

TEACHERS' PREPAREDNESS FOR THE ADOPTION OF GAMIFIED LEARNING IN SMART-CLASSROOMS IN ISI-UZO LOCAL GOVERNMENT AREA

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Abstract

The study assessed the level of preparedness of teachers for the adoption of gamified learning in smart schools in Isi-Uzo local government area of Enugu State, Nigeria. The study employed descriptive survey design. The population of the study was 20 Junior secondary school teachers drawn from five sampled smart-schools. The simple random sampling techniques was used to select five out of the 11 smart-schools in the 11 political wards of Isi-Uzo local government area of Enugu State. The same simple random sampling was also used to select four teachers teaching in junior secondary schools within the study area. The instrument for data collection was a questionnaire developed by the researcher titled: Teachers Preparedness for Gamified Learning Questionnaire. The instrument was subjected to face validated by three experts from the federal college of education, Eha-Amufu. Cronbach Alpha statistics was used to determine the reliability of the instrument which yielded an overall reliability co-efficient value of 0.88 which was considered appropriate for the study. The results showed that the teachers are not ready to adopt gamified learning due to logistic challenges such as lack of technological devices, poor internet connectivity, lack of power supply and poor institutional supports. The results further indicate that the teachers' perception of the new innovation is positive and encouraging. The study recommends government improved funding for the advancement of the smart-schools in the state. It concludes that when the teachers are adequately motivated and the institutional framework are made available to them that their perceptions and willingness to work would be attained.

Keywords: Gamified learning, smart-classrooms, resource constrained settings

Introduction

There is increasing pressure to renovate the modern classrooms in Nigeria. To lessen these pressure on governments at various levels, informs both state and Federal governments embark on innovative ideas and transformative policies to improve on the qualities of teaching and learning at all levels of the educational institutions. For example, Enugu State government, embarked on innovative approach to revolutionise Green-Smart-Schools in all the 260 wards across the state. The essence of these smart-schools is to increase the integration of Technology Enhanced Learning (TEL) methods in order to improve the quality of education in the state and in Nigeria in general. Zourmpakis, Papadakis and Kalogionnakis (2022) noted that TEL, is the implementation of technology into teaching methods to enhance the learning process.

The acronym TEL (Technology Enhanced Learning) takes many shapes and forms. TEL houses the concept of gamified learning or gamification of learning'. Ordinarily, the term 'game' refers to the use of game method to enhance teaching and learning. Gironella (2023) infers that gamified learning is the integration of game mechanics and design principles into the learning experience in order to increase students' motivation, engagement, and retention. This definition suggests that gamified learning is a process of integrating digital technologies such as blended learning, flipped classrooms, mobile learning, adaptive learning systems to enhance learning process. Deterding et al (2011) note that gamification is the use of game-design elements in non-game contexts. These

game elements include leaderboards, badges, levels, and challenges to educational activities in order to foster learner participation and perseverance. Similarly, Saheed et al (2025) insist that gamification is a situation when components that resemble games, including scoring platforms, prizes, and competition is employed as non-game contexts. According to these authors, some examples can be found in education or business environment where some rewards in form of praises or cash award may be given to a learner who did his assignment very well. Using game-elements to teach the students especially at junior secondary schools is very important. Junior secondary schools here refer to classes from JSS 1 – 3 respectively. Gironella (2023) opines that gamified learning or gamification can help students develop critical thinking and problem-solving skills, as well as promote collaboration and teamwork.

In the past, the teachers in the study area have been practicing traditional method of teaching. This traditional method of teaching is mostly teacher-centred-learning. The major job of a teacher in this method is to dish-out already memorized notebooks, lecture note or hand-on papers and so on. In some cases, the teacher engages the learner in face-to-face interactions. Usually, this method lacks feed-back mechanisms to enable the teachers determine if the learners have mastered what he/she has taught them. This lack of feed-back mechanisms in most cases is content driven which often are not flexible and interesting to the learner. This traditional method of teaching has been in the practice in Isi-Uzo local government for number of decades ago.

