EFFECT OF GAMING STRATEGY ON JUNIOR SECONDARY STUDENTS' ACADEMIC ACHIEVEMENT IN YORUBA LANGUAGE

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Abstract
Yoruba learners deserve necessary tools required to prepare for the 21st century's global knowledge acquisition and the skills needed to be functionally linguistic. Games have many elements that make them powerful vehicles for human learning and have essentials skill needed for today's learner of Yoruba language. This study therefore investigated the use of gaming as an innovative strategy to teach Yoruba language in junior secondary schools. The purpose of this study was to investigate the effect of gaming strategy on junior secondary students' academic achievement in Yoruba language. A quasi experimental of pre-test-post-test non-equivalent control group design was adopted for the study. Simple random sampling technique was used to select four classes from two randomly selected junior secondary schools. A sample of 145 junior secondary school students from the targeted population of five junior secondary schools from two local governments in Abeokuta, Ogun State were assigned to two experimental groups and two control groups. 71 students formed the two experimental groups (36 and 35 students respectively) and were taught Yoruba language using gaming strategy while the 74 students (44 and 30 students respectively) in two control groups received the traditional method. In order to test the two hypotheses of this study, Yoruba Language Achievement Test (YLAT) was administered at the Pre-and Post-test stages of the research. The instrument was validated and pilot tested and a reliability coefficient of 0.79 was obtained using Guttmann Split-half statistic. Scores derived from the YLAT were analysed using independent t-test statistics. Gaming group reported a significantly higher level of academic achievement than the traditional method group. Statistically, there were significant differences between the two groups regarding their academic achievement. The findings revealed that: there is a significant difference in achievement of students taught Yoruba Language using gaming strategy and traditional Method (df = 143; t= -14.581; P < 0.05). And there is no significant difference in the achievement of male and female students taught Yoruba Language using Gaming (df = 69; t = .940; p>0.05.). The findings demonstrated that gaming strategy was effective in improving academic achievement of students in Yoruba language and their achievement was not based on gender.

Keywords: Gaming, Academic Achievement, innovative strategy, Yoruba Language, preservation

Introduction

Yoruba learners deserve necessary tools required to prepare for the 21st century's global knowledge acquisition and the skills needed to be functionally linguistic. Teaching and learning of Yoruba demands new techniques in teaching and learning process therefore Learners of this new dispensation need something new and revolutionary in learning Yoruba language. It is high time to adapt students with innovative technology learning so that they can be motivated and improve their learning. Teaching should not be a thing of textbook with verbal instruction as in traditional education system alone but learners should be well engaged and actively participated in learning through different innovative active base learning. Today learners expect a relax and joyful atmosphere in the classroom for learning with interest and attention. Learning environment is the big factor to adapt students with their learning system. Innovative strategy like the use of gamification can help to create high quality learning environments for learners especially in learning Yoruba language.

The traditional methods of language teaching in Nigerian schools have received criticisms from various stakeholders in education because these methods seem to lack the necessary tools required to prepare learners for 21st century's global knowledge acquisition and the skills learners need to be functionally linguistic (Oluwole, 2008). Today, teachers of Yoruba language should develop innovative teaching strategies that will work well for 21st century students in diverse classroom and must not follow the rigid method of teaching but apply flexibility approach in their teaching.

The concept of Gamification is basically new and finds its roots in learning theories like Kolb learning theory, cognitive learning theory, and social learning theory of constructivism which believes that learners should be active, engaged in learning. Gamification is the integration of game mechanics into normal activities in order to influence participant behaviour and engagement (Dubravac, 2012). Games motivate learners by capturing their attention through elements of curiosity, challenge and learner control, the learners are able to view existing ideas, solve problems, perform tasks, share feedback and reflect back on their participation and takeaways (Raj, 2015). However educational field like teaching and learning of Yoruba will be a potential area to apply gamification since it seeks to promote learners' thinking memory, motivation, engagement, and problem solving so as to preserve our cultural identity which is one of the crucial reasons for the integration of the major Nigerian languages in the Federal Republic of Nigeria, FRN, (2013). Thus language is one of the key factors in expressing a people's cultural identity and autonomy (Makinde, 2007). Arohunmolase (2006) also maintains that if learners in Nigerian schools are appropriately taught Yoruba, they would begin to understand the cord that links the Yoruba language to other indigenous languages thus creates a bond between the speaker and his cultural background and origins.

