

GAMIFYING LIBRARY ENGAGEMENT: A STRATEGY FOR SUSTAINABLE PATRONAGE AT FUTO

Emeka Chukwu Iwu¹, Ngozi Adaobi Onu²

Article Info

Keywords: Library, Digital Transformation, Information Management, Knowledge Preservation, Academic Excellence

Abstract

Libraries have long been hailed as the vibrant epicenters of academic excellence, poised to positively influence students' academic achievements through the wealth of resources they offer. Neglecting these valuable repositories, on the other hand, can lead to detrimental consequences. In this context, Ngozi (2017) defines a library as not just a repository of knowledge but as a dynamic social institution, a critical resource hub providing trustworthy information and dedicated to the preservation of recorded knowledge for the benefit of humanity. Aina (2004) underscores the library's role in collecting, processing, storing, and disseminating recorded information to facilitate reading, study, research, and consultation. The relentless march of change has ushered in new paradigms in information and knowledge management. This shift has accelerated the transformation of data, information, and knowledge into digital formats. It has witnessed remarkable advances in telecommunication, a deep dive into fiber-optic communication, the proliferation of wireless technology, and the viral growth of software. These developments have provided powerful tools for processing and transmitting information. However, as a consequence of this progress, many scholars have increasingly turned away from traditional libraries, resulting in a decline in the library's patronage and posing a challenge to its fundamental objectives (Abraham and Leavy, 2007).

Introduction

A library is often described as a pulsating nerve centre of academic excellence, which its patronage of resources is capable of stimulating students' academic performances in the positive direction whereas its neglect results otherwise. Ngozi (2017) defined library as a repository of knowledge and an active social institution, a vital resource centre for reliable information and meant to conserve the recorded knowledge for the profit of man. Aina (2004) accentuated that a library is concerned with the collection, processing, storage and dissemination of recorded information for the purpose of reading, study, research and consultation.

¹ Federal University of Technology, Owerri

However as the stroke of change wipes faster, new processes in information and knowledge management have paved way for the rapid conversion of data, information and knowledge into digital form, improvement in telecommunication, major dive into fibre optical communication, wireless technology and also viral development of software, which consequently, has provided powerful techniques for processing and transmission of information. This progress has made many scholars to neglect the library and has decreased the level of patronage the library previously receives, hence challenging its cardinal objectives (Abraham and Leavy, 2007).

The library of the 21st century is not only concerned with acquisition of resources but its utilization. More so any library that cannot ensure that their resources are fully utilized, have not fulfilled her mandate, hence emphasis is shifted from ownership to assess. Therefore, innovative activities aimed at creating and designing best-way-approach towards sensitizing and encouraging use of library resources are evolving. It is against this backdrop that FUTO Library in August, 2017 created its innovative services unit, designed with indoor games among others, to stimulate students' interest in patronizing the library and enhancing its academic performance.

Statement of the Problem

The primary focus of library institutions is the preparation of a literate society. To achieve this aim most academic libraries make concerted efforts to ensure adequate provision of resources and services to its clientele. They also strive to create a conducive learning environment in which faculty and students are provided with a variety of resources and services whose patronage could ultimately turn one to a competent user. But despite increasing the library stock, students often time shun the library, resulting in low library patronage as well as low academic performance. This tendency has necessitated a growing concern in librarianship. The questions that arise are; what strategies can best be adopted by libraries/ librarians to enhance its patronage and as well improve academic performance? Can the use of games enhance students' patronage of the University library? Or how can university libraries use games as a strategy for enhancing student's sustainable patronage? Previous works abound on strategies to enhance patronage of academic libraries in Nigeria but none focused on games. There are also vast literature deployed extensively in the field of education, library and games (Yang, Chen, & Jeng, 2010; Chiang, Lin, Cheng, & Liu, 2011). But no empirical research seems to center on how university libraries in Nigeria use games as a strategy for enhancing student's sustainable patronage. It is therefore this gap that this work seeks to fill. Thus, this study is an attempt to assess how game strategy could enhance library patronage in a university system and perhaps close the yawning gap.

The roles games play in physical and mental well being of individuals are enormous as it helps to relax nerves and tension as the case may be. However, using games to attract students' patronage of the library can be exciting but also challenging. This was also agreed by Dana (2015) that indoor games and activities can be challenging; keeping students excited about learning but adds an element of fun. According to ALA Games RT (2019);

Academic libraries have a mission to curriculum support; games provide stories and information presented in a new format that encourages critical thinking and problem solving. Games can enrich vocabulary and expose players to language roots. Games encourage literacy activities like reading, writing and creating content about and around the game.

