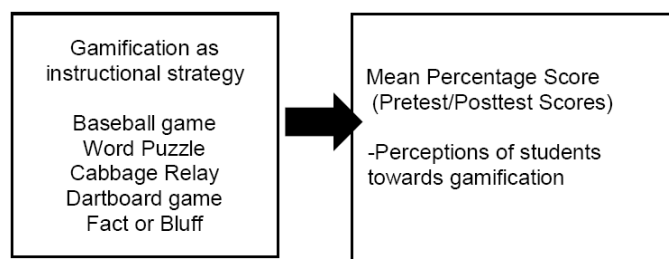


Figure 1 Conceptual Paradigm of the Study

The first table is the independent variable gamification to treat GAS and TVL students. The second table is the dependent variables which are the Mean Percentage Score (Pretest & Posttest) and the students' perceptions towards Gamification.

IV. SCOPE AND LIMITATION

The scope of the study was delimited to the use of games such as Baseball game, dartboard game, cabbage relay, crossword puzzle and jumble words, fact or bluff to the three General Academic Strand (GAS) sections and two sections from Grade 12 TVL students and determined on how these games affect the academic performance of the students. The scope of the research included the gathering of the perceptions of the students towards gamification. Both data were gathered during second quarter of the first semester, SY 2017-2018.

V. RESEARCH METHODOLOGY

5.1. Sampling Procedure/Participants of the Study

The researcher used five Grade 12 intact classes. Three sections from GAS and two sections from TVL.

Sections	Population
GAS Socrates	44
GAS Plato	45
GAS Rousseau	43
TVL Leo	53
TVL Virgo	44
Total	229

5.2. Data Collection Procedure

Before giving the treatment, the researcher prepared a 30-item multiple choice test questions with Table of Specifications. The test undergone face and content validation by the Division Science Coordinator of Agusan del Sur Division, one research teacher and one English teacher to ensure its validity. The said test was administered as pretest prior to the actual administration of the games. The papers were then retrieved, checked, and recorded. After the pretest, the respondents were then treated with gamification for four weeks. After the treatment, the respondents were given the same 30-item test as posttest. The papers were then collected, checked, and recorded. Perceptions were also gathered by the used of researchers-modified questionnaire adopted from Alfabeto (2010) and validated by Garcia, et al (2011).

Management of Classes

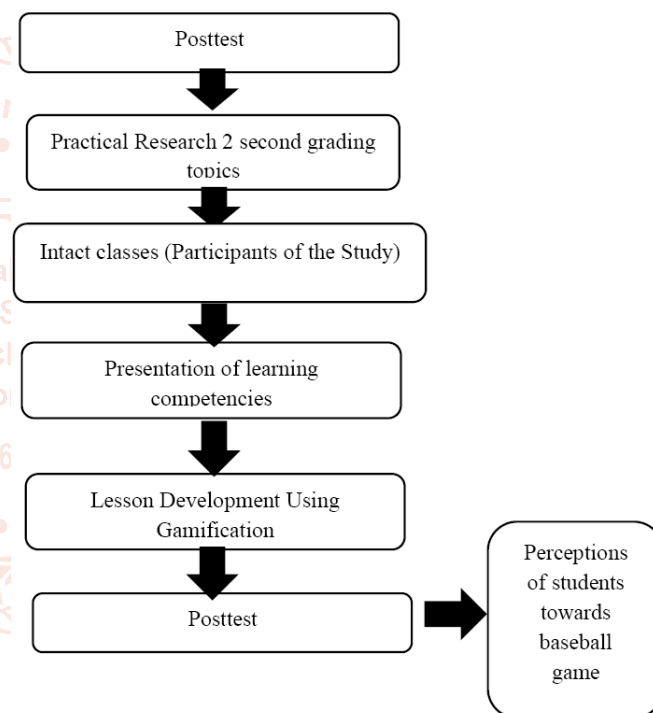


Figure 1: Flowchart of the Management of Classes

5.3. Ethical Issues

The researcher wrote a letter to the School Head signifying his approval to conduct the study. The letter approved were then be used to inform the subject teachers and the five (5) advisers of the target sections. All participants in the study were assured that any personal information about them will be held in confidence. The participants were assured that no major and minor harm and risks to be experienced by the students. Students will be treated honestly and fairly. Participation of the game is voluntary.

