

AIMC 2017
Asia International Multidisciplinary Conference

**RESEARCH TRENDS ON THE USE OF WHATSAPP IN
EDUCATION: A CONTENT ANALYSIS**

Ahmad Abdullahi Ibrahim (a)*, Hadiza Hafiz (b), Aliyu Musa (c)

*Corresponding author

(a) Department of Arts & Social Sciences Education, Northwest University Kano, Nigeria
ahmad.daneji@yahoo.com

(b) Department of Arts & Social Sciences Education, Northwest University Kano, Nigeria
draliyumusa@yahoo.com

(c) Department of Arts & Social Sciences Education, Northwest University Kano, Nigeria
hadizanwu@gmail.com

Abstract

The study aims to identify the trends of researches on the use of WhatsApp in education which were published between the years 2013 and 2017 and to guide researchers who are forecasting to conduct their research in the specified area to identify key areas needed for further investigation in the area. The data obtained through open source online publications like Google Scholar is presented in table using descriptive statistics in forms of frequency and percentage. The research findings show that most of the researches were carried out in 2016. It is also revealed that most of the studies were conducted on using WhatsApp for teaching languages especially English language. Similarly, the results show that majority of the studies in the area are quantitative in nature; questionnaire and test-scores are the main instruments used for data collection; a descriptive analysis method is most employed techniques of data analysis of the studies. With regard to sample group, undergraduate students were selected as research participants in most of the studies. Finally, the study offers the necessary recommendations for researchers on the use of WhatsApp in education.

© 2018 Published by Future Academy www.FutureAcademy.org.UK

Keywords: WhatsApp, Content Analysis, Educational Research. .



1. Introduction

The pervasive and consistent evolving nature of Information and Communication Technology in education nowadays provides an indication of how the education is valued and its need for constant reform by contemporary researchers in instructional technology. Technology sharply changes our live, especially in the field of education. Through the development of social network technology such as WhatsApp, Facebook, Twitter etc any kind of information can quickly be passed to many groups of people (Arslan, Savaser, Hallett & Balci, 2012). This necessitates the use of such technologies in education in order to expand the process of teaching and learning beyond the boundary of classroom and to provide opportunity for students and teachers to communicate with one other regardless of their distance and locations. WhatsApp is seen as one of the recent technological applications that attract the attention of educators and researchers in the field of instructional technology.

The application is available in almost every smart phone. Ibrahim, Idris and Hafiz (2015) expressed that WhatsApp as an instant message application has been used for sharing information, images, files, audio, videos, conducting real time conversation and for live video call. The application has been in the market since 2010; with aim of replacing the SMS platform of instant messages (Etim, Udosen & Ema, 2012), and to help students to fully participate in learning process as declared by the developer of the application (Ibrahim et al., 2015). Sam (2016) argued that WhatsApp is used in teaching and learning process to serve four main purposes: communicating with students; nurturing the social atmosphere; creating dialogue and encouraging sharing among students; and as a learning platform. Due to the affordability and less less-complex nature of WhatsApp, it is widely accepted and used for teaching and learning at different ladder of educational system (ranging from basic education up to higher education). Despite the fact that is perceived as an application that negatively effect on students writing skills (Bansal & Joshi, 2014), distracts students' attention in the class (Munkaila, 2015) and wasting students' time(Goodman, 2014), however. It is found to be effective tool for enhancing students' academic performance (Yin, 2016), motivation (Newaz & Karim, 2016), learning engagement (Ibrahim, et al. 2015), as well as other benefits related to schools themselves .

2. Problem Statement

It might be palpably clear to some readers that, there are a lot of researches conducted on the use of WhatsApp in teaching learning in particular and in education in general. This naturally brings to an issue; while the results of some studies go parallel with one other, others simply contradict with each other. Content analysis is seen as a method that helps researchers to evaluate and analyze different studies (Mavi & Uzunboylu, 2014). Thus, this study is aims to review different studies on the use of WhatsApp in teaching and learning. In the field of instructional technology, many content analysis were conducted to examine and evaluate research trend of a specified instructional tools such as Interactive Smart board (Mata, Liliana, 2016; Vita, Verschaffel & Elen, 2014), flipped classroom (Zainuddin, & Halili, 2016; Aydın & Demirer, 2016), distance education (Bozkurt et al., 2015), and online learning (Ozyurt & Ozyurt, 2012). However, based on the available literature to the researcher a number of content analysis on the use of WhatsApp in education is quite limited or even not available. Thus, this study performs content analysis to the researches of WhatsApp in education in general and teaching and learning particular which are reached through open

source online publications. Since there is limited content analysis research on the above mentioned area, it is thought that such a study bridge a gap in the literature.