Similarly, Adams (2013) enthused that provision of games in the library is both striving to deliver what the patrons like and a struggle for relevance in a world where people are willing to pay money for commercial commodities that library offer for free. Katie (2009) posited that research into learning shows that people learn

in different styles; traditional book-learning may be effective for one student while game-learning may have a major impact on another, adding that library ought to house games as part of its stock.

Objective of the study

The overall objective of the study is to assess the use of games as a strategy for enhancing students' patronage of academic libraries that will in turn improve academic performance. Specifically the work examined students' responses to games as a means of enhancing library patronage at the Federal University of Technology, Owerri.

Conceptual Framework

The concept of gaming as a tool to enhance user engagement and learning has also become increasingly popular. "Gaming" can be defined as "the use of game design elements in non-game contexts" (Deterding, *et al.*, 2013). "Gaming" can involve competitions, activities, creativity and learning, and are designed to add value to user experiences. Nicholson (2013) draws attention to the fact that during the 1930s Great Depression, libraries organized puzzle contests and circulated games and toys that engaged the youths, thus, academic and school libraries have had a long tradition of developing game-based learning activities to help stimulate students and teachers. The difference now, according to Nicholson (2013) is that a generation of people who grew up with video games and are therefore "game literate" have now become adults and have differing expectations about what gaming in the library should look like. Gaming in the library can take a number of forms. At the most basic level, libraries can introduce games for users to come in and play, borrow or rent.

The FUTO Innovative Services Unit in its „games corner“ houses such indoor games as chess, scrabbles, „ludo“, draught, „whot“ and „nchoko.“ All the games played at the library's games corner are guided by rules, e.g students comes to the counter to borrow games starting in the afternoon hours and while playing, decorum is maintained. □ **Chess** is played by 2 players at a time and each has 16 pieces made up of 1 king, 1 queen, 2 rooks, 2 bishops, 2 knights and 8 pawns. The high point in the game is to checkmate/kill the king hence the game is lost/won if the opponent's king is killed.



- **Scrabble** is played by maximum of 4. It is centered on word formation/ quick vocabulary and the person with the highest point value when the tiles are exhausted emerges winner.
- **Draught/Draft** is played by 2 persons with 20 seeds each and the first to eat up all the opponents' seed emerges winner.
- **'Nchoko'** is a local/traditional game played by 2 persons on a carved wooden board with 6 circles or square holes/box on each side, thus making a total of 12 holes/boxes on the board. Each hole contains 4 seeds at the on- set. The first player collects the 4 seeds in any hole of choice and starts distributing roundto each hole until it terminates in an empty hole and the next continues the same process until a new 4 seed is formed in a previously emptied hole. Each 4 new seed in the hole/box belonging to opponent is won and when the seed in hole/box is finished, the player with the highest number of seeds emerges winner.
- There some other local/traditional out-door games played by students, though rich in body fitness exercise and mental alertness but cannot fit into academic library setting due to their inherent noisy nature e.g „Ugaa“ and „Swell“

The introductions of these games have no doubt wetted students' appetite for library patronage. The Library „use statistics“ recorded impressive students turn-out from 16330 in the 2nd quarter (April – June, 2018) - when the games were introduced, to 23161 in the 2nd quarter, 2019. Games both indoor and outdoor are generally accepted as means of physical and mental development and well being. It enhances intellectual capacity and as well serve as recreational and relaxation mechanism capable of reducing stress. Within the students circle, it also fosters peace and friendship as it creates opportunity for interaction and healthy competition.

However, opinions differ on the use of gaming and “gamification” to achieve accelerated patronage of the library. Some argue on the positive and negative potential consequences. Charsky and Ressler (2011) taking a positive perspective opined that games can stimulate higher order thinking and can be engaging and motivational, as well as providing opportunities to provide additional instructions to aid learning. Ben-Zvi (2010) had earlier stated that games also aid the illustration of interrelationships between decision-making and outcomes, and can aid and enhance participatory learning and teaching. According to Kapp (2012), the aim among others include to present library and their services as offer to meet the public on their own familiar grounds using service gaming for living activities; this will attract new and young patrons by diversifying activities to make the library more accessible; reinforce cultural program, and to use pervasive process to increase library visibility and influence. Kapp concluded that games can be a means as well as an end. Stressing further Kapp stated that library games can be used to provide a context for the learning especially when it is not focused mainly on entertainment and when it is carefully crafted with the capability to provide opportunities to increase engagement and interactivity. Robert (2012) enthused that gaming can be used to enhance reading, training and educational activities when academic and public libraries are collaborating.