Again, in the traditional method of teaching, experience have shown that most of teachers are not well-trained. Some of them, are not specialist in their subject areas why some are converted to teach related subjects they are not well knowledgeable. The result of this half-baked teachers was that their products which is their learners know nothing about the subjects they (learners) were taught. These ugly scenarios were the state of affairs before the emergence of green smart-schools. Despite of these envisaged benefits of the gamified learning, this paper seeks to uncover some problem areas that may hamper the implementation of these innovative ideas towards teaching and learning. Though, government at different levels has embarked on training teachers to provide them with the knowledge and skills to use gamified teaching methods. In spite of these bold attempts by government at various levels, most junior secondary schools, particularly in rural areas/resource constrained areas lack the requisite technological facilities and teaching resources for the effective implementation of gamified learning.

Again, teachers have been trained to embrace gamified learning methods, yet they lack access to basic facilities like interactive board, reliable internet access, electronic gadgets and the correct software systems. There is also envisaged gap between training teachers and making available resource materials that would equip them (teacher) to make gamified learning effective. There is no explanation of whether this training has adequately prepared the teachers in their capacities, confidence, and willingness to make changes in gamification strategies in low-resource settings. Low resource settings/resource constrained areas refer to rural areas that lack internet facilities and adequate power supplies. Moreso, little empirical data are also available on the perception of teachers of these challenges and the degree to which they are both capable and prepared to improvise considering these constraints. Consequently, this paper would aim at researching the readiness of teachers towards implementing gamified learning in smart classrooms in resource limited junior secondary schools The above, therefore, form the problem of the study.

This section of the literature review would focus on empirical studies done in the area of gamification. Fuchs (2024) investigated the challenges with gamification in high

education. The topic of the study was narrative review of literature with emphasis on implications for educators and policy makers. The author adopted textual analysis techniques to build on his literature collections. The analysis of the results showed that gamification can be an effective way to engage students and enhance learning goals. The authors also discovered the setbacks inherent in gamification such as achieving superficial learning outcomes, fostering a competitive learning culture and relying on students' extrinsic motivation. Fuchs, recommends the need for thoughtful integration of gamification and the importance of evaluating its impact on pedagogical goals in high education.

In a related development, Majuri, Koivisto and Hamari (2018), documented researches on Gamification of education and learning. A review of empirical literature. In the study, the authors catalogued 128 empirical research papers in the field of gamification of education and learning. Similarly, with the above citation, the authors adopted textual analysis techniques to assemble their data. The findings of the study revealed that gamification in education and learning most commonly utilizes affordances signaling achievement and progression, while social and immersion-oriented affordances are much less common. The implication of this result indicates that future research on gamification in education should lay more emphasis on varying the affordances in the implementations and the pursued goals of the gamification solutions. The researchers further recommended increased attention on contextual factors of the solutions as well as on study designs in future research endeavours.

Also, Zeng, Sun, Looi and Wai-Fan (2024) documented a research on the impact of gamification on students' academic performance. A comprehensive meta-analysis of studies between 2008 – 2023. The authors employed a meta-analysis approach to examine the overall influence of gamification on students' academic performance as their methodology. The sample for the study comprised 22 students which also served as experimental group and the same number was also used as control group. The duration for the study lasted between 2008 – 2023. The authors used Hedges's $g = 0.782$, $P < 0.05$ as their mean ratio. The findings of the study revealed a moderately positive effect of gamification on students' academic performance. The results further indicated the outcomes of various moderator analyses, and thereby providing valuable insights into the selection and utilization of game design elements, as well as considerations specific to different educational stages. In all the review done so far, that of Fuchs (2024) focused on the challenges of gamification in high education, laying more emphasis on the implication of gamification for educators and policy makers. In the same vein, Majuri, Koivisto and Hamari (2018) discussed various literatures consisting of 128 empirical studies done on the area of gamification. These 128 papers focused on the field of gamification of education and learning. Finally, Zeng, Sun, Looi and Wai-Fan (2024) studied the impact of gamification on the students' academic performance. None of the above reviews discussed teachers preparedness for the adoption of gamified learning in smart-classrooms in Isi-Uzo local government area of Enugu state, hence the need to embark on this study.