5.4. DATA ANALYSIS

For number 1, Mean were used to determine the pretest and posttest Mean Percentage Score.

For number 2, T-test for correlated sample was used to determine the significant difference between the pretest and posttest scores of the students.

For number 3, mean was used to get the perceptions of the students towards gamification.

VI. PLAN OF ACTION

Phase	Objectives	Activity/ Support System	Resource Requirements		Time Frame	Indicators
			Human	Material		
Phase 1	Present the study in the local school community	ASNHS-PNU action research mentoring program	Researchers PNU panelists	Laptop Projector Sample baseball board Video	April	Study presented MOVs/narrat ive reports
Phase 2	Present Research Baseball for Research teachers to benchmark	Conduct of Division-wide Seminar Workshop in Instructional Strategies	Speakers Facilitators Participants	Research baseball materials Projector Laptop Handouts Activity Materials	May	Research baseball presented Participants' outputs Feedbacks
Phase 3	Present in the International Forum	International Research Forum	PNU facilitators	Research Paper	-	-
Phase 4	Publish					

VII. COST ESTIMATES

Activity	Particulars	Cost Estimates
1. Concept Paper Making	10 reams short and A4 bond paper	5,000.00
	Internet expenses	1,000.00
	Printing and Binding	300.00
	Flash drive 16GB	500.00
	HDMI	500.00
	Printer ink (colored and black)	1,500.00
2. Outlining and Proposal Making		
3. Preparing Pretest/Posttest questions		
4. Preparing the Instructional Materials (games)	10 reams neon paper	3,000.00
	10 pcs velum	200.00
	5 transparent frames	300.00
	lamination	1,000.00
	clear folders	100.00
	glue	50.00
	staple wire	50.00
5. Data Storage	Hard drive	6,000.00
6. Data Gathering	snacks	500.00
7. Data Consolidation and Analysis	Experts/Analyst of Data	3,000.00
8. Submission of papers for correction	Internet Expenses	1,000.00
	Printing	1,000.00
9. Final Editing		
10. Submission of Paper in Journal Format		
11. Acceptance of Journal		
12. Revision		
13. Presentation of Findings	Meals and snacks	5,000.00
	Certificates	
	Sound System	
	Incidental Expenses	
GRAND TOTAL		30,000.00

VIII. RESULT AND DISCUSSIONS

Table 1 Pretest and Posttest Mean Percentage Scores of GAS and TVL Students in Practical 2 Learning Competencies

Sections	MPS Pretest	Qualitative Description	MPS Posttest	Qualitative Description
GAS	41.54%	<i>Did not meet expectations</i>	90.69%	<i>Outstanding</i>
TVL	38.54%	<i>Did not meet expectations</i>	85.45%	<i>Very Satisfactory</i>
Mean%	40.04%	<i>Did not meet expectations</i>	88.07%	<i>Very Satisfactory</i>

Table 1 shows the pretest MPS of both GAS is 41.54% while TVL students with 38.54% which means that they did not meet the expectations. However, after taught using games, the posttest MPS of GAS is 90.69% which means *outstanding* while TVL has 85.45% which has a qualitative description of *very satisfactory*. This further revealed means that though students passed research subjects in their previous grade level, still they need to be seriously taught.

It can be noted that there is a significant increase in the academic achievement of the students. Aligned to this result is Marzano's (2010) claim that games in teaching increase student's achievement. In addition, the increase of students' academic achievement

