Journal of Education and Practice
ISSN 2222-1735 (Paper) ISSN 2222-288X (Online)
Vol.8, No.2, 2017

The Effect of Social Media Usage on Course Achievement and Behavior

Yazan M. Alghazo [1*] Julie A. Nash [2]
Humanities and Social Sciences, Prince Mohammad Bin Fahd University, PO box 6466, KSA

Abstract
This study investigated the effects of social media usage as a classroom management tool on students' achievement and their behavior in class. Groups were determined by choosing random samples of different classes. The treatment group included the social media application "whatsapp" which all students and the instructor were asked to join that enabled constant communication and announcements related to class. The control group consisted of the same number of classes taught by the same instructors without using the social media application of "whatsapp." The control group received communication from the instructor through traditional use of blackboard and email communication. Results of the study showed no statistically significant differences between the treatment and the control groups with regards to course achievement, however, the results did indicate that students in the treatment groups had notably less class absences and missed assignments, which indicated better class behavior. Further, findings related to gender differences and class type are discussed as well as implications of the findings on future research and current classroom management processes.
Keywords: Classroom management, Social media in education, classroom behavior, whatsapp.

1. Introduction

Internet usage within educational settings is increasing around the world across different educational levels. Technology integration varies from simple usage of email communications between the students and the instructor to providing full courses in an online environment utilizing various forms of software.

As a result of the rapid increase in social media popularity, researchers are becoming increasingly interested in investigating the different possibilities of using social media applications as a learning tool (Bouhnik & Deshen, 2014; Calvo, Arbiol & Iglesias, 2014; Susilo, 2014; Trenkov, 2014). Several uses of social media in higher education have been researched and discussed in the literature. For example, the use of social media in educational settings as a tool for fostering personal learning environments (PLEs) has been widely researched (Dabbagh and Kitsantas, 2011). Smith and Caruso (2010) discussed data that reveals college students use social media both formally and informally to support their academic experiences. Moreover, the use of blogging platforms such as "*wordpress*" are highly encouraged and used as an authentic assessment tool of higher education (Rosen & Nelson, 2008; Salaway & Caruso, 2008).

This study focuses on the use of a specific social media application "WhatsApp" for the purpose of classroom management in an effort to decrease negative behavior, such as absence and late assignment submission, consequently, increasing student achievement.

The current study attempts to answer the following questions:

1. Does the use of a social media applications in college classes affect student achievement?
2. Does the use of social media applications in college classes affect student behavior?

2. Literature Review

2.1 Theoretical Framework

Researchers have utilized the Framework for the Rationale Analysis of Mobile Learning (FRAME) model (Koole, 2009) to study the use of social media applications in educational settings (Rambe & Bere, 2013; Susilo, 2015). According to Rambe and Bere (2013), the FRAME model allows researchers to "grasp learning that emerges from the convergence of mobile technologies, learning capacities and social interaction" (p. 548).

Koole (2009) stated that "The FRAME model describes a mode of learning in which learners may move within different physical *and* virtual locations and thereby participate and interact with other people, information, or systems – anywhere" (p. 26). Furthermore, the model not only addresses the technical aspects of mobile learning, but also the social and personal and aspects of learning.

More specifically, the FRAME model describes the intersection of three aspects of mobile learning: "Device (D), Learner (L), and Social (S) aspects are the "ideal learning situation" (p. 27). Device aspect refers to the technical properties of the mobile device and the capabilities it provides, while the learner aspect reflects a person's motivation, emotions, cognitive abilities, memory, and prior knowledge. Finally, the social aspect refers to the "processes of social interaction and cooperation" (Koole, 2009, p. 31) by individuals. It is also important to clarify the distinction between E-learning and M-learning, where M-learning usually refers exclusively to the use of mobile devices and applications in the learning process (O'Malley, et al., 2005).

2.2 Social media use in Education

Communication between teachers and students has been moving towards the digital realm for the past decade (Bouhnik & Deshen, 2014), and with this increase of digital communication came an increase in research studies that investigate the possible benefits of utilizing digital communication channels, with different characteristics, between teachers and students in educational settings (Calvo, Arbiol & Iglesias, 2014).

Hrastinski, Edman, Andersson, Kawnine, & Soames (2014) conducted a study to investigate how high school students benefited from inclusion of Instant Messaging (IM) as a tool for communication with their teachers. Their findings revealed improvements in achievement because students were able to utilize their time after school with questions to their teachers and were able to receive feedback during their learning process after school.