A gaming activity comes with challenges. Martel and Robert (2014) however pointed some challenges and implications of choosing to play game in academic libraries, adding that “we must know how to build on our own programme alone in our ivory tower in collaboration with the public and how to manage the knowledge in our institution to create value”. But Nicholson (2013) put forward some reservations about potential negative consequences and repercussions of ill-thought out gamification initiatives. He points out that reward-based gaming systems, such as earning badges and points for completing learning tasks or activities can actually have a negative impact because according to him research shows that if someone does something for a reward, then their intrinsic motivation to do that thing decreases, if the reward is later removed, the drive for the person to do that thing is lower than before the rewards were put in place. This may be the case with some competitive - based games such as chess and scrabble. The aim of games and game competition however, is not necessarily to compete for prizes but to relax nerves and tension and to attract students to the library and expose them to varying resources that could help their academics.

Theoretical Framework

Bruce and Charles (2015) attempted to construct a simple model that describes the central structure virtually all games appear to have. The structure is made up of three key elements: a challenge, a response, and feedback (see Figure 1). A circle is generated when the feedback bring about a new challenge or prompts the player to provide a different response to the original challenge.

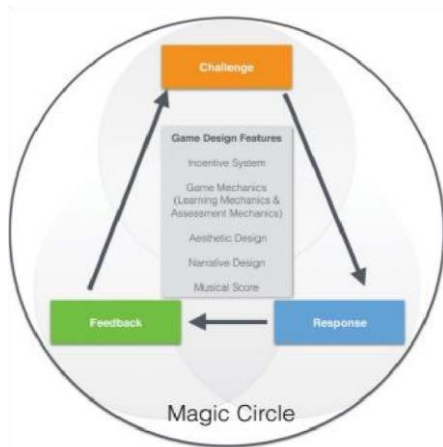


Figure 1: Magic circle

They pointed out the game design features which are the incentive system, game mechanics, aesthetic design and narrative design.

Incentive system: The incentive system of a game includes the many motivational elements that aim to encourage players to continue their efforts and feedback that attempts to appropriately modify their behavior. Kinzer *et al.* (2012), stated that Incentives could consist of scores (points), stars, badges, trophies, power-ups, and many other rewards.

Game mechanics: This describes the critical game play, the activity or sets of activities repeated by the learner all through the game. These activities can principally have a learning focus (learning mechanics) or an assessment focus (assessment mechanics); in major cases they focus on both (Plass & Homer, 2012; Plass, Homer, *et al.*, 2013)

Aesthetic design: The visual aesthetic design consists of visual elements such as the general look and feel of the game and the game characters, but also the form of representation of crucial information. The visual design decides how tools and functions of the game mechanics are visualized, how cues are represented, and how feedback is demonstrated which means it has a cognitive function and an aesthetic one.

Narrative design: They pointed out that the narrative of a game is the storyline that is advanced via features such as cut scenes, in-game actions, dialogues, and voice-overs. Contrasting with most movies and books, and games which allow for nonlinear narratives that advance based on the choices made by the learner. It provides background information for learning, linking rules of play, characters, tasks, events, and incentives.

Empirical Studies

Eric and Po (2013) examined the perceptions of students concerning the integration of the game into science learning as well as the educational benefits of the game with regard to learning performance. They adopted a onegroup pretest-posttest design, which was used with eighteen 5th grade students from a single elementary school in northern Taiwan. The students confirmed positive attitudes toward the use of the educational card game in science learning. The results also established the effectiveness of the projected education card game in improving the students' scientific knowledge of transport and energy.

Kirikkaya, Iseri, and Vurkaya (2010) in their study on relationship between game and learning motivation, designed a card game to assess one's knowledge of galaxies and space; however the game is also applicable in areas other than learning. By the use of semi-structured interviews, they discovered that this educational card game not only increased the learning motivation of students but also helped them in the formation of higher conceptual abstractions.

Also, in a research by Jancee (2011) on the effects of video game play on academic performance to determine whether playing video games affects academic performance as determined by Grade Point Average (GPA).

To realize this, 198 participants filled out a Gaming Habits Survey which was subjected to one-way ANOVAs. The study established that there was a significant effect of player status on GPA at the $p < .01$ level for the two conditions of player versus non-player [$F(1, 169) = 7.08, p = .009$]. Jackson et al (2008) found that the usage of games is causally associated to an increase in visual-spatial skills, which often come along in the fields of science, mathematics, technology, and engineering.