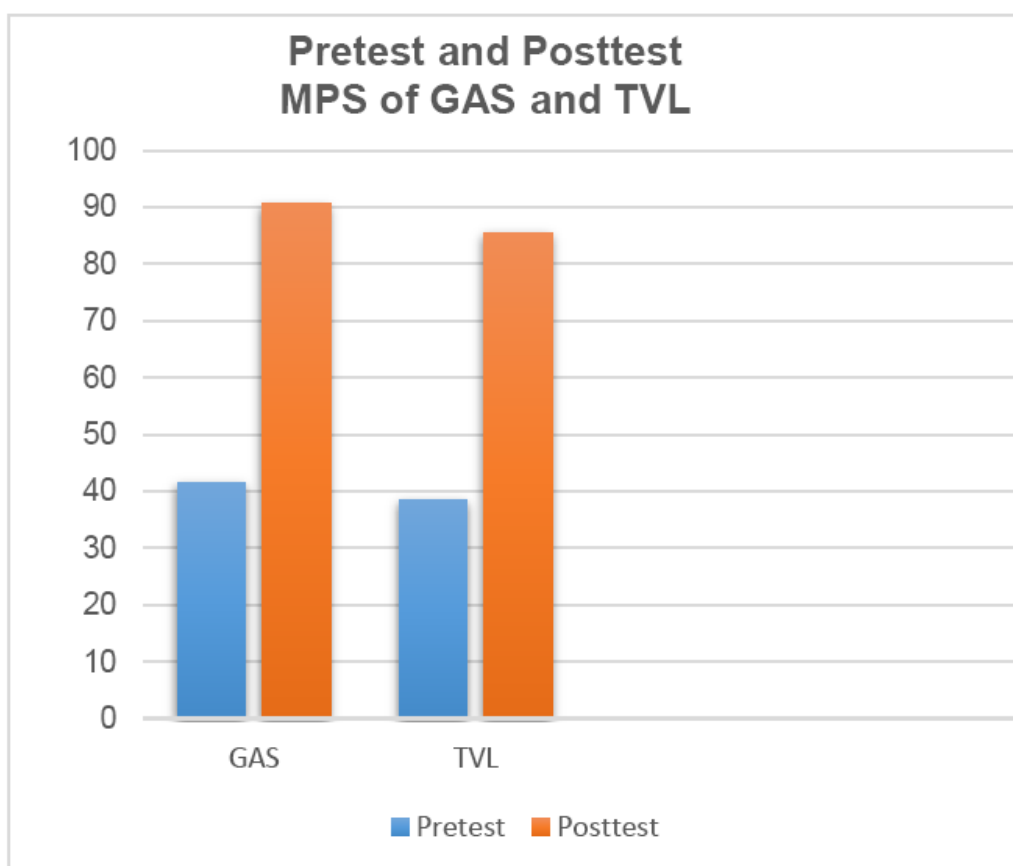


Figure 2. Pretest and Posttest Mean Percentage Scores of GAS and TVL Students in Practical 2 Learning Competencies

The figure above shows a clear picture of the increase of the scores of both GAS and TVL students. This shows how gamification play a significant role in classroom instruction.

Table 2 Paired T-test of Significance between Pretest and Posttest Scores of GAS and TVL in Practical Research 2 Learning Competencies

Paired T-test						
		Mean	t	df	Sig (2 tailed)	Qualitative Description
Pair 1	PretestGAS-PosttestGAS	-1.47500E1	-58.250	131	.000	<i>Significant</i>
Pair 1	PretestTVL -PosttestTVL	-1.38646E1	-42.617	95	.000	<i>Significant</i>

Table 2 shows the significant increase between the pretest and posttest scores of the students using T-test for correlated sample at 5% margin of error. The P value is 0.000 which tells a significant increase. The result strongly tells that gamification is effective strategy for the students to learn.

The result runs parallel to the study of Vega, et al (2009) when they determined how effective the game strategy was in teaching chemistry to the third year students of EARIST Laboratory School. It was found out that there was a significant difference statistically between the students who were taught with games and those without games.

Table 3.1 Students' Perceptions on the Appeal and Acceptability of Gamification as an Instructional Strategy on teaching Practical Research 2 Concepts

No. Item	Mean	Qualitative Description	Mean	Qualitative Description
	GAS		TVL	
1. The game strategy provides ease in learning the concept	1.72	Very Much	1.33	Very Much
2. The lessons integrating game strategy are easy to understand	1.12	Very Much	1.30	Very Much
3. The directions/instructions of the games are easy to follow	2.01	Much	1.33	Very Much
Overall Mean	1.61	Very Much	1.32	Very Much

It has been found that TVL students have positive feedbacks which is *very much* as to the gamification' appeal and acceptability though GAS feel the strategy provides *very much* ease in learning the concepts but generally, they found games as much easier to understand and the directions are much easier to follow.