Technology Acceptance Model (TAM) was first developed by Fred Davis in 1989. TAM is an information systems theory that models how users come to accept and use a technology. The model proposed that when users are presented with a new technology, a number of factors influence their decision about how and when they will use it. Among these factors are perceived usefulness (PU) and perceived ease of use (PEOU). Davis (1989) defines PU as the degree to which a person believes that using a particular system would enhance their job performance. Davis notes that PEOU is the degree to which a person believes that using a particular system would be free from effort. This definition

suggests that if the technology is easy to use, then the barrier is defeated or conquered. But if the technology is not easy to use and the interface is complex, then there will be no positive attitude towards it (Adams, Nelson and Todd, 1992).

Since after the first work on TAM, the theory continued to evolve through three major versions. These versions include Technology Acceptance Model tagged: TAM₁, TAM₂ and TAM₃. TAM₁ as earlier mentioned was developed by Davis (1989) which sought to explain how users of technology accepts technological devices uphold its usefulness and incorporate its social influence to enhance teaching and learning.

TAM₂ was extension of TAM₁. TAM₂ was developed by Venkatesh and Davis (2000). The focus of TAM₂ was to include those influential processes such as subjective norm, image, voluntariness and cognitive instrumental processes such as job relevance, output quality that may aid technological usefulness. Again, TAM₃, aims at combining TAM₂ with research on perceived ease of use. It include such factors such as computer, anxiety, self-efficacy and facilitating conditions. In this paper, the researcher would adopt TAM₂ as developed by Vankatesh and Davis (2000). The essence of adopting TAM₂ is because of its relevance in terms of aptness in area of image which directly has to do with gamification. Again, its relevance stems from the facts that TAM₂ has its merit in the area of validated robustness and adaptability. One of the objective of the study is to assess how the teachers in the resource constrained area would adapt to technology driven model of teaching. In this study, therefore, the researcher would deploy the principles of the theory as enunciated by Vankatesh and Davis (2000) to analyse the issues raised as the objectives of the study. These issues are to assess their (teachers) readiness, competence, perceptions and as well as ascertain the barriers the teachers may encounter while trying to implement gamification strategies..

Purpose of the Study

The objective of this study is to investigate the readiness of the teachers in adopting gamified learning in smart classes in the junior secondary schools in Isi-Uzo Local Government Area of Enugu State. Specifically, the study sought to:

1. examine the extent to which teachers are willing to implement gamified learning in smart classrooms.
2. determine the extent of teachers' competence in implementing gamified learning.
3. examine teachers' perceptions of gamified learning in smart classrooms.
4. identify the challenges teachers face in implementing gamified learning in resource-constrained settings.

Research Questions

The following research questions guided the study.

1. To what extent are teachers willing to implement gamified learning in smart-classrooms?
2. What is the extent of teachers competence in implementing gamification learning ?
3. How do teachers view gamified smart classroom learning?
4. What are the challenges of teachers in implementing gamified learning in resource constrained setting?

Methods

The paper would adopt descriptive research design. The area of this study is Isi-Uzo Local Government Area of Enugu State. Isi-Uzo local government area is in the south-east geopolitical zone of Nigeria. Five (5) out of 11 (eleven) smart-schools in Isi-Uzo local government area were randomly sampled. The sampled schools were Smart Secondary School, Eha-Amufu Urban, Smart Secondary School, Umuhu, Eha-Amufu,

Smart-Secondary School, Ikem-Umuaram, Smart Secondary School, Mbu-Amon and Smart Secondary School, Umualor. The mode of selecting these schools is on the following reasons. Four teachers were randomly sampled from each of these five selected schools. The total population of the respondents is twenty (20). Therefore, in each school, four teachers, teaching in junior secondary schools were sampled to form the total population of the study. The only instrument for the study is questionnaire. In this study, questionnaire is defined as a data collection tool, consisting of series of questions or items aimed at eliciting factual information from a respondent. The title of the questionnaire is tagged. *Teachers' Preparedness for Gamified Learning Questionnaire* (TPGLQ). The study further adopted likert's model of rating. The research instrument was validated by three experts from the Department of Educational Technology and the Department of Psychology, Federal College of Education, Eha-Amufu. The validation of the instrument enhanced the strength of the research and ensured that it was standard and appropriate for the study. The instrument was administered by the researcher/research assistants in all the five selected schools. The researcher/research assistant(s) administered the questionnaires and collected them on the spot. This is to ensure that no copies of the questionnaire get missing.

