

**WHATSAPP APPLICATION AND STUDENTS LEARNING OUTCOMES IN
CIVIC EDUCATION**

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Abstract

This paper examined the effect of whatsapp application on the learning outcomes of pre-service social studies teachers in civic education. The study adopted a quasi-experimental, involving one experimental group and one control group using pre-test, treatment and post-test design. The subjects for the study consisted of two Colleges of Education 200 level social studies students in Ogun and Oyo State. Two states were randomly selected from the six states in South West of Nigeria from which two Federal Colleges of Education in Ogun, and Oyo states were purposefully selected. Eighty-four (84) pre-service teachers that comprise of fifty (50) female and twenty-four (24) male constituted the sample. The participants were selected using stratified random sampling technique from volunteers. Two null hypotheses were tested at 0.05 level of significance level. One procedural instruments "WhatsApp application training package" (WATP) and one measuring instrument "WhatsApp application achievement test" (WAAT) ($r=0.68$), were used for the study. The treatment lasted for six weeks consecutively. Data were analyzed using ANCOVA to examine the differences in the performance of the students exposed to the two teaching strategies. It was found that WhatsApp application contributed more significantly than conventional method in enhancing the learning outcome of the students in civic education. Based on the findings, it was recommended that WhatsApp should be used to complement teaching and learning in our schools, since it encourages teaching beyond the four wall of the classroom.

Keywords: Whatsapp application, learning outcomes, civic education.

Introduction

In recent time, educational mobile technology is frequently used in online instruction in universities worldwide (Jimoyiannis, Tsiotakis, Roussinos, & Siorenta, 2013). Mobile technology offers students increased choices and opportunities in the context of online instruction. Online courses that incorporate mobile technologies are becoming a more frequent component in universities, and the number of web-based mobile courses has increased (Inan, Flores, & Grant, 2010). Educational mobile tools have emerged and show great potential to help students construct and share information and knowledge for learning through computers or mobile devices (Pence, 2007).

The information and communication technologies shared between online

students through social interactions on mobile tools promote opportunities for online cooperation and collaboration (Barhoumi & Rossi, 2013). Mobile educational technologies provide online learners with opportunities to communicate and share knowledge (Nelson, Christopher, & Mims, 2009). The availability and the use of mobile messaging applications are increasingly widespread among the new generation of students, most important among the tertiary institution students in Nigeria.

Importance of Mobile Learning in Education

Berger, (2001) lists the implications that mobile technology can bring to teaching and learning:

- ❖ Better realization of "anywhere, anytime",

- ❖ Freedom of organization in and out of the classroom,
- ❖ Collaboration among students separated geographically,
- ❖ Transparent connection to nets,
- ❖ Remote sensing and integration of information,
- ❖ Shift from "anywhere, anytime" to "everywhere, every time". Mobile learning is a paradigm shift and it changes existing situations in learning (Singh, 2003).

WhatsApp (from the English phrase "What's up?", meaning "What's new?") is an instant messaging application for smartphones. It allows users to exchange images, videos, and audio or written messages using their Internet connection. WhatsApp has positioned itself as a superior alternative to SMS messaging, which can be very expensive when used in foreign countries due to roaming charges; WhatsApp, in contrast, relies on the active Wi-Fi network. Today, WhatsApp, which was acquired by Google claims 400 million active monthly users (Barhoumi, 2015).

Amry, (2014) quoting WhatsApp 2010 that WhatsApp messenger is a mobile application that employs users' existing internet data plan to help them network with others. It is used for sending and receiving messages, video and audio messages. WhatsApp this days had spread mostly among young people who are students and other artisans, it is mostly used as an entertainment and funny tool. They largely depend on it to know a lot of news around the world. Besides, they may help them in their learning through exchanging information needed in learning civic education since it is used by most of the students. It provides access to learning resources when teachers and students are separated by time and distance (Honeyman & Miller, 1993).