Statement of the Problem

The strategy of teaching is a well-known factor for promoting students' learning effectively. If the teaching of Yoruba Language is done with learning activities that encourage learners' engagement and learners actively practise the skill of the Language using innovative technology, this could take care of the needs of this present 21st century students of Yoruba in our secondary schools. Innovative strategy like gaming is a strategy that can motivate and enhance students' mastering Yoruba Language. However, little is known of the influence of gamification in

improving student academic achievement in Yoruba language, therefore, this paper tries to explore gaming in teaching Yoruba language and provide empirical examples on how it can be used in the learning and development of the language

Research Hypotheses. The following hypotheses were tested at 0.05 level of significance.
H_{01}: There is no significant difference in Yoruba Language academic achievement of students taught using Gaming and traditional Method.

H_{02}: There is no significant difference in the performance of male and female students taught Yoruba Language using Gaming

Scope of the Study
The study focused mainly on active learning which involved the use of gaming in Yoruba Language on junior secondary schools in Abeokuta in Ogun State. The investigation was limited to language- communicative and grammatical aspect of Yoruba language at junior secondary school level. Performance in the study was limited to students' achievement scores in test instruments designed for the study.

Theoretical Framework
The theoretical framework on which this study is based is constructivist theory of learning by Vygotsky of 1978. Constructivist learning theory states that learning is an active process of creating meaning from different experiences. The theory stresses the fundamental role of social interaction in the development of cognition; arguing that knowledge is the internalization of social activity.

Vygotsky suggests that learning takes place through the interactions students have with their peers, teachers, and learning environments. (Vygotsky, 1978) The task of teachers is to create a learning environment that maximizes the learners' ability to interact with each other through different activities. This would require that learning is facilitated by involving and engaging students in different tasking activities in the lesson classroom. It is on this note that strategy such as gaming supported learning activities that can be tried in the teaching and learning of Yoruba Language in schools.

Gamification
In today's digital generation gamification has become a popular tactic to encourage specific behaviours, and increase motivation and engagement. The concept has been explored in marketing area and other fields before, such as Health, Environmental Care, Business, Government or Education. (Borys & Laskowsk 2013; Wolpe, 2013; Werbach & Hunter, 2012) so gamification is one of the latest emerging trends today. Deterding, Dixon, Khaled and Nacke (2011), defines gamification as the use of game design elements in non-game contexts. Research indicates that people play games not as much for the game itself as for the experience the game creates: an adrenaline rush, a vicarious adventure, a mental challenge (Lazzaro, 2004). Each experience provides the opportunity to have one or many different kinds of fun during the game. Therefore, it is worth to be considering implementing some game elements and mechanics into learning process in order to enhance its attractiveness and increase students' engagement.

Gamification is not about games people play at school, but about using game mechanics, for achieving positive learning effectiveness.

Gaming is in different categories, ranging from simple to complex, single-player to multi-player, old to new, and non-digital to digital. There are different types of games that are educational; scrabble, puzzles like, jigsaw, words, and Sudoku, card games, educational toys, role playing games, free rice games, spellbound, Sheppard software, singing games, quizzes, skill games, cooperating games, conversation games, computer games and many others. However teacher can develop or create new idea of games into the content but the main objective is to promote learning and deepen student understanding. The structural elements of games are especially suited to serve this current generation of learners (Schaaf & Mohanan, 2014).