"WhatsApp" is one of the most popular mobile applications used for exchanging messages in the form of text, audio files, video files, and web-links between individuals and within groups (Bouhnik & Deshen, 2014). While one of the biggest challenges that such applications face is that they are viewed as disruptive to classrooms and a source of distraction to students (Kumar et al., 2016; Tindell and Bohlander, 2012), several researchers have recently investigated the effectiveness of utilizing "WhatsApp" in educational settings (Bansal & Joshi, 2014). For example, Rambe and Bere (2013) conducted a study on "WhatsApp" usage with IT students in an African university (N=95) and found that students reported that the integration of "WhatsApp" in the classroom was useful, and made interaction with the instructor easier while also causing the classroom environment to become more engaging (Rambe & Bere, 2013).

Similarly, Plana et al. (2015) conducted a study on the effect of using "WhatsApp" with a group of students studying foreign language courses in Spain, and concluded that students were more enthusiastic and motivated to engage in classes when "WhatsApp" was used. Which further emphasizes the positive effect of the social media application on student motivation and engagement in classrooms (Amry, 2014; Bere, 2012; Chipunza, 2013). Moreover, in a qualitative study that investigated the effect of integrating "WhatsApp" into Arabic university courses, three types of interactions were identified as improving when "WhatsApp" was integrated into the course (Abdelrezeq & Ishtaiwa, 2013). The types of interactions consisted of student to student, student to content and student to instructor.

3. Methods

3.1 Participants

Male and female college students in 16 undergraduate core courses from a private university in the Eastern Province of the Kingdom of Saudi Arabia were separated into two groups for data collection; courses that included social media integration and courses that didn't. Students were separated by gender. Ten male courses and six female courses were utilized. Each course on the male campus had a limit of 30 students per class, while classes on the female campus had an initial limit of 25. The sample population consisted of 212 male undergraduate students and 110 female undergraduate students.

3.2 Research Design

Two groups were utilized. Group one (G1) consisted of eight university core courses that were conducted using the social media application, "Whatsapp", as an additional means of communication between the instructor and the students enrolled in the class. Group two (G2) consisted of eight university core courses that were conducted using traditional methods of communication i.e., blackboard, email and face to face.

Two instructors were used. One instructor was exclusively an assistant professor for male students in the core department on the male campus. One instructor was exclusively an assistant professor for female students in the core department on the female campus. Each instructor was given pairs of courses to teach, e.g. two writing and research courses, two assessment courses, etc. Each instructor divided their courses into groups equally between the pairs, e.g. one writing and research course was in G1 and one writing and research course was in G2. Therefore the male instructor had five classes in G1 and five classes in G2. The female instructor had three classes in G1 and three classes in G2 (see Table 1).

Table 1
Course Distribution by Course Type

Instructor	**G1 Course Name**	**G1 # Students**	**G2 Course Name**	**G2 # Students**
Male	Writing and Research-103	20	Writing and Research-101	21
Male	Assessment II- 101	23	Assessment II- 102	18
Male	Assessment II- 106	27	Assessment II- 104	20
Male	Assessment II- 107	27	Assessment II- 103	11
Male	Assessment I- 102	24	Assessment I- 103	21
Female	Writing and Research	15	Writing and Research	20
Female	Leadership and Teamwork	27	Leadership and Teamwork	17
Female	General Psychology	11	General Psychology	20
Total	**8 Courses**	**174**	**8 Courses**	**148**

Instructors conducted all courses in a similar manner such that all course materials were provided through blackboard. Email was available to all students, as well as face to face office hours, office telephone and face to face interaction three hours per week in class. All courses were taught exactly the same. The only difference between the groups was that in G1 a group "WhatsApp" account was established for those classes. In G1 the instructors sent all course announcements through the group "WhatsApp" account. The rest of the correspondence was determined by the students. If the students initiated a "WhatsApp" message the instructor was able to respond through the "WhatsApp" venue. In G2, the instructors didn't establish a group account on "WhatsApp". All course announcements were through blackboard only.

Announcements were made according to the following schedules for each instructor in each class. One reminder was sent the day before each assignment was due for both groups. One reminder was sent one week prior to every test for both groups.

3.3 Data Analysis

Data analysis consisted of both descriptive and inferential statistics. Descriptive analysis was conducted on the variables of gender and course type and student behavior. Inferential statistics were conducted to determine differences between groups in course success. Course success was measured by the final grade in the course. Student behavior was measured by number of absences and missed assignments (see Table 2).