One of the major disadvantages of this devices therefore is that WhatsApp's success derives from teenagers "sexting," ultimately, the

application took off because it was able to exploit users' desires to release themselves from their cell phone plans (Barhoumi, 2015). In spite of this, the general benefits of using WhatsApp instant messaging in the blended mobile lecture are as follows:

- i. WhatsApp instant messaging facilitates online collaboration and cooperation between online students connected from school or home in a blended mobile lecture.
- ii. WhatsApp is a free application that is easy to use.
- iii. Groups connected to WhatsApp instant messaging can share learning objects easily through comments, texting and messaging. Discussions are related to the course content taught 100% in-class.
- iv. WhatsApp provides students with the ability to create a class publication and thereby publish their work in the group.
- v. Information and knowledge are easily constructed and shared through WhatsApp instant messaging.

The theoretical foundation upon which this work is situated can be found in the social constructivism theory strongly influenced by Vygotsky's (1978) work, who suggested that knowledge is first constructed in a social context and is then taken up by individuals (Eggen & Kauchak, 2004). In Social constructivism, the process of sharing each person's point of view—called collaborative elaboration (Meter & Stevens, 2000) results in learners building understanding together that wouldn't be possible alone (Greeno, Collins and Resnick, 1996). Social constructivism is based on specific assumptions about reality, knowledge, and learning. Social constructivists believe that reality is constructed through human activity. Members of a society together invent the properties of the world (Kukla, 2000). Social constructivism encourages the learner to arrive at his or her version of the truth,

influenced by his or her background, culture or embedded worldwide. It stresses the importance of the nature of the learner's social interaction with knowledgeable members of the society (Wikipedia, 2014).

Amry (2014) conducted a study to explore the impact of using WhatsApp mobile learning activities on the achievement and attitudes of online students using mobile devices at the university. Results showed that there are differences, in the achievements and attitudes of the experimental group compared with the control group in favour of experimental group. Alhawiti (2015) conducted a study on the effect of the WhatsApp method of learning English for Specific Purposes (ESP) students' achievement at the community college of Tabuk. Findings showed that the experimental group showed higher progress in ESP post-test comparing with control group. Ta'amneh (2017), studied the effect of using "WhatsApp messenger" in learning English Language among university students during the academic year 2015/2016. The results showed that there were differences in the achievements of the students in favour of the experimental group. This showed that integrating the WhatsApp application in teaching English language improved the abilities of the learners of the experimental group. The research on the appropriateness of a method that could be used in the teaching of civic education had remained inconclusive and consequently, the gap that this study set to fill is to investigate whether WhatsApp application with the consideration of gender can lead to higher academic attainment in civic education than the conventional methods

Objectives

In specific terms this study is designed to achieve the following objectives:

- (i) Explore the relative effectiveness of WhatsApp strategy and conventional method in enhancing the civic knowledge

among pre-services social studies teachers.

- (ii) Assess the moderating effects of gender on student knowledge on civic education when taught using WhatsApp application.

Rationale for the study

Using social networks as ancillary tools for students to learn various field of study effectively has been studied quite a lot in Nigeria and other part of the world. Moreover, mobile messaging applications have also been utilized to improve students' progress in learning different enhancing students knowledge, creating awareness on social and political issue, improving students skills. However, works on the effects of WhatsApp in enhancing civic knowledge of the students are limited. Also, not many research studies have been done on the moderating effects of gender in the application of WhatsApp as a teaching technique in civic education. This research work therefore examine effectiveness of the application of WhatsApp on students academic performance in civic education.

Research Questions

The following research questions guided the study:

- (i) What is the influence of WhatsApp Application strategy on the knowledge of pre-service social studies teachers exposed to civic education concepts?
- (ii) What is the pattern of performance of pre-service social studies teachers' scores on knowledge of civic education on the basis of gender?

Research Hypotheses

The following hypotheses are tested at 0.05 alpha level

- (i) There is no significant difference in the mean post test achievement scores of student exposed to civic education under different conditions
- (ii) There is no significant difference in the mean post test achievement scores of male and female students exposed to civic

education under different treatment conditions.

Methods

The subjects for the study consisted of two Colleges of Education 200 level social studies students in Ogun and Oyo State. Two states were randomly selected from the six states in South West of Nigeria from which two Federal Colleges of Education in Ogun, and Oyo states were purposefully selected. Eighty-four (84) pre-service teachers that comprise of fifty (50) female and twenty-four (24) male constituted the sample. The participants were selected using stratified random sampling technique from volunteers. The participants in Federal College of Education Abeokuta were exposed to WhatsApp Application Strategies while the participants in Federal College of Education (Special), Oyo, were used as the control group and they were exposed to a conventional strategy.