A study undertaken with Kindergarteners (Din & Calao, 2001) showed that students who played educational video games on the Sony Lightspan, which is a game system similar to the Sony Play station, made significant increases over the control group in the learning of spelling and reading; however, no significant gain was made over the control group in math.

Smyth (2007) recommended that complex games may lead to academic accomplishment by engaging players in problem solving, critical thinking, and creativity. Skoric et al (2009) found that while game addiction results to negative academic performance, moderate engagement in gaming can lead to improved performance in an academic setting. They also found a positive correlation between game play and English test scores, which suggests that gaming can actually lead to better test scores.

From the foregoing, though, literature search revealed many works on the use of games to enhance library patronage, but only a sketchy empirical work was seen in the Nigerian context. A study carried out by Bamigboye, Agbola, Emmanuel and Adegboye (2018), at the Federal University of Agriculture Abeokuta, Ogun State, Nigeria, examined the study behavior of 120 students in the library through questionnaire instrument and discovered that: Playing computer games in the library recorded 64(7.8%); watching films on cell phones and laptops 64(7.8%); resting in the library 116(14.1%); chatting with other students in the library 100(12.2%); joking in the library 84(10.2%); listening to music on cell phones and laptops 84(10.2%). This work no doubt shows students inclination to gaming activities in the library but not at the neglect of their studies. Suarez (2007) corroborated this when he intoned that these behaviors can be grouped as leisure or social behavior which do not distract from academic work being done in the library. Giving further credence, Association of College and Research libraries (2015) in their executive summary posited that library games engage students, enhance information literacy skills and increase positive attitudes towards the library and its staff.

Methodology

The study was carried out in Federal University of Technology Owerri. Survey research design was used for this study. The population of the study was selected randomly. Questionnaire was used as an instrument for data collection from 2500 out of which 2415 was collected and collated. Five likert scales was used to assess students response on how library games could enhance patronage of the library. To guarantee the reliability of the instrument, it was administered on thirty (30) participants out of the envisaged population of the study. A test-retest reliability method of two weeks interval was conducted, response obtained were subjected to Pearson Product Moment Correlation method and a reliability co-efficient of 0.78 was obtained, which indicated high level of internal consistency. Mean score, significant mean and standard deviation were used in describing the data while regression analysis was used to analyze the hypothesis.

Data presentation and Analysis

Table 1: Gender of Respondents

Gender	Frequency(N)	Percentage (%)
Male	1601	66.3
Female	814	33.7
TOTAL	2415	100

Table 1 reveals that 66.3% (1601) of the respondents are of the male gender while 33.7 % (814) of the respondents are female. Therefore majority of the respondents are of the male gender. Though there was no even distribution in the gender of respondents, as male are much higher than the female gender, but the number of respondents in each gender group are sufficient enough for the study.

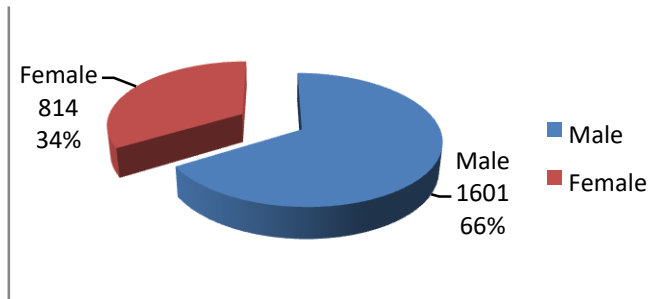


Table 2: School of Study

School of Study	Frequency(N)	Percentage (%)
SAAT	415	17.2
SEET	571	23.6
SOES	332	13.7
SOPS	375	15.5
SOBS	321	13.3
SMAT	401	16.6
TOTAL	2415	100

Table 2 above reveals that 17.2%(415) of the respondents are from School of Agriculture and Agricultural Technology(SAAT), 23.6%(571) of the respondents are from School of Engineering and Engineering Technology (SEET), 13.7%(332) of them are from School of Environmental Sciences (SOES), 15.5%(375) of the respondents are from School of Physical Sciences(SOPS), 13.3(321) of the respondents are from School of Biological Sciences (SOBS) while 16.6%(401) of the respondents are from School of Management Technology(SMAT). Therefore

majority 23.6(571) of the respondents are from SEET seconded by SAAT 17.2%(415).