Results

Research Question 1: To what extent are teachers willing to implement gamified learning in smart-classroom

The first research question sought to ascertain to what extent are teachers willing to implement gamified learning in smart-classrooms.

S/ N	Items	VHE	HE	LE	VLE	Total
1.	I am willing to adopt gamified learning in my teaching	5 25%	3 15%	4 20%	8 40%	20 100 %
2.	I feel confident using gamified strategies in the classroom	2 10%	1 5%	7 35%	10 50%	20 100 %
3.	I am motivated to implement gamified learning despite limited resources	3 15%	2 10%	6 30%	9 45%	20 100 %
4.	I am confused in applying this method of teaching.	6 30%	5 25%	4 20%	5 25%	20 100 %

In table 1 above, data collected and presented indicated that the majority of the respondents are not ready to embrace gamification methods of teaching. Analysis of the results show that for item 1, 5 (25%) of the respondents strongly agreed to a very high extent. The result further indicates that 4(20%) of them disagreed while a reasonable number representing 8(40%) of the respondents' population disapprove of it. The responses of item one when put together showed that 8(40%) of the respondents agree while 12(60%) disagreed. Similarly, for item 2, 2(10%) of the respondents strongly agree that they feel confident while using this innovate model in teaching. Still, on the low scale of rating, 1(5%) of the respondents' population agreed to gamified method while 7(35%) of them disagreed. In the same vein, a significant number representing 10(50%) of the respondents strongly disagree with this method of teaching. On the positive side, the results when joined together showed that 3(15%) of the respondents agreed that they are ready to adopt this model of teaching. Contrastingly, a significant number representing 17(85%) of the respondents expressed displeasure in adopting gamification methods. The

implication of these results indicates that teachers do not feel confident in adopting this model of teaching. In other words, the teachers are more inclined about the old traditional methods of teaching.

Also, in table 1, of item number three 3(15%) strongly agree while 2(10%) of the respondents' population simply agreed that they are motivated to implement gamified learning despite limited resources. However, 6(30%) of them disagreed while a reasonable number representing 9(45%) to a very low extent strongly disagreed to the above assertion. The results when put together showed that 5(25%) of the respondents agreed while the majority of the respondents representing 15(75%) disagreed with the above assertion. According to these results, an insignificant number agreed that they are motivated to implement gamified learning inspite of restricted resources. In a related development, 6(30%) of the respondents' population strongly agree that they are confused to adapt gamification model while 5(25%) of them to high extent simply agreed. Also, 4(20%) respondents disagreed to this claim. Similarly, a significant number representing 5(25%) of the respondents' population to a very low extent disagreed. Therefore, the results when joined together indicate that 11(55%) of the respondents positively agreed that they are confused to adapt gamification model. On the reverse side, 9(45%) of them disagree to this opinion. This competitive response indicates that 11(55%) express desire that they are confused to adapt this model of teaching while a significant number representing 9(45%) of them disagreed.

Research Question 2: What is the extent of teachers competence in implementing gamification?

S/ N	Items	VH E	HE	LE	VL E	Total
5.	I understand the concept of gamified learning	3 15%	4 20%	5 25%	8 40%	20 100%
6.	I can design simple gamified learning activities	2 10%	1 5%	7 35%	10 40%	20 100%
7.	I can apply gamification techniques without digital tools	2 10%	3 15%	7 35%	8 40%	20 100%
8.	I am able to integrate game elements/points, badges, reward into lessons	4 20%	5 25%	6 30%	5 25%	20 100%

The results in table 2 above of item number five, indicates that 3(15%) of the respondents strongly agree while a sizeable number representing 4(20) agreed. The result also showed that 5(25%) of the respondents' population disagree, while a significant number representing 8(40%) strongly disagreed. The results of those in agreement when joined together stand at 9(35%) while those who oppose the idea stand at 13(65%). The implication of this result is that majority of the respondents are incompetent. The result on item number six showed that 2(10%) of the respondents' population strongly agree that they can design simple gamified learning activities while a negligible population agreed that they can design these new innovative activities. Those who disagreed to this idea stood at 7(35%) while those who strongly disagree of the gamification model stood at 10(50%). The total number of those at positive side stood at 3(15%) while those at the opposing side stood at 17(85%). This result implies that majority of the teachers representing 17(85%) cannot design simple gamification model.