Gender and Class type were also examined to make sure there were no confounding variables.

Table 2
Measures of Analysis

G1	**Success** *Final Grade*	**Behavior** *Absences*	**Behavior** *Missed Assignments*
G2	**Success** *Final Grade*	**Behavior** *Absences*	**Behavior** *Missed Assignments*

3.2.2 Guiding Hypotheses

The following hypotheses were used to guide the research.

Hypothesis 1. Students in G1 will have a significantly higher average final course grade than students in G2.

Hypothesis 2. Students in G1 will have significantly less absences than students in G2.

Hypothesis 3. Students in G1 will have significantly less missed assignments than in G2.

3.2.3 Ethics

Students were asked to sign consent forms informing them that their class performance would be used for publication. Participants were informed that no personal information would be used in connection with reported results. Students were given the option to not participate in the "WhatsApp" group. All students agreed to participate. All data was saved on a password protected computer.

4. Results

4.1 Research Question 1

"Does the use of a social media applications in college classes affect student achievement?"

To find out whether there were statistical significant differences between the control group (G2) and the treatment group (G1) with regard to students' achievement, t-test analysis was conducted and the results are shown (see Table 3).

Table 3
T-test Results between G1 and G2 with Regard to Students Achievement

GROUP	N	Mean	Std. Deviation	t	df	Sig. (2-tailed)
G1	174	74.88	13.600	.970	320	.333
G2	148	76.26	11.457			

We hypothesized that Students in G1 would have a significantly higher average final course grade . Our hypothesis was not supported. There were no statistically significant differences due to the group variable, $t(2,320) = .970$, p=.333.

4.2 Research Question 2

"Does the use of social media applications in college classes affect student behavior?"

We hypothesized that Students in G1 would have significantly less absences than students in G2. We also hypothesized that Students in G1 will have significantly less missed assignments than in G2. To determine if our hypothesis was correct averages were calculated for the number of absences and missed assignments for each of the classes in both the control groups (G2) and the treatment groups (G1). (see Tables 4 and 5)

Table 4 shows the average for number of absences for all students in each class according to group type, gender, and class type. Table 5 shows the average for number of missed assignment for all students in each class according to group type. We also considered the data by gender, and class type (see Tables 6 and 7).

Table 4.
Average Numbers of Absences for all Students in G1 and G2.

Class type	Gender	G1	Average	N	G2	Average	N
W&R	f	67	4.47	15	68	3.40	20
Gen Psych	f	70	6.36	11	79	3.95	20
Leadership	f	69	2.56	27	71	4.18	17
W&R	m	23	1.15	20	25	1.19	21
ASSE1	m	42	1.75	24	63	3.00	21
ASSE2	m	62	0.81	77	60	1.22	49
Total Group/Averages		**55.50**	**2.85**		**61.00**	**2.82**	

Table 5.
Average Number of Missed Assignments for all Students in G1 and G2.

Class Type	Gender	G1	Average (G1)	N (G1)	G2	Average (G2)	N (G2)
W&R	f	6	0.40	15	8	0.40	20
Gen Psych	f	9	0.82	11	20	1.00	20
Leadership	f	3	0.11	27	6	0.35	17
W&R	m	7	0.35	20	11	0.52	21
ASSE1	m	10	0.42	24	13	0.62	21
ASSE2	m	17	0.22	77	21	0.43	49
Total Group/Averages		**8.67**	**0.39**		**13.17**	**0.55**	

Table 6.
T-test of Students' Achievement Based on Gender

GENDER	N	Mean	Std. Deviation	t	df	Sig. (2-tailed)
Female	53	78.23	15.325	2.168	172	.032
Male	121	73.42	12.561			

Table 6 shows there are statistically significant differences at (α= 0.05) due to gender in favor of females.

Table 7
Mean and Standard Deviation of Students' Achievement in G2 due to Class Type

Class type	N	Mean	Std. Deviation
Writing and Research	35	72.17	14.877
Gen Psych	11	64.73	17.844
Leadership	27	84.93	7.651
Assessment 1	24	67.55	17.736
Assessment 2	77	76.34	9.573
Total	174	74.88	13.600

Table 7 shows a variance in the means of students' achievement according to class type, to find out whether there are statistical significant differences in these means, a one way ANOVA was conducted (see Table 8).Table 8

One way ANOVA Results of Students' Achievement according to Class Type

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	5568.544	4	1392.136	8.902	.000
Within Groups	26430.209	169	156.392		
Total	31998.753	173			

Table 8 shows there was a significant effect of class type on students' achievement at the $p<.05$ level [$F(4, 169)= 8.902$, $p= .000$). Furthermore post hoc analysis was conducted using Scheffe's mulitiple comparisons test. The pairwise multiple comparisons indicate that the mean score for the class type "leadership" was significantly different from the mean scores for both class types "writing and research", "General Psychology" and "Assessment 1" (see Table 9). .