Gaming as a teaching strategy
Gaming is an active learning teaching strategy. Many studies have shown that learning is enhanced when students become actively involved in the learning process (Bonwell, & Eison, 1991). Meyers and Jones (1993) define active learning as learning environments that allow students to talk, listen, read, write, and reflect as they approach subject content through problem-solving exercises, informal small groups, simulations, case studies, role playing, and other activities. Active learning teaching strategies include a wide range of activities that share the common element of involving students in doing things and thinking about the things they are doing‖ (Bonwell &Eison 1991). The strategies shifts the focus from the teacher and her delivery of subject content to the student and his active engagement with the material (Meyers & Jones, 1993). On the other hand, Cafarrella, (2002) categorises active learning thus as role play, gaming, debates, case studies, simulations, computer-based (web quests, internet searches etc.), concept mapping, storytelling, problem-based learning, project-based learning, collaborative learning and inquiry learning. Active teaching approach promotes active participation of students in the classroom activities. Oyinloye (2008) reiterates that if teachers provide learners with interactive opportunities in Nigerian schools, then the quality of Language learning would improve. The importance of employing various teaching techniques is further stressed by Lopes (in Ahmad and Aziz, 2009), that students generally have a poor grasp of a language and part of the problem lies with the conventional teaching method employed. Moreso, Green and Bavelier (2012) state that the success of game-based learning strategy owes to active participation and interaction being at the centre of the experience and signal that the current educational methods are not engaging enough. In actual fact gaming enhances retention and retaining knowledge over the long-term and provides the students the avenue for involvement, motivation, enjoyment, and creativity in learning (Prensky, 2010)

Gaming and learning achievements
Over a period of times, researchers had found that gaming can indeed have several positive effects on students' academic achievement and skills. Although there is overall support for the idea that games have a positive effect on affective aspects of learning, but there have been mixed research results regarding the role of games in promoting cognitive gains and academic achievement. Vogel, Vogel, Cannon-Bowers, Bowers, Muse, and Wright,(2006), Mubaslat (2012) and Guiang (2013) reiterate that the inclusion of games for students' learning have higher cognitive gains compared with traditional teaching methods Teachers should first consider and

understand the level of the game to fit their students' language level and the appropriate time to integrate them into the regular syllabus and curriculum (Carrier 1990; Mubaslat, 2012).

In spite of the high attention that educational gaming can enhanced student achievement, empirical findings on the effects are inconsistent. For example, Okolo (1992) did not find significant differences between game-based and classroom groups of students, yet, positive results were observed for students with high achievement motivation. A number of studies revealed the negative effects of gamification (Costabile, De Angeli, Rosclli, Lanzilotti, & Plantamura, 2003), Most importantly, Huang and Soman (2013) state that applying gamification to curriculums does not mean it should be a replacement for a comprehensive curriculum or face-to-face instruction but teachers must be careful not to depend on extrinsic motivators in the game to modify student behaviour, as the habit created during the gamified process may not sustain once the extrinsic reward is gone.

Due to the limited number of rigorous studies exploring effects of gamification and the fact that different researchers used different types of gaming at different time in different areas and regions, this research deem it fit to co-ordinate various task-based activities like infinite word search puzzle, and Tinycard - computer application flashcard, giving room for collaborative learning to make learning more facilitating, motivating, retentive and applicable. The fact remains that the use of games involve variety of activities that promote imaginative thinking, interaction, creativity, engagement, motivation, retention, intuitive discussion, solving of problems and classroom far from being too dull and quiet, therefore, it would be wise to research the pedagogy of gamification as a strategy on junior secondary school students in Yoruba language.

Gender and Students' Achievement
Haig (2004), (in Unity and Igbudu, 2015) states that gender is the range of physical, biological, mental, and behavioural characteristics pertaining to Masculinity and Femininity. Depending on the context, the term may refer to biological sex (i.e. the state of being male and female), or sex based on social structure (this include gender roles and other social roles and gender identity. There have been different assumptions about gender disparity in students' achievement. Some studies show that, on average, girls do better in school than boys, while on the other hand , other affirm that male students are more learning goal oriented and also performed significantly better than females (Jacobs, 2002, Obayan (2006); Karthigeyan & Nirmala, 2012; Mussen (in Chudi-oji, 2013; Musa 2013).