In the same vein, 2(10%) of the respondents' population strongly agree that they can apply gamification techniques without digital tools while an insignificant number representing 3(15%) simply agreed to this assertion. Contrastingly, a significant number, representing 7(35%) disagree to this assertion while 8(40%) of them strongly disagreed. The analysis of this data shows that the total number of those in agreement stood at 5(25%) while those against stood at 15(75%). The analysis of these results show that majority of the respondents cannot apply gamification techniques without the help of digital tools. Therefore, digital tools according to the respondents is key to gamification procedures.

Sequel to item number eight, 4(20%) of the respondents strongly agree that they can integrate game elements such as points, badges, rewards etc. into lessons while 5(25%) of the respondent's population agreed to this assertion. On the contrary, 6(30%) of them disagreed while 5(25%) of them strongly oppose to this idea. The results of those on the positive side when joined together stood at 9(45%) while those on the opposing side (disagreed) stood at 11(55%). The implication of these results showed that a significant number of teachers representing 11 (55%) admitted that they were unable to integrate game elements into their lessons. On the contrary, about 9(45%) of the respondents' population affirm that they can integrate game methods into their daily lessons. The results further imply that the teachers needed support to enable them regain more confidence in this novel ideas. The result showed a positive approach towards acceptance of this new model of teaching. The 45% of the teachers agreed that they can integrate these novel ideas into their daily teaching is an indication that they understand the benefits of gamification methods in teaching.

Research Question 3: How do teachers view gamified smart classroom learning?

S/ N	Items	VH E	HE	LE	VL E	Tota l
9.	Gamified learning improves students engagement	6 30%	7 35%	3 15%	4 20%	20 100 %
10.	Gamified learning enhances students' academic performance	8 40%	6 30%	3 15%	3 15%	20 100 %
11.	Gamified learning is suitable for junior secondary school students	9 45%	7 35%	3 15%	1 5%	20 100 %
12.	Gamified learning is difficult to implement without technology	10 50%	8 40%	1 5%	1 5%	20 100 %

The results presented in table 3 of item number nine, show that 6(30%) of the respondents strongly agree that gamified learning improves students' engagement. Also, about 7(35%) of them agreed to this assertion. However, 3(15%) of the respondents' population disagreed while similar number representing 4(20%) of them strongly disagree. Therefore, the results when joined together indicate that 13(65%) of the respondents agreed to this assertion while the sum of 7(35%) disagreed. The implication of this results show that the majority of the respondents confirmed that gamified learning improves students engagement.

In a related development, about 8(40%) of the respondents' population strongly agreed that gamified learning enhances academic performance. Similarly, about 6(30%) of them simply agreed to this assertion while 3(15%) of them disapprove of the opinion.

Similarly, 3(15%) of the respondents' population strongly disagree to the above opinion. The results when put together, show that 14(70%) of the respondents agree to the above assertion while 6(30%) of them disagreed. This result implies that overwhelming majority confirm that gamified learning enhances students' academic performance. Similarly, about 9(45%) of the respondent's population strongly agree that gamified learning is suitable for junior secondary school students. Also, 7(35%) of them agreed to this assertion. On the other hand, 3(15%) of the respondents' population disagreed while an insignificant number representing 1(5%) of them strongly disagreed. The results when joined together indicate that 16(80%) of the respondent's population agreed to the above assertion. Again, those on the negative side when put together show that 4(20%) of them disapproved of this assertion. The analysis of the data has shown that the greater number of the respondents (teachers) confirmed the acceptance of this model of teaching in junior secondary schools. The results also support the current topic.

The results of item number twelve of table 3, show that 10(50%) of the respondents' population strongly agree that gamified learning is difficult to implement without technology. In the same vein, about 8(40%) of them simply agreed. On the contrary, 1(5%) of them disagreed, the same margin, representing 1(5%) strongly disagreed. The result of those in agreement stood at 18(90%) while the total number of those who disagreed stood at 1(5%). The above results imply that the overwhelming majority of the respondents attest to the facts that it is difficult to implement gamified learning without technological device(s).

Research Question 4: What are the challenges of teachers in implementing gamified learning in resource constrained settings?