Table 9

Scheffe's Post Hoc Multiple Comparisons Tests

class type	Mean	Writing and Research	Gen Psych	Leadership	Assessment 1	Assessment 2
Writing and Research	72.17					
Gen Psych	64.73	7.44				
Leadership	84.93	12.76*	20.20*			
Assessment 1	67.55	4.62	2.82	17.38*		
Assessment 2	76.34	4.17	11.61	8.59	8.79	

* The mean difference is significant at the .05 level.

5. Discussion and Conclusion

The purpose of this study was to evaluate the effectiveness of including a social media messaging application (whatsapp) into college level courses as a supplementary means of communication between teachers and students. The focus of this particular study was to investigate how including whatsapp would influence students' achievement in classes as well as their behavior in class specifically in regard to absences and missed assignments.

The results of the study indicate that there is no significant beneficial affect on academic performance by incorporating social media as a form of communication between students and teachers. There were no statistical differences between groups. As discussed in the literature review, social media as a form of course communication has been found to be academically beneficial (Hrastinski et al., 2014). A possible explanation for this finding is that the design of this study did not allow for actual instruction or learning materials to be disseminated or shared through the whatsapp group; therefore, the only difference between treatment groups and control groups was the convenience of accessibility to the instructor and the other students, not the course learning materials or processes. Moreover, the students who had access to the whatsapp group communication with the instructor did not utilize the group for any discussion regarding learning processes outside the classroom, such as homework assistance or requesting clarification on learning materials, instead, the students mainly utilized the group for questions relating to time of classes and due dates of assignments. While other studies conducted in similar contexts have concluded that utilizing whatsapp groups significantly increases students' achievement (Amry, 2014), it should be noted that the nature of whatsapp utilization was different; course learning materials and content explanations were offered to the students, which provided additional learning opportunities to those students.

In relation to the second research question of the study, the findings suggest that students in the treatment groups demonstrated behavior more conducive to class success than students in the control groups. More specifically, students in the treatment groups had lower numbers of absences and lower numbers of missed assignments. This finding is not unexpected since all students in the treatment groups had more convenient direct access to the instructor using their mobile devices. Also, reminders about class assignments due dates were sent out through the whatsapp groups, which means students would receive the reminders automatically on their cell phones, rather than having to log into blackboard or their emails to check for announcements. Trenkov (2014) found similar conclusions with regard to managing the classroom using digital medial; in his study, he found that students involved in open digital communication with the instructor had more motivation to be involved in classroom discussions, which also led to more trust between the students and the instructor.

An analysis of descriptive statistics revealed that gender and the type of class students were taking presented a significant interaction. Females outperformed males when measuring overall class final scores.

However it may be that females simply perform better academically in general. We did not look at the differences between males and females within groups. Therefore we cannot draw conclusions on whether using the social media platform of whatsap may improve one gender more than another.

We did look at class type between and within groups and found that class type did matter in some cases. Students appeared to benefit academically more from the treatment in the leadership course than three of the other courses. It may be that students enrolled in leadership courses are more likely to utilize leadership qualities therefore they naturally utilized the convenience of the social media platform more than the other students in the other courses.

However it could also be true that the other courses were more difficult than the leadership course, therefore the difficulty level masked any positive effect of using the social media app.

In conclusion, while this study did not show any positive effects of using social media on students' achievement in class, the findings did show that students who had access to whatsapp groups in the class demonstrated behavior more conducive to class success than those who could only communicate with the instructor and other students using blackboard and email. This suggests that whatsapp can be considered a useful tool for classroom management purposes, leading to lower numbers of absences and missed assignments.

Future research studies should place more emphasis on providing students supplementary instruction through the whatsapp groups, rather than focusing solely on announcing deadlines and answering questions related to general assignment guidelines and due dates. In addition future research should consider the role of gender within each group. Furthermore the results of this study suggest that class type may be a confounding variable and the study should be repeated gathering data from courses of the same class type only to magnify the effect of the social app while holding class type constant.

References

Aburezeq, I. M., & Ishtaiwa, F. F. (2013). The impact of Whatsapp on interaction in an Arabic language teaching course. *International Journal of Arts & Sciences*, *6*(3), 165.