In different works that studied previous research regarding gender, and gamification, Agosto (2004) found that both genders at the preschool age showed the same enthusiasm in gaming activities. However, Hartmann and Klimmt (2006), showed that females enjoyed games featuring meaningful social interactions but were less attracted to competitive aspects of games compared with males. Thus, other studies have not found significant differences in the types of goal pursued as a function of gender (Ryan & Pintrich, 1997) From the fore going, it becomes imperative to provide empirical evidence explaining these gender issues as it relates to the teaching and learning of Yoruba Language through gaming.

Material and Methods

Design
Quasi experimental Pre-test, post-test non-equivalent control group design was used for the study. Quasi experimental was employed because of non- randomization of the subjects. The students were not randomized because of the problem of re-grouping of intact classes, so as not to disrupt the organizational structure of the school, and classes. The design is represented as follows**:**

0_1 X_1 0_2
0_3 X_2 0_4
X_1: Gaming
X_2: Traditional method   \

Population and Sample
The targeted population consists of five Junior Secondary Schools in Abeokuta, Ogun State, Nigeria. The selection of the schools was based on following criteria: (i) constant electricity supply, (ii) availability of working computer systems (iii) qualified and experience teachers that have been teaching the subjects for past 10 years: (iv) availability of big classrooms where students can interact and comfortable furniture where students can sit and work as groups. One school each was randomly selected from the two local government area through balloting. Simple random Sampling technique was used to select the intact classes and the four classes were spread across two schools, two treatment classes used gaming strategy and two control classes used traditional method. 145 participants were selected using simple random sampling technique and were shared as follows

Group A – The Experimental (Gaming): 1st class =36, 2nd class =35. Total = 71
Group B– The control group (Traditional method): 1st class =44, 2nd class =30. Total = 74

Method of Data Collection
"Yoruba language Achievement Test" (YLAT) was constructed to measure students 'academic achievement in Yoruba language; the tests were both written and oral based on the content for the study. The treatments were administered on the two groups. The groups were exposed to the same curricular content. The experimental group was exposed to gaming while the control group was taught using traditional method. The treatment lasted for 4weeks.

Treatment Procedure for Experimental group: Gaming
Students were divided into various groups. Different tasks and activities reflecting the lesson content were assigned to the different groups. Activities during the classroom instruction involved, role plays, classroom dialogues, puzzle, web activities, games and group discussion so as to make the instructional process more interesting, interactive and engaging. Students were encouraged and motivated to initiate, participate, demonstrate in groups' discussion and write major points of their discussion in their notebooks. The teacher gave each group specific instructions on how to accomplish the assigned tasks within a time frame. Activities were structured after the content of the Yoruba textbook used in the class. The discussion between the students in different groups were summarised in writing on the chalkboard by the teacher as the major points of the lesson.

Treatment Procedure for the Control Group
The instructional process for the control group was predominantly the traditional classroom which relied on the course content and teacher's explanations. The teacher was mainly involved in the talking, presentation of instructional content, identification and explanation of difficult words as well as the assigning of assignment at the end of the lessons. Most times, the teacher provided solutions or explanations when students did not respond to answer questions. As a matter of fact, from the beginning to the end of the lesson, students sat to face the teacher as well as the chalkboard.

After teaching experimental group through Gaming and the control group through traditional method, the two groups were tested using YLAT as post-test to assess possible changes in students' level of achievement in communicative and grammatical aspect of Yoruba language. The procedure for the research treatment was in four phases. The four phases involved were the preliminary, pre-treatment, the treatment and the post-treatment stages.

Data Analysis
The statistical analysis of the data gathered for this study was performed by using descriptive and inferential statistics. The inferential statistics used involved independent t-tests statistic for hypotheses 1 and2 at 0.05 level of significance.

Results

Table 1:   Summary of Students' Pretest Mean Scores by Treatment Groups

Group	N	Mean	Std. Dev.
Exp. Group :Gaming	71	24.11	9.54
Control Group: traditional	74	22.45	12.20

Table 1 shows there was no significant difference in the pretest mean scores of the groups.