S/ N	Items	VH E	HE	LE	VL E	Total
13.	Lack of technological tools hinders my use of gamified learning	12 60%	5 25%	2 10%	1 5%	20 100%
14.	Poor internet connectivity affects implementation	10 50%	6 30%	2 10%	2 10%	20 100%
15.	Lack of power supply affects implementation	13 65%	5 25%	1 5%	1 5%	20 100%
16.	Lack of institutional support affects my preparedness	7 35%	6 30%	3 15%	4 20%	20 100%

Table 4 is devoted towards assessing the responses of the respondents on the challenges teachers' encounter in adopting gamified learning. In item number thirteen of table 4, the responses of the respondents show that 12(60%) of them strongly agree that lack of technological tools hinders their use of gamified learning. Also, about 5(25%) of the respondents simply agreed that lack of technological tools hinders their use of this new innovation. However, about 2(10%) of them disagreed to this assertion, while only 1(5%) strongly disapprove of it. The results when joined together indicate that 17(85%) agree to this assertion while an insignificant number representing 3(15%) oppose this idea. Furthermore, 10(50%) of the respondents' population strongly agree that poor internet connection negatively affects their use of this new innovation. In the same vein, 6(30%) of them agree to the above assertion. On the reverse side, 2(10%) of the respondents disagree to this assertion while the similar number representing 2(10%) strongly disagree to the

above assertion. The results when joined together indicate that those in agreement stood at 16(80%) while those in disagreement stood at 4(20%) respectively.

The results further indicate that 13(65%) of the respondents' population strongly agree that lack of power supply negatively affect their implementation of this novel idea. Again, 5(25%) of the respondents simply agree to this assertion while about 1(5%) each disagreed. The results when put together indicate that 18(90%) of them agree to this assertion while only a few representing 2(10%) disagreed to this assertion. The implications of these results are that the respondents are aware that "no power/electricity supply no gamified learning." This means that without adequate electricity supply, there would be "no play of any game." Lastly, about 7(35%) of the respondents strongly agree that lack of institutional support negatively affects their preparedness towards these new innovative methods. In the same vein, 6(30%) of the respondents' population agree to this assertion. On the reverse side, 3(15%) of them disagreed while a significant number representing 4(20%) of the respondents strongly disagree. The results of those in agreement when joined together stood at 13(65%) while those in disagreement stood at 7(35%) only. The outcome of these results show that most of the respondents attest to the facts that lack of institutional support hinders their preparedness towards adopting this new innovation.

Discussion of the Findings

The findings of the study revealed that the majority of the teachers are not ready to embrace gamification methods of teaching. The findings of the study may not be unconnected to the prevailing environmental situation that is largely rural. The study area is largely rural where the majority of the teachers are not exposed to urban facilities such as steady electric supply, internet facilities and so on. The implication of this result points to the fact that the teachers are not ready to adopt gamification methods of teaching in the newly established smart-schools. The findings of this result is in line with the opinion expressed by Legris, Ingham and Collette (2003) when they assert that TAM₂ should incorporate variables that are responsible for changing methods. Furthermore, the results showed that the teachers lack confidence in using this new innovative teaching strategy. The results of item number 3 of table 1 also showed low rating of those who agreed that they are motivated inspite of limited resources. Contrastingly, item number 4 of table 1 showed that the teachers are confused to embrace this new innovation in teaching. The outcome of these results implied that the teachers are aware of the benefits of this new innovation in teaching and learning. This result is in line with the opinion expressed by Sharda, Barr and McDonnell (1988) when they observed that the potential of technology to deliver benefits has long motivated management research to examine the willingness of individuals to accept innovative technology. The assertion of the teacher (respondents) proved that they are aware of the enormous benefits attached to gamification method of teaching.