Three instruments were used, namely, "WhatsApp application training package" (WATP), Conventional Method Instructional Package (CMIP), and "WhatsApp application achievement test" (WAAT) ($r=0.68$). WATP and CMIP are teaching materials used to expose the students to multicultural education, while (WAAT) is the measuring instrument. All the teaching instruments focused on the topics selected from the key concepts of civic education. To establish the content and face validity of this instrument copies were given to some experts in the field of education. This was to ascertain the suitability of the instrument in terms of language, presentation, clarity and

applicability. Based on their observations necessary modifications were made. Also, a field trial of the instruments was carried on a randomly selected 200 level social studies students that did not take part in the main study. The reliability index was calculated using split half the value was achieved at the 0.68 reliability level.

The programme was run for six weeks. On the first week of the programme, a pre-test was conducted for the students on the selected themes from multicultural/social studies education related areas to know their entry level. After the pre-test, the subjects in the experimental groups were exposed to four interactive sessions during which they were taught topics related to civic education. Each session lasted for 40 minutes per day and this consisted of presentations by the researcher and activities by the learners, while the participants' subjects in the control group were also exposed to the selected topics for three weeks using conventional method. This was followed by the post-test given and administered on the learner by the researcher.

Results and Conclusion

Research Questions 1: What is the influence of the teaching strategies on the knowledge of pre-service social studies teachers exposed to civic education concepts?

The pattern of performance in the pre and post-tests of the participants exposed to the three strategies are presented in the table 1

Table 1: Distributions of Pre and Post-test Achievement Scores of Students in Civic Education Concepts in Social Studies According to Instructional Strategies.

Group	Pre-test	N	Mean	Mean Gain	S D	Range	Min.	Max.
WhatsApp	Pre-test	31	20.65	15.87	2.811	12	14	26
			36.52		5.221	24	21	45
Control	Pre	29	20.10	0.66	2.944	12	14	26
		29	20.76		1.662	09	17	30

The results in table 1 show students' performance before and after interventions. A pre-test mean achievement score of 20.65 and standard deviation of 2.811 were observed for participants in the WhatsApp application group while mean score of 20.10 and standard deviation of 2.944 was observed for the participants in the control group. The pre-test mean score of WhatsApp application and the control group were very close with a margin of 0.55. This shows that the pre-test performances of the students are very close before intervention.

However, after treatment, positive mean gains were recorded within the two groups with the students in WhatsApp application recording the highest mean gain of 15.87 while the students in the control group had 0.66 mean gain. Also, the WhatsApp group recorded the highest mean post-test score of 36.52 and standard deviation of 5.221 while the students in the control group had post-test mean of 20.76 and standard deviation of 1.662.

Table 2: Distributions of Pre and Post-test Achievement Scores of Students in Civic Education Concepts in Social Studies according to Gender.

G e n d e r	N	Mean	Mean Gain	S D	Range	Min.	Max.
Male	Pre-test	20.18	8.64	2.695	1-1	1	4
		28	28.82	8.895	26	17	43
Female	Pre	20.56	8.41	3.037	12	14	26
		32	28.97	8.942	25	20	45

The table revealed that the male recorded a pre-test mean score of 20.18 (S.D. = 2.695) and female 20.56 (S.D. = 3.037) with a margin of 0.38 between them. This showed that both the male and female were fairly similar in their knowledge of Civic Education before intervention. By ranking the female had higher mean score than the male though not wide. The level of performance of the two groups was high, given the highest obtainable mark of 50. Both the standard deviation and the range revealed a measure of scatteredness in scores of the two groups: whereas the female has higher standard deviation

The level of performance in the two group had risen above the highest mean score of the pre-test group after intervention.

The table further revealed that the highest post-test score of 45 was recorded by a student in WhatsApp group while a student in control group recorded the lowest post-test score of 17.

Research Questions 2: What is the pattern of performance of pre-service social studies teachers' scores on knowledge of civic education on the basis of gender?

The pattern of performance in the pre and post-tests of the subjects based on gender is presented in the table 2

and range, the male group has the smaller standard deviation and range. Hence, the male group shows better homogeneity than the female group. Also, the table revealed that the female recorded the highest pre-test score of 26.