Table 2: Summary of Students' Post Test Mean Scores and standard Deviation by Treatment Groups

Group	N	Mean	Std. Dev.
Exp. Group (Gaming)	71	77.31	13.63
Control Group (traditional)	74	41.01	14.75

. The table showed that there was significant difference in the posttest mean scores of the groups.

Hypotheses
1- There is no significant difference between the academic achievement of students taught Yoruba Language using gaming strategy when compared with those taught with traditional method using their pre test post test mean score

Table 3: **Summary of t-test Analysis of Yoruba Language Students' Achievement in Gaming and traditional method**

Method	N	Mean	Std.D	df	t.cal	t.crit.
Gaming	71	77.31	13.63	143	-14.58	1.98
Traditional	74	41.01	14.75			

Significant P<0.05
(df = 143; t= -14.581; P < 0.05).

2. There is no significant difference in the achievement of male and female students taught Yoruba Language using Gaming.

Table 4: **Summary of t-test Analysis of Achievement of Male and Female Students taught using Gaming**

Variable	N	Mean	Std. D	Std. Error	Mean Diff.	df	t	Sig (2-tailed)	Remark
Male	41	25.02	9.84	2.84					
Female	30	22.86	9.14	3.81	2.16	69	.940	.350	Not Significant

(df = 69; t = .940; p>0.05).

Discussion

The study reveals that there is significant difference in Yoruba Language academic achievement of students taught using Gaming and Traditional Method,(df = 143; t= -14.581; P < 0.05).Hence, hypothesis 1 is rejected. Using Gaming strategy significantly improved students' achievement in Yoruba Language. The outcome of this study supports other number of studies in which comparisons have been made between innovative methods of teaching and traditional methods of teaching (Agbatogun 2013; Mishra & Yadav, 2013; Dike & Umegboro, 2015), their findings stated that when innovative active based approach is used as treatment, there is always an improvement in the achievement of students in experimental group.

There are possible explanations for the experimental groups' significantly improved academic achievement scores in Yoruba language. At first, students in gaming groups were exposed to a series of interactive tasks, such as role-play, dialogues, games, quizzes, different web activities, group discussions, the use of flash cards and game-like activities during their Yoruba lessons. Such opportunities were lacking in the lecture classroom, where the teacher did most of the talking and the students sat and passively listened. Secondly, the gaming has interactive and active aspects which enable learners to showcase their levels of understanding of the lesson and to develop new knowledge, while they test out their knowledge by sharing information with others.

Gender is one of the key factors influencing students' academic achievement. The finding shows that the mean score of the male students is 25.02 while the female students is 22.86 in gaming instruction. The values of the mean scores do not reveal appreciable difference. This is to say that both the male and the female students equally performed well in the group. Therefore, there is no significant difference between the Achievement of male and female students taught Yoruba Language using gaming (df = 69; t = .940; p>0.05). Based on this result, hypotheses 2 is accepted. The present results is in accordance with the study of Kang'ahi, Indoshi, Okwach, & Osodo,(2012) , Farahani and Nejad, (2009) that the language proficiency development of students who are exposed to task-based teaching approaches is not influenced by gender. In view of this, it will be concluded that the use of games has the capacity to improve the achievement of both genders students in Yoruba language

Conclusion
From the findings of the study gaming Strategy is found pedagogically rewarding and reliable in the teaching of Yoruba language specifically for foundational grammar. It is rewarding because students are able to contribute actively in class, they are able to benefit from the contributions of others and also to generate ideas. Based on these findings, teachers of Yoruba Language should make use of gaming strategy to teaching Yoruba language as it has higher positive effect on the academic achievement of students than traditional method.

It is therefore hoped that the outcomes of this study have provided significant insights into the strategy to be used that would promote the use of the Yoruba language in secondary schools in Nigeria thereby promoting and preserving our cultural heritage and identity.

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