3. Research Questions

This study looks to answer the following research questions:

- 1- How are the articles within the context of the study distributed by years?
- 2- How are the articles according to specific subjects within the context of the study distributed?
- 3- What are the most employed research method and design in the articles within the context of the study?
- 4- Which data collection instruments are mainly used in the articles within the context of the study?
- 5- What are the most common sampling type and sampling size used in the articles within the context of the study?
- 6- How are the data analysis techniques in the articles within the context of the study?
- 7- How are the articles according to the number of their authors within the context of the study distributed?

4. Purpose of the Study

Based on the problem statement mentioned above, this study aims to identify the trends of researches on the use of WhatsApp in education which were published between the years 2013 and 2017 and to guide researchers who are forecasting to conduct their research in the specified area to identify key areas needed for further investigation in the area

5. Research Methods

5.1. Research Design

Based on the purpose this study, content analysis as well as document scanning method deem suitable research design for this study. Shannon (2005) denoted that content analysis gives researchers opportunity to link data which are related to each other and generate themes that can be read conveniently and use as a reference of their potentials studies. More interestingly, the design has been widely used by researchers to understand different range of themes such as changing trends in the theoretical content of various fields of study, cultural symbols, social change, verification of authorship, changes in the mass media content, nature of news coverage of social issues like violence against women and children, divorce rate, truancy etc (Prasad, 1994).

5.2. Data of the Study

With regard to the data of this study, fifty (50) studies on the use of WhatsApp in education published between the year 2013 to 2017 and available in Google scholar are selected as the data of this study. Only published studies in reputable journals were selected. This indicates conference papers and published or un-published theses and dissertation on WhatsApp use in education are not considered as a data in this

study. In addition to that, the researcher set the following criteria as the basis of evaluating the selected articles:

- i- Publication year
- ii- Research title
- iii- Research method(s)
- iv- Research design
- v- Data collection instrument(s)
- vi- Sampling type and size
- vii- Data analysis techniques and numbers
- viii- Number of authors

5.3. Data Analysis

Following the content analysis, the data (50 selected articles) were recorded in a database. Recorded data was analyzed by the researcher using descriptive statistics. The results are presented in a descriptive manner as frequencies, percentage tables.

6. Findings

The findings are presented in sequence based on the research questions of the study.

6.1. Distribution of WhatsApp Researches by Years

Table 01. presents the frequency and percentages of researches on WhatsApp use for educational purpose between the years of 2013-2017. The findings revealed that the year 2016 has the highest number (40%) of the studies conducted in the specified area, followed by 2014 and 2015 years with 10% and 9% researches respectively. Moreover, it could be noted that there is remarkable increase of the publication in 2016. This indicates the trend of publication on the utilization of WhatsApp in education increases.

Table 01. The Distribution of the Number of Studies by Years between 2013 and 2017

Years	Frequencies	Percentage
2013	5	10%
2014	10	20%
2015	9	18%
2016	20	40%
2017	6	12%
Total	50	100%

6.2. Distribution of WhatsApp Researches according to different subjects of study

While examining the studies, it was taking into consideration in what area of education the studies focused on. Majority of the researches were conducted on the use of WhatsApp for teaching and learning; such as teaching English and Arabic languages with 26% and 6% of researches respectively. Other studies accounting for 36% of the studies focused on the adoption or use of WhatsApp for educational purposes among teachers and students at different level of education. The detail is presented in the following table.

Table 02. The Distribution of Studies Examined Based on Subjects

Subject	Frequencies	Percentage
English	13	26%
WhatsApp usage for educational purpose	18	36%
Science	3	6%
Educational science	1	2%
Physiology	1	2%
Computer science	3	6%
Educational technology	1	2%
Arabic language	6	12%
Geography	1	2%
Chinese language	1	2%
Total	50	100%

6.3. Research Methods Used in the Reviewed Studies

With regard to the research methods employed in the reviewed studies on the use of WhatsApp in education between the years of 2013 – 2017 it is revealed that quantitative research method is the most employed method accounting for 54%, followed by qualitative method with 24%. While mixed method is the least with only 22%.