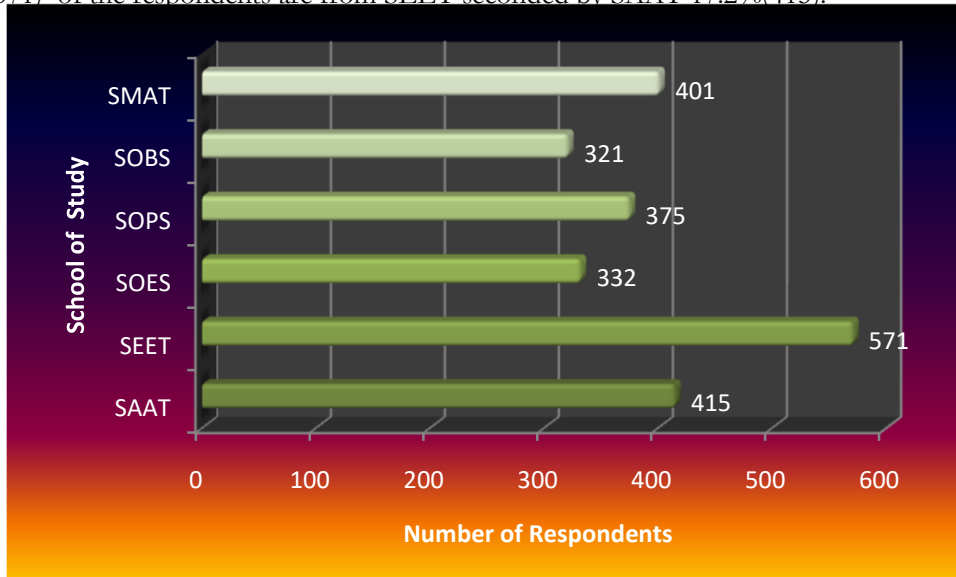


Table 3; Levels of study

Level of Study	Frequency(N)	Percentage (%)
100	409	16.9
200	532	22.0
300	428	17.7
400	412	17.1
500	634	26.3
TOTAL	2415	100

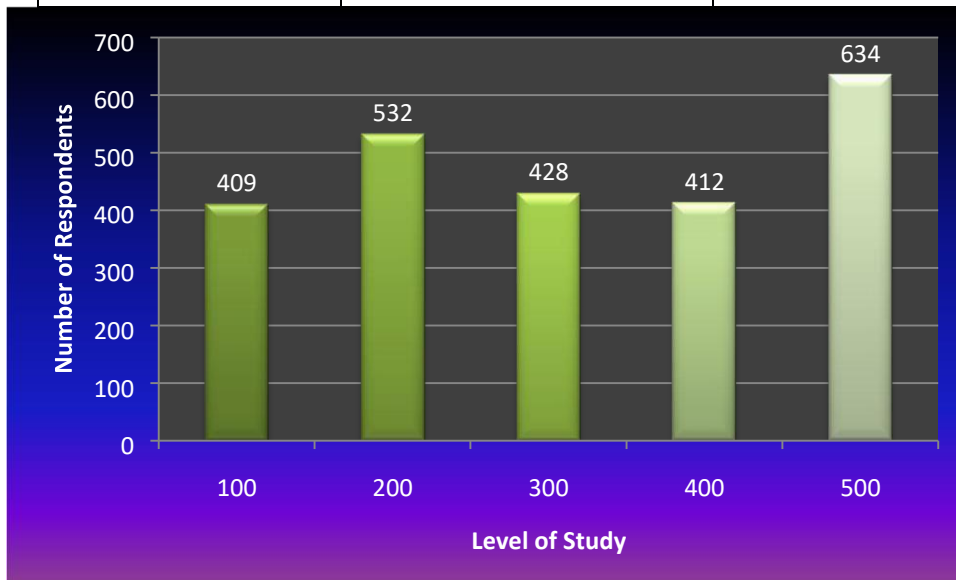


Table 3 reveals the level of study of the participants, 16.9% (409) of the respondents indicated that they are 100 level students, 22.0%(532) of the respondents pointed out that they are 200 level students, 17.7%(428) of the respondents revealed that they are 300 level students, also 17.1%(412) of the respondents indicated that

they are 400 level students while 26.3%(634) showed that there are 500 level students. Therefore majority of the respondents are 500 level students

Table 4: Frequency of library visits per week

Frequency of Library use per week	Frequency(N)	Percentage (%)
1/5	743	30.8
2/5	636	26.3
3/5	440	18.2
4/5	340	14.1
5/5	256	10.6
TOTAL	2415	100