Furthermore, the table revealed that the two groups male and female recorded a positive mean gain after intervention with the male recording higher mean gain of 8.64. The post-test mean scores revealed that the female had the higher post-test mean score of 28.97 (SD= 2.695) than the male students whose mean post-test mean score was 28.82 (SD= 8.895) The

level of performance in post-test has risen above the pre-test. Both the range and the standard deviation in

the post test have increased in both male and female group.

Test of Hypotheses

The results of the two hypotheses tested in this study are presented below.

Table 3: Summary of the Analysis of Covariance Test on Students' Achievement Score in Civic Education According to Teaching Strategies and Gender.

Source	Type III Sum of Squares	Df	Mean Square	F	Sig.	Partial Eta Square
Corrected Model	3812.615 ^a	2	1906.308	135.353	.000	.826
Intercept	440.184	1	440.184	31.254	.000	.354
Pretest	92.268	1	92.268	6.551	.013	.103
Treatment	3576.244	1	3576.244	253.924	.000	.817
Gender	35.013	1	35.013	3.706	.322	.802
Error	802.785	57	14.084			
Total	54728.000	60				
Corrected Total	4615.400	59				

R Squared = .826 (Adjusted R Squared = .820)

H₀₁: There is no significant difference in the mean post-test achievement scores of students exposed to civic education under the different treatment conditions.

Table 3 presents the result of the main and interaction effects of treatment and gender on the students achievement in civic education at .05 significance. The table shows that there were significant main effects of instructional strategy ($F_{(2,57)} = .000$, $P < 0.05$) on the mean post test achievement scores of the students exposed to civic education. Hence, the null hypothesis one (H₀₁) is rejected.

H₀₂: There is no significant difference in the mean post-test achievement scores of male and female students exposed to civic education under different treatment conditions.

The result in table 4.7 revealed no significant main effect of gender on the students' post-test achievement scores in civic education ($F_{(2,57)} = .322$, $P > 0.05$). This outcome implies that the post-test mean achievement scores of male and female students are not significantly different at the .05 significant level. Hence, null hypothesis two cannot be rejected.

Conclusion

On the effects of teaching strategies on learning outcome of students in civic education concepts, findings from the descriptive statistics showed that the post-test mean scores was high in WhatsApp than the conventional method. Also, Analysis of co-variance revealed a significant main effect of instructional strategies on students learning outcomes in civic education. The result of this study seems to confirm the findings Ogunyemi (1994), Obadiora (2012) and Ajitoni, Salako and Ojebiyi (2013) who discovered significant effects of innovative methods over conventional methods in their studies. However, this result run in contrary to the findings of Adetoro (2014) who found no significant difference in the performance of students in peace education aspect of social studies. What account for the significant differences in this study may be due the fact that students mostly preferred personalised strategies to teacher-centred methods of teachings and that fact that WhatsApp allow students to learn freely irrespective of their location.

Finding in respect of H₀₂ indicate no significant main effect of gender on the students post-test achievement scores in civic education according to

teaching strategies. This result is consistent with those of other studies of Fagbemi, Gambari and Oyedun and Gbodi (2012) and Peter (2014) who found no significant difference in the performance of students' after treatment based on gender. However, the result is in contrast to earlier findings of Olibie and Ezeoba (2013) and Apaak (2016) which found that male students performed better than female students in the achievements scores and Nnamani and Oyibe (2016) who found the female performing more than the male in their studies. All students irrespective of their sexes benefited in about the same margin from the use innovative methods. This may be the reason why no significant difference is found in achievement between male and female. Thus, the issue of gender both on the part of the teacher and the students' will continue to be in focus as regard their moderating effects on the academic achievements in school subjects.

Recommendations

In view of the findings of this study, the following recommendations are proposed:

- i. Government should provide opportunities for practicing teachers to learn more about innovative instructional strategies such as using technology in teaching and learning.
- ii. Methods of teaching civic education should be mixed together to enhance the teaching and learning of civic education in the students. Conventional method of instruction should always be combined with technological driven innovative strategy when teaching civic education aspects of social studies.
- iii. Regular seminars and workshops should be given by experts on the use of whatsapp application technique to the serving social studies teachers in primary, secondary and tertiary level.
- iv. Authors of textbooks, curricula and instructional materials on civic education and social studies should provide additional opportunities for teachers and students to learn more about the application of whatsapp application strategy.

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