Table 03. The Research Methods Employed on the Reviewed Studies

Research Method	Frequencies	Percentage
Quantitative	27	54%
Qualitative	12	24%
Mixed	11	22%
Total	50	100%

6.4. Research design

The findings show that for the Quantitative Research; experimental and quasi experimental research designs are widely used in the studies accounting for 16% and 10% respectively. For the non -experimental quantitative research design; descriptive and comparison research design are the most common used design with 10% and 8% respectively. With regard to qualitative research, findings revealed the researchers have more tendencies towards case study research design 16%. Finally, in the mixed method, explanatory researches (16%) are more common than exploratory (6%).

Table 04. The Research Designs of the Examined Studies

Research Design		Frequencies	Percentage
Quantitative	Experimental	Fully experimental	8 16%
		Quasi experimental	5 10%
Quantitative	Non experimental	Descriptive	5 10%
		Correlation	3 6%
		Comparison	4 8%
		EFA	2 4%
		Qualitative	Literature
Mixed Method		Case study research	8 16%
		Exploratory	3 6%
		Explanatory	8 16%
Total		50	100%

6.5. Distribution of Data Collection Instrument

The information about the instruments used for data collection in the examined articles is given in table 5. It is observed that more than one instrument (for example interview and questionnaire) is used for data collection in some articles. Therefore, each instrument is coded and frequencies are specified accordingly. Thus, the frequencies in table 5 are more than the frequencies in the previous tables. The results show that questionnaire inform of likert scale is the most used instrument for data collection with about 45.5%, followed by test scores accounting for 20%. However, open ended form of questionnaire, participant observation, document analysis and assignment scores are less used instruments (4% each) for data collection in the examined articles.

Table 05. The Distribution of Data Collection Instruments

Data collection Instrument		Frequencies	Percentage
Questionnaire	Likert Type	34	45.33%
	Open ended	3	4%
Interview	Structured	0	
	Semi-structured	14	18.7%
Observation	Participant	3	4%
	Non participant	0	
Document analysis		3	4%
Test score		15	20%
Assignment score		3	4%
Total		75	100%

Table 6 presents the numbers of data collection instrument used in the examined studies. It is revealed that most of the studies used one instrument for data collection accounting for 62%. Similarly, 38% of the studies used two instruments for data collection. Among the examined articles, no research was found to have more than two instruments for data collection.

Table 06. Distribution of the Numbers of Data Collection Instrument Used

No. of Data Collection Method	Frequencies	Percentage
Three instruments and above	0	0%
Two instruments	19	38%
One instrument	31	62%
Total	50	100%

6.6. The Distribution of the Sampling Types Used and Percentages in the Studies

Based on the articles examined within the context of this study, it is shown that undergraduate students (52%) are widely selected and used as samples of the studies, followed by colleges and polytechnic students and secondary schools students with 16% of each category. On the other hand, teachers (4%), post

graduate students (4%), student in pre-university degree programs are less used as participants in the studies.

Table 07. Distribution of the Sampling Types Used and their Usage Percentages in Articles

Sampling Type	Category	Frequencies	Percentage
Instructors	Lecturers	0	
	Teachers	2	4%
Students	Post graduate	2	4%
	Under graduate	26	52%
	Pre-university students	4	8%
	Colleges & Polytechnic	8	16%
	Secondary students	8	16%
	Primary school	0	0%
Total		50	100%

In addition to that, table 8 indicates categories of sample size of the participants in the studies ranging from 0-100 to more than 400. It is observed that 44% of the studies have not more than 100 sample size, while 20% has between 101 and 200 sample size. However, few of the examined studies have large sample size like above 400 participants.

Table 08. Distribution of the Sampling Size of the Examined Studies

Sample size	Frequency	Percentage
1-100	22	44%
101-200	10	20%
201- 400	7	14%
More than 400	6	12%
Un identified size	5	10%
Total	50	100%

6.7. The Distribution of Data Analysis Method and Techniques

The findings demonstrate that descriptive statistics in forms of mean and standard deviation (26%) are the most used descriptive data analysis technique of the quantitative research method. Similarly, t-test and ANOVA/ANCOVA from the predictive technique of quantitative data analysis are mostly used with 15.2% and 8.7% of the examined articles of this study.