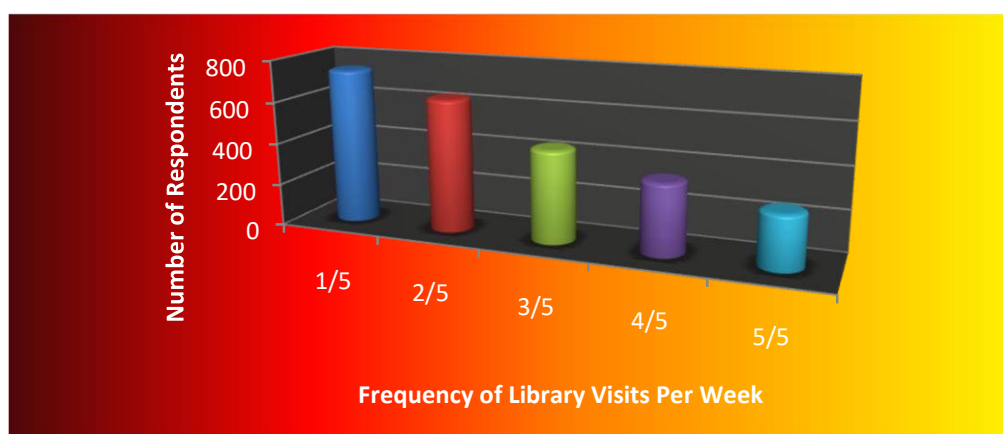


Figure 4 above shows a graphical representation of the frequency at which respondents visit the library per week. 30.8 % (743) of the respondents indicated that they visit the library once in five working days. 26.3%(636) pointed out that they visit the library at most twice in every five working days, however 18.2%(440) of the respondents indicated that they visit the university library at most 3 times in five working days, 14.1%(340) indicated that they visit the library at most 4 times in five working days, while 10.6%(256) of the respondents affirmed that they visit the library five times in five working days. This shows that more than 50% of the respondents visit the library at most twice in five working days.

Table 5; Students Assessment/responses on Library Games

S/No.	Items	SA	%	A	%	N	%	D	%	SD	%	Mean	SD±
1	Library games excite your patronage of the library.	695	29	817	34	412	17	302	13	189	8	3.63	264.92
2	Library games enhances your mental alertness	612	25	873	36	388	16	341	14	201	8	3.56	263.37

3	Library games enhances social interaction	643	27	749	31	519	21	312	13	192	8	3.55	229.99
4	Library games enhances team work	678	28	761	32	312	13	289	12	375	16	3.45	220.14
5	Library games enhances skill development	606	25	728	30	302	13	348	14	431	18	3.30	179.47
6	Library games enhance problem solving e.g. Spelling check and word formation.	599	25	719	30	307	13	282	12	508	21	3.26	187.85
7	Library games leads to friendship	605	25	784	32	293	12	348	14	385	16	3.36	205.80
8	Library games enhances contact and communication	657	27	740	31	288	12	332	14	398	16	3.38	202.72
9	Library games enhances quick response and sensibility	691	29	732	30	307	13	343	14	342	14	3.45	209.60
10	Library games enhances students ingenuity	642	27	769	32	304	13	286	12	414	17	3.39	213.71

11	Library games adds fun and excitement to studying	606	25	811	34	298	12	281	12	419	17	3.37	224.63
12	Library games appeals to students	607	25	736	30	328	14	314	13	430	18	3.32	183.56
13	Library games relaxes academic tension	616	26	757	31	342	14	318	13	382	16	3.38	193.70
14	Library games exposes one to good peer influence	713	30	749	31	312	13	307	13	334	14	3.50	226.98
15	Library games encourages attendance	685	28	735	30	328	14	329	14	338	14	3.46	208.01
16	Library games encourages one to work hard	691	29	803	33	313	13	347	14	261	11	3.54	246.14
17	Library games enhances academic excellence	653	27	877	36	282	12	325	13	278	12	3.54	269.97
	Significant Mean											3.44	

Table5 above shows the students assessment of library games in Federal University of Technology Owerri. The table reveals that 63% (1512) agreed that Library games excite their patronage of the library with mean score value of 3.63 ± 264.9 . 61% (1485) agreed that Library games enhances their mental alertness with mean score value of 3.56 ± 263.37 , 58% (1392) of the respondents agreed that library games enhances social interaction with mean score value of 3.55 ± 230 , 60% (1439) of the respondents agreed that Library games enhances team work with mean score value of 3.45 ± 220.14 . 55% (1334) agreed that Library games enhances skill development with mean score value of 3.3 ± 179.47 , also 55% agreed that Library games enhance problem solving e.g. Spelling check and word formation with mean score value of 3.26 ± 187.85 . 57% (1389) of the respondents agreed that Library games leads to friendship with mean score value of 3.36 ± 205.8 , 58% (1397) of

the respondents agreed that Library games enhances contact and communication with mean score value of 3.38 ± 202.72 . 59% (1423) of the respondents agreed that Library games enhance quick response and sensibility with mean score value of 3.45 ± 210 . 59% (1411) of the respondents agreed that Library games enhance students' ingenuity with mean score value of 3.39 ± 213.71 .