These tend to show that gamification facilitates ease in learning the concept because these have connections to real life like baseball and dartboard games.

Table 3.2 Student's Perceptions on the Relevance and Meaningfulness of Gamification as an Instructional Strategy on Teaching Practical Research 2 Concepts

No. Item	Mean	Qualitative Description	Mean	Qualitative Description
	GAS		TVL	
1. The game strategy contains playful activity to facilitate learning	1.71	Very Much	1.28	Very Much
2. Interactive activity provided by game strategy brings out active responses from the students	2.04	Much	1.18	Very Much
3. The procedures of the games are related to real life	1.37	Very Much	1.68	Very Much
Overall Mean	1.70	Very Much	1.38	Very Much

It can be gleaned from the table that GAS and TVL found gamification as *very much* relevant and meaningful however GAS found the games as *much* interactive that brings out students to respond actively.

McFarlane (2002) posited that learning is at its most vibrant when it has relevance to the needs of the learner. As shown in the table, TVL has highest rating compared to GAS which shows that they inclined most to games than GAS. This learning through fun helps the learner retain the lessons for a longer period. A fun learning environment with plenty of laughter and respect for the learner's abilities foster an effective experiential learning experiences. In addition, Antonio and Celocia (2003) revealed that children learn more when they are enjoying the tasks, when they are involved in and when they are fully focused rather than memorizing isolated facts.

Two of the games with most connections to real life are the baseball and dartboard game. The procedure of the games were patterned for the students for students' easy understanding. Boud (1985) has his idea that students learn better when they can relate the concepts to their real world experiences.

Table 3.3 Student's Perception on the Interest and Quality of Gamification as Instructional Strategy on teaching Practical Research 2 Concepts

No. Item	Mean	Qualitative Description	Mean	Qualitative Description
1. The game strategy is enjoyable	1.81	Much	0.85	Very Much
2. The presentation of the lesson using games strategy makes more interesting	1.76	Very Much	1.45	Very much
3. The learning activity using games strategy encourages active participation	1.79	Very Much	1.38	Very much
Overall Mean	1.72	Very Much	1.22	Very much

GAS and TVL have the same perceptions as to how much interesting the concept presentation and how much the games encourage students' active participation. Though GAS found it much in terms of quality, but in general, the students found it very much interested and with high quality.

According to Baker (1999), learners understand concepts better in an interactive and cooperative setting as opposed to working alone. An advantage of the game is that learners are given opportunity to be active participants rather than passive recipients of information (Vega, et.al, 2009). When something is fun to do, students are generally more willing to be involved and are less hesitant to try it. In fact, school institutions have become more willing to try game activities to enhance learning.

IX. SUMMARY, FINDINGS, AND RECOMMENDATIONS

The goal of this study is to motivate the students to learn the lesson concepts in order to increase the academic achievement of the students. This was conducted to the senior high school students of Agusan del Sur National High School during the second quarter of the first semester, school year 2018-2019.

Findings

1. Pretest MPS of both GAS and TVL *did not meet expectations* with 41.54% and 38.54% respectively while after the treatment, the posttest MPS revealed *outstanding* with 90.69% for GAS and *very satisfactory* for TVL with MPS of 85.45%.
2. T-test revealed that there were significant increase in the MPS of both GAS and TVL with a p-value of 0.00.
3. GAS and TVL students found gamification as *very much* appealing and acceptable that made the lesson easy to understand; and playful activities were *very much* interesting that resulted to active participation. TVL students found it as *very much* meaningful and relevant to their real life while GAS found it *much* relevant and provided meaningful learning.

Conclusions:

1. Games helped the students' greater retention of the learned information as reflected in increase mean percentage scores in the posttest.
2. The academic performance of the students had significant increased after engaging in interactive game activities.

3. Students were well-motivated and interested to learn the lesson concepts when they were exposed to meaningful and relevant learning activities that had connections to real life experiences through the use of gamification.

Recommendations

1. Conduct training and seminar-workshops to develop research modules incorporating games as instructional strategy
2. Use games in teaching research learning competencies
3. Innovate other popular games for classroom instructional use.

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