Table 09. The Distribution of Data Analysis Method and Techniques

Data Analysis Method and Techniques		Frequency	Percentage	
	Descriptive	Frequency & percentage	7	15.2%
		Mean / standard deviation	12	26%
Quantitative	Predictive	t-test	7	15.2%
		ANOVA/ANCOVA	4	8.7%
		Correlation	2	4.3%
		Factor Analysis	2	4.3%
		Regression	1	2.1%
		Qualitative	Verbal Analysis Method	1
	Content Analysis	1	2.1%	
	Semantic Analysis	9	19.6%	
Total		46	100%	

6.8. Number of Author(s) in the Researches

The findings indicating the number of authors that published a particular research in the specified area of this study between the years of 2013 and 2017 is presented in table 10. The total number of authors is 75 in the articles examined. In addition to that the total number of articles with one author is 20 which is equal to 40% where as the total number of articles with 4 authors is only 3 which is equal to 6%.

Table 10. The Distribution of Articles According to Number of the Author (s)

Number of Authors	Frequency	Percentage
One Author	20	40%
Two authors	18	36%
Three authors	9	18%
Four authors	3	6%
Total	50	100%

7. Conclusion

The present study aims to identify the tendencies of researches conducted in the recent years between the years of 2013 and 2017 on WhatsApp use in education. This is to give a clear guide for the researchers on the research trends on the use of WhatsApp in education. Since the researches in the specified area were selected based on the publication year; it quite pertinent to mention that there is remarkable increase in the number of publication in 2016. This indicates that research trends in the use WhatsApp for educational purposes like teaching and learning is sharply increasing. Further findings show that WhatsApp is used to facilitate students learning, especially learning languages like English, Arabic and Chinese which are among major communicating languages in the world nowadays.

It is apparently clear in this study that; quantitative research method is intensively used by many researchers. This designates that qualitative research method and mixed method (quantitative and qualitative) are not widely used in the contemporary studies, though the latter method (mixed method research) was developed to compliment the limitations of both quantitative and qualitative research method (Creswell, 2012). This expresses the need for more researches (on WhatsApp use in education) by employing mixed method research design. This will be helpful for getting more reliable and valid results.

Based on the articles examined, true experimental and quasi-experimental quantitative research designs are most employed research design in the studies. This might be due to the fact that using WhatsApp for teaching and learning purpose is relatively new. Thus, the designs are mostly employed by educators and researchers to explore the effect of WhatsApp on enhancing students' learning such motivation, achievement, engagement and so forth. The findings also show that, questionnaire and test scores are the most frequents instruments used for data collection in the context of this study. This is due to the reason that questionnaire is the easiest form of data collection use for large sample size on one hand, and many studies conducted within the context of this study explore the use of WhatsApp by students and teachers using questionnaire on the other hand which is descriptive in nature. Additionally, with regard to the number of instruments that are employed for data collection in the reviewed researches. It is found that studies with one instrument of data collection (58%) are more in number. This might be related to with the high number of quantitative studies. Thus, it is suggested to use more than one instrument in the researches related to use of WhatsApp in education for more reliable and valid results.

It is also found from the articles examined, students in the higher learning institutes especially undergraduate students, and diploma students are the most preferred sample groups in the studies. It might be expected that, the reason why those groups are chosen more than the others like secondary and primary schools students is the fact that; students in the higher learning institutes have more affordability to buy Smart phones and have higher probability of getting access to internet. Thus, it is recommended to conduct more researches on the use of WhatsApp in education targeting secondary and primary schools students as the sample group, because such group of students also get access to WhatsApp. It is also recommended to explore teachers' and lecturers' use of WhatsApp in education.

The analysis of the articles based on the number of author (s) revealed that more than two third of the researches were conducted by one or two authors. This indicates that many studies related to the specified area were not collaboratively done. This might decrease the reliability and validity of the findings.