Also 59% (1417) of the respondents agreed that Library games adds fun and excitement to studying with mean score value of 3.37 ± 224.63 , 55% (1343) of the respondents agreed that Library games appeals to students with mean score value of 3.32 ± 183.56 . 57% (1373) of the respondents agreed that Library games relax academic tension with mean score value of 3.38 ± 193.7 . 61% (1462) of the respondents agreed that Library games exposes one to good peer influence with mean score value of 3.5 ± 226 . 58% (1420) of the respondents agreed that Library games encourage attendance with mean score value of 3.46 ± 208 . 62% (1494) of the respondents agreed that Library games encourage one to work hard with mean score value of 3.54 ± 246.14 . 63% (1530) of the respondents agreed that Library games enhance academic excellence with mean score value of 3.54 ± 269.97 . These pooled a significant mean score value of 3.44 which is above 3.00 average of a five point likert scale, indicating that there is a significant influence of games on students library patronage and academic performance.

Level of agreement of students on the effect of games on their academic performance

1	Library games enhances learning	603	25	717	30	387	16	343	14	365	15	3.35	167.3
2	Library games helps me to understand better when am reading	578	24	643	27	441	18	356	15	397	16	3.27	122.4
3	Library games helps me improve my thinking capability	645	27	567	23	403	17	376	16	424	18	3.26	116.9
4	Library games helps me in my assignments	598	25	577	24	476	20	319	13	445	18	3.23	112.3

The table above shows the level of agreement of students on the effect of games on their academic performance, the table indicated 54% (1307) of the respondents agreed that Library games enhances team work with mean score value of 3.37 ± 167.2 . 50% (1215) of the respondents agreed that Library games enhances learning with a mean score value of 3.35 ± 167.3 . 51% (1221) indicated that Library games helps them to understand better when reading with a mean score value of 3.27 ± 122.4 . 55% (1323) of the respondents agreed that Library games helps them improve their thinking capability with a mean score value of 3.26 ± 116.9 . 50%

(1204) of the respondents affirmed that Library games helps them in their assignments with a mean score value of 3.23 ± 112.3 . These pooled a significant mean score value of 3.30 which is above 3.00 average of a five point likert scale, indicating that library games helps improve students' academic performance.

Table 6: relationship between Library Games and Student performance

		Library Games	Students Performance
Library Games	Pearson Correlation	1	.855
	Sig. (2-tailed)		.044
	N	17	5
Students Performance	Pearson Correlation	.855	1
	Sig. (2-tailed)	.044	
	N	5	5

The data in table 6 above however was subjected to Pearson correlation analysis as shown above, to find out if there is any significant relationship between library games and student performance. R-value of 0.855 was gotten, at $p\text{-value} = 0.044 < 0.05$ indicating that there is a strong relationship between library games and students performance.

Conclusion and Recommendation

The majority of students' respondents agreed that the outlined game strategies yielded positive relationship between games and library patronage. There was also a significant relationship between library games and academic performance as shown in the Pearson correlation test of relationship. Therefore games as a strategy to enhance user engagement/library patronage, which can also help improve academic performance is strongly recommended to academic and other libraries.

Reference

- Abraham, S. Leavy, B. (2007) "Interview: After 15 editions, the authors of a strategic management textbook reflect, Strategy & Leadership, Vol. 35 Iss: 4, pp.38 – 42. doi: <http://dx.doi.org/10.1108/10878570710761372> Dana (2015)
- Adams, T (2013) „Addition vs Reflection: Unlucking the Potential of Games. [Http://www.edutopia.org/blog](http://www.edutopia.org/blog). Date retieved;6/2/2020.
- Aina, L.O.(2004) Library and information Science Text for Africa. Ibadan: Third World Services.Pp.15-16
- Bamigboye, O.B, Agbola, I.O, Emmanuel, O.S, & Adegboye, I.S (2018) New Trends of study behavior of students of Federal University of Agriculture, Abeokuta: A case of Nigerian students. Journal of Library and Information Science, Vol.6 No.1 Pp4-9.
- Ben-Zvi, T (2010). Decision Support Systems. Impact on Company Performance. MCIS 2010 Proceedings.15 <http://aid.aisnet.org/MCIS2010/15>.date accessed 19 August, 2019.