Amry, A. B. (2014). The impact of WhatsApp mobile social learning on the achievement and attitudes of female students compared with face to face learning in the classroom. *European Scientific Journal*, *10*(22).

Bansal, D., & Dhananjay Joshi, T. (2014). A Study of Students Experiences of WhatsApp Mobile Learning. *Global Journal of Human-Social Science Research*, *14*(4).

Bere, A. (2012, September). A comparative study of student experiences of ubiquitous learning via mobile devices and learner management systems at a South African university. In *2012 Conference*.

Bouhnik, D., & Deshen, M. (2014). WhatsApp goes to school: Mobile instant messaging between teachers and students. *Journal of Information Technology Education: Research*, *13*, 217-231.

Calvo, R., Arbiol, A., & Iglesias, A. (2014). Are all Chats suitable for learning purposes? A study of the required characteristics. *Procedia Computer Science*, *27*, 251-260.

Chipunza, P. R. C. (2013). Using mobile devices to leverage student access to collaboratively-generated resources: A case of WhatsApp instant messaging at a South African University. In *International Conference on Advanced Information and Communication Technology for Education ICAICTE*.

Dabbagh, N., & Kitsantas, A. (2012). Personal Learning Environments, social media, and self-regulated learning: A natural formula for connecting formal and informal learning. *The Internet and higher education*, *15*(1), 3-8.

Hrastinski, S., Edman, A., Andersson, F., Kawnine, T., & Soames, C. A. (2014). Informal math coaching by instant messaging: Two case studies of how university students coach K-12 students. *Interactive Learning Environments*, *22*(1), 84-96.

Koole, M. (2009). A model for framing mobile learning. In M. Ally (Ed.), *Mobile learning: transforming the delivery of education and training* (pp. 25–47). Athabasca, AB: AU Press, Athabasca University.

Kumar, V. S., Lian, T. Y., & Vasudevan, H. (2016) UNiKL RCMP Undergraduates Perception on Using WhatsApp as a Tool for Mandarin Language Teaching and Learning.

O'Malley, Vavoula, G., Glew, J. P., Taylor, J., Sharples, M., Lefrere, P., Lonsdale, P., et al.

(2005). *Guidelines for learning/teaching/tutoring in a mobile environment*. *MOBIlearn* (pp. 1–57).

Plana, M. G. C., Gimeno, A., Appel, C., & Hopkins, J. (2015). Improving learners' reading skills through instant short messages: A sample study using WhatsApp. *WorldCALL: Sustainability and Computer-Assisted Language Learning*, 266.

Rambe, P., & Bere, A. (2013). Using mobile instant messaging to leverage learner participation and transform pedagogy at a South African University of Technology. *British Journal of Educational Technology*, *44*(4), 544-561.

Rosen, D., & Nelson, C. (2008). Web 2.0: A new generation of learners and education. *Computers in the Schools*, *25*(3-4), 211-225.

Salaway, G., & Caruso, J. (2008). The ecar study of undergraduate students and information technology, 2007-

key findings.

Smith, S. D., & Caruso, J. B. (2010). *The ECAR study of undergraduate students and information technology, 2010* (p. 118). Colorado: Educause.

Susilo, A. (2014, June). Exploring Facebook and Whatsapp as supporting social network applications for English learning in higher education. Conference on Professional Development in Education (PDE2014), Widyatama University Indonesia, Open University Indonesia and Open University Malaysia.

Susilo, A. (2015). Using Facebook and WhatsApp to leverage learner participation and transform pedagogy at the open university of Indonesia. *Jurnal Pendidikan Terbuka Dan Jarak Jauh*, *15*(2), 63-80.

Tindell, D. R., & Bohlander, R. W. (2012). The use and abuse of cell phones and text messaging in the classroom: A survey of college students. *College Teaching*, *60*(1), 1-9.

Trenkov, L. (2014). Managing teacher-student interaction via WhatsApp platform. *EDULEARN14 Proceedings*, 6596-6600.

Valckenaers, P., Van Brussel, H., Bongaerts, L. & Wyns, J. (1997), "Holonic Manufacturing Systems", *Integrated Computer Aided Engineering* **4**(3), 191-201.

Van Brussel, H., Wyns, J., Valckenaers, P., Bongaerts, L. & Peters, P. (1998), "Reference Architecture for Holonic Manufacturing Systems: PROSA", *Computers in Industry* **37**(3), 255-274.