Acknowledgments

I really appreciate the guidance I received from my Supervisor Associate Prof. Dr. Sharifah Sariah Bt Sayyed Hassan

References

- Arslan, S., Savaser, S., Hallett, V., & Balci, S. (2012). cyberbullying among primary school students in Turkey: self-reported prevalence and associations with home and school life. *Cyberpsychology Behaviour and Social Networking*, 10(15), 527–533.
- Aydin, B., & Demirel, D. (2016). Flipping the drawbacks of flipped classroom: effective tools and recommendations. *Journal of Educational and Instructional Studies in the World*.
- Bansal, T., & Joshi, D. (2014). A Study of Students' Experiences of Mobile Learning. *Global Journal of HUMAN-SOCIAL SCIENCE: H Interdisciplinary*, 14(4).
- Bozkurt, A., Akgun-ozbek, E., Yilmazel, S., Erdogdu, E., Ucar, H., Guler, E., & Sezgin, S. (2015). Trends in Distance Education Research : A Content Analysis of Journals 2009-2013, 16(1), 330–363.
- Creswell, J. . (2012). *educational reserach planing, conducting and evaluating quantitative and qualitative reserach*.
- Etim, P. J., Udosen, I. N., & Ema, I. B. (2012). Utilization of Whatsapp and Students ' Performance In Geography In Uyo Educational Zone , Akwa Ibom State, 3(5), 3–6.
- Goodman, R. Y. (2014). Our Children ' s WhatsApp Culture – An Educational Look. *Institute for Contemporary Chinuch*, (14), 14–16.
- Ibrahim, A.A., Idris, R. G., & Hafiz, H. (2015). Psychometric Properties of WhatsApp Use and. *Journal of Creative Writing*, 1(4), 57–64.
- Ibrahim, A. A., Idris, R. G., & Ha, A. (2017). Psychometric Properties of Social Media and Academic Influence Scale (SMAIS) Using Exploratory Factor Analysis, 7(1). <http://doi.org/10.18178/ijiet.2017.7.1.834>
- Mata, Liliana, G. L. & L. L. (2016). effects of study levels on students' attitudes towards interactive whiteboards in higher education. *Computers in Human Behaviour*, (54), 278–289.
- Mavi, D., & Uzunboylu, H. (2014). Content Analysis Of Articles About Computer Teaching Methods : A Content Analysis Study. *Procedia - Social and Behavioral Sciences*, 143, 1171–1176. <http://doi.org/10.1016/j.sbspro.2014.07.573>
- Munkaila, A. (2015). THE IMPACT OF SOCIAL NETWORK SITES ON THE ACADEMIC PERFORMANCE OF STUDENTS IN. *International Journal of Economics, Commerce and Management*, III(11), 1021–1035.
- Newaz, N., & Karim, A. M. (2016). Motivation Factors for using Social Network Applications : A Case Study Analysis among Undergraduate Private Universities Students of Chittagong , Bangladesh.

Australasian Journal of Business, Social Science and Information Technology (AJBSSIT) Volume, 2(4), 236–243.

- Ozyurt, O. & O. H. (2012). Learning style based individualized adaptive e-learning environments: content analysis of the articles published from 2005 to 2014. *Computers in Human Behaviour, 10(15)*, 527–533.
- Prasad, D. (1994). Content Analysis. In *Research methods for Social Work* (pp. 1–20).
- Sam. (2016). A sian R esearch C onsortium Learning beyond the Classroom through WhatsApp : An Informal Channel to Motivate Learners to stay Connected. *Asian Journal of Research in Social Sciences and Humanities, 6(9)*, 1826–1827. <http://doi.org/10.1016/j.compedu.2008.12.020>
- Shannon, S. E. (2005). Three Approaches to Qualitative Content Analysis. *QUALITATIVE HEALTH RESEARCH, 15(9)*, 1277–1288. <http://doi.org/10.1177/1049732305276687>
- Vita, M. De, Verschaffel, L., & Elen, J. (2014). Interactive Whiteboards in Mathematics Teaching : A Literature Review, *2014(i)*.
- Yin. (2016). *Adoption Of Whatsapp Instant Messaging Among Students In Ipoh Higher Education Institutions*. Wawasan Open University Penang, Malaysia.
- Zainuddin, Z., & Halili, S. H. (2016). Flipped classroom research and trends from different fields of study. *The International Review of Research in Open and Distributed Learning, 3(13)*.