- Bruce and Charles (2015) "Foundations of Game-Based Learning" *EDUCATIONAL PSYCHOLOGIST*, 50(4), 258–283.
- Charsky, D and Ressler, W (2011). Games are made for fun: Lessons on the effect of concepts maps in the classroom use of computer games. Elsevier: Computers and Education Vol56 No.3.
- Chien, K. H., & Liu, T. C. (2011). A digital game-based learning system energy for energy education: An energy conservation pet. *The Turkish Online Journal of Educational Technology*, 11(2), 27–37.
- Dana, A (2015). Artificial Intelligence and Games. <http://books.google.com.ng>. Date accessed 20th August, 2019.
- Deterding, S. Björke, S, Nacke, L, Lawley, E (2013). Designing gamification; creating gameful playful experiences.
- Din, F., & Calao, J. (2001). The effects of playing educational video games on kindergarten achievement. *Child Study Journal*, 31(2) 95.
- Eric Z., & Po-Kuang C.(2013) "The Effect of Game-Based Learning on Students" Learning Performance in Science Learning – A Case of "Conveyance Go" *rocedia - Social and Behavioral Sciences* 103 (2013) 1044 – 1051
- Games in the Library: Obstacles and Challenges ALA Games RT (2019)
- Jackson, L., Zhao, Y., Kolenic III, A., Fitzgerald, H., Harold, R., & Von Eye, A. (2008). Race, gender, and information technology use: The new digital divide. *CyberPsychology and Behavior*, 11(4), 437-442.
- Jancee Wright (2011) "The effects of video game play on academic Performance" *University of the Cumberlands* 17(1)
- Kapp, KM (2012). *The Gamification of learning and instruction*, IGI Global.com; Game-based methods and strategies for training and education. John Wiley & Sons.
- Katie, A (2009) Games Evolve as Tools for Teaching Financial Literacy. [Http://www. Edweek- org/ew/articles/2009](http://www.Edweek.org/ew/articles/2009)
- Kinzer, C. K., Hoffman, D., Turkay, S., Gunbas, N., Chantes, P., Dvorkin, T., & Chaiwinij, A. (2012). The impact of choice and feedback on learning, motivation, and performance in an educational video game. In K. Squire, C. Martin, & A. Ochsner (Eds.), *Proceedings of the games, learning, and society conference*: Vol. 2 (pp. 175–181). Pittsburgh, PA:ETC Press.
- Kirikkaya, E. B, Vurkaya, G. (2010). A Board Game about Space and Solar System for Primary School Students. *Turkish Online Journal of Educational Technology - TOJET*, v9 n2 p1-13 Apr 2010 24, 2019 from <https://www.learntechlib.org/p/155330/>.

- Nicholson (2013). Two paths to motivation through game design elements: reward based gamification and meaningful gamification. Conference 2013 Proceedings. <https://www.ideals.illinois.edu/bitstream/handle/2142/42082/313>.date accessed 17th June, 2019.
- Ngozi C. (2017) “Awareness and Utilization of databases subscribed to at FUTO library among FUTO academic staff.” *European Journal* vol. 3.No. 4.
- Plass, J. L., Homer, B. D., Kinzer, C. K., Chang, Y. K., Frye, J., Kaczetow, W., ... Perlin, K. (2013). Metrics in simulations and games for learning. In A. Drachen, M. S. El-Nasr, & A. Canossa (Eds.), *Game analytics* (pp. 697–729). New York, NY: Springer.
- Quarterly Report (2nd Quarter,2018 and 2019), The Library Federal University of Technology, Owerri.
- Skoric, M., Teo, L., & Neo, R. (2009). Children and video games: Addiction, engagement, and scholastic achievement. *CyberPsychology and Behavior*, 12(5), 567-572.
- Smyth, J. (2007). Beyond self-selection in video game play: An experimental examination of the consequences of massively multiplayer online role-playing game play. *Cyber Psychology and Behavior*, 10(5),717-721.
- UNDP (2016). National Human Development Report, 2016/UNDP in Nigeria.www.ng.undp.org
- Yang, J. C., Chen, C. H., & Jeng, M. C. (2010). Integrating video-capture virtual reality technology into a physically interactive learning environment for English learning. *Computers & Education*, 55(3), 1346–1356.