Though some teachers in the area were randomly selected for training by Enugu State government. Basically, the training focuses only on the elementary aspects of computer basic operations or basic programming such as Microsoft excel, Microsoft PowerPoint etc. These type of training do not give them the edge for advance computer operations that can enable them design and implement gamification strategies. Perhaps, it was the handicap of which the teachers are experiencing that made them to respond in negativity. The findings of the study indicated that most of the teachers are incompetent in implementing the gamification strategies. The results further revealed that majority of the teachers representing 17(85%) of them cannot design simple gamification model. The results further indicated that about 11(55%) of them cannot integrate the game elements

such as point systems, badges etc into their daily lessons. The analysis of the results further indicated that the teachers in Isi-Uzo local government do not understand the concept of gamification nor can they design any simple gamified activities in the class. This kind of problem was envisaged by Dhayalan and Nasri (2025) when they reported that limited ICT skills, inadequate technological infrastructure, insufficient professional training, teachers' heavy workloads and a reference for traditional teaching methods are among the many challenges confronting teachers in implement the gamification method of teaching. The implication of this result point to the fact that teachers in those rural area prefer traditional methods of teaching which they are used to.

The findings of the study had revealed that gamified learning improves students' engagement. Similarly, the results further indicated that majority of the teachers attested to the facts that gamified learning enhances students' academic performance. In the same vein, majority of the teachers attest to the facts that gamified learning is suitable for junior secondary school students in the area. Likewise, a significant number affirmed that gamified learning is difficult to implement without technological devices. this finding seem to be supported by Chugh and Turnbull (2022) who observed that the integration of gamification in education has gained considerable momentum in recent years, positioning itself as a dynamic pedagogical strategy aimed at enhancing students engagement, motivation and academic achievement. The findings of this study is in line with the earlier studies done by Chapman and Rich (2018) when they argued that gamified classes are far more motivating for students.

The findings of the study revealed that there are many problems which the teachers face while attempting to adopt gamified learning. According to the study, some of these problems include lack of technological tools, poor internet connection, lack of power/electricity supply and lack of institutional support. The findings of this study is not surprising, because the area of study is largely a rural area where there are problems of lack of power infrastructure. In addition to the problems identified in this study, Kinzer et al (2015) further indicated that challenges such as resource limitations, inadequate teacher training, and resistance to new technologies can impede the overall effectiveness of gamified learning environments. The respondents in this study merely lend their support to what other scholars have previously observed as the challenges of gamification. For example, Anamalai and Yatim (2022) noted that one main challenge is technological infrastructure limitations. According to the authors, many schools, particularly those in rural areas and under-enrolled schools, still struggle with inadequate access to digital devices and unsuitable internet connections. Again, Almeida et al, (2023) support this view when they assert that these shortcomings hinder teachers from consistently and effectively applying gamified approaches. These challenges as enumerated by the above authors are in line with the opinion expressed by the respondents in this study.

Conclusion

The drive to enhance effective teaching methods gave rise to different research effort to drive the process. To this effect, efforts have been made to use game design elements in non-game contexts. This process is known as 'gamification'. Gamification implies the use of mechanics such as points, leaderboards, badges, levels and challenges to educational activities in order to foster learner participation and perseverance (Deterding et al, 2011). In this paper, efforts have been made to survey the level of preparedness of teachers' in Isi-Uzo local government area to embrace these innovative teaching methods. The study examined their level of preparedness/readiness, competence, as well as the challenges they may encounter in trying to embrace or implement this model of teaching in various smart-classrooms. The results of the findings reveal that the majority of the

teachers are not ready to adopt the gamification methods due to certain reasons. These reasons include lack of infrastructural deficiencies, poor perception of the teaching model, lack of confidence/competence due to poor institutional support. Educational implication of the above results is that the learners who passed through these teachers are likely to develop fear attitude when they meet academic program that are tied to computer usage. The teachers themselves are likely to have problems in preparing for their lessons. This is because, they need knowledge of computer to enable them keep pace with ever increasing body of knowledge that is needed to embrace fast evolving technological devices that drive ever changing world. To this effect, both the students and their teachers are encouraged to embrace attitudinal change to enable them cope with sad realities of the age. The age were refers to computer age where every activities of man is tied to computer.

Recommendations

Based on the findings of the study, the following recommendations are put forward:

1. Governments at all levels should make budgetary provisions to encourage teachers and also adequately fund the smart-classrooms. This could be done by allocating more fund for training teachers in gamification.
2. the teachers are advised to embrace these new technologies to enhance their teaching method, inspite of the challenges they may face in adopting this new model of teaching.
3. The principal of smart-schools should ensure that they provide institutional support to encourage the teachers to embrace this new model of teaching.

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