Theory of Planned Behaviour and the Use of Cell/Mobile Phone in the Classroom

Lawali Ya'u[1]
yaulawali@gmail.com
[1]Department of Office Technology Management
Federal College of Education (Technical), Gusau-Nigeria

Bashir Idris[2]
edrisbashir@gmail.com
[2] Department of Computer Science Education,
Federal College of Education (Technical), Gusau-Nigeria

Abstract - Although there is no policy in the Nigerian education system that support the use of cell phone in the classroom, but the fact is that, the use of cell phone in classrooms not for academic purposes has been detrimental towards classroom management as well as student performances. This research paper investigates the factors that influence students in using cell phone in the classroom. The Theory of Planned Behaviour was adopted for the investigation. 200 questionnaires were distributed across students of Federal College of Education (Technical), Gusau-Nigeria, in order to explore the extent to which student's attitudes, subjective norms and behavioural control influence their behavioural intention towards using cell/mobile phone in the classroom. The responses were analysed using descriptive statistics. The result indicated that the entire three construct do not significantly influence student's behaviour.

I. INTRODUCTION

The current technological advancement coupled with daily innovations has instigated a called towards pedagogic adjustment as well as a systematic classroom management. This call is necessary as the current learners are meshed with these daily innovations. They consume these innovations in the same way they consume food and water. As a result they were referred to as "Digital Native" [1] "net-generation" [2] "gamer-generation" [3]. In the past few decades, the advocates of science discipline have been urged to improvised techniques that demonstrate student's active involvement in the class [4]. This demand instigated the use of different approaches such as discussion, debates and inquiry-based labs as well as other related approaches that stimulate interaction between students and learning contents. This requirement in the learning setting has posed many challenges that require input from researchers.

In those days, it was proved difficult for science students to scientifically access, interpret, and share relevant data about the subject of their study. But the advent of cell phone and other related electronic devices has quenched the rigor in student's effort to access and share relevant materials for classroom activities [5].Cell phones and other electronic devices provide a means for students to access data within the classroom [6]. The ubiquitous nature of cell phone and the advent of smart phones with efficient internet connectivity have improved the basic telephony function to that of general computing capabilities [7]. With these added functions, cell phone becomes one of the powerful devices that support mobile learning as well as sharing many educational applications with computers. Considering the level of usage of mobile phones, it is often regarded in this era of Web 2.0 as more efficient than the computers in terms of creating, sharing and distributing knowledge. Cell phones have a number of advantages that can influence student learning when efficiently harness within the learning setting, these includes preparation of short written assignments, answering quizzes, organizing surveys, using podcasts to the use of blogs, e-books, electronic dictionary, game-based leaning, as well as "paperless," opportunity for note- and test-taking, etc. most importantly, the ubiquitous capability of cell phone that support learning to take place anywhere and anytime. A research conducted by [8] reported a high rate of adoption of smart phones particularly with young adults: 66% of students aged 18-29 have been reported to own a smartphone. 14-23 age groups were found to be the second highest rate of smart phone adoption in United State at 70%. 92% of undergraduates and 88% of graduate students were found to be connected to the Internet via wireless cell phones [7]

Despite of the increasing advantages of cell phones or mobile phones for classroom activities, a number of researches indicated that they also become a source of distractions in the classroom. One major problem teachers and students have in the class is attention distraction; cell phone is recorded to be a major source of distraction during classroom activity. Students usually have their attention distracted as a result of using cell phone during the class activity. 87% of the respondents according to [9] believed that digital technologies created distracted generation with short attention span. Another problem that distracts learner's attention is "texting". Students send and receive text messages during class activities and even during exams. In Wilkes University, a survey was conducted by [10], 10% of students were found to send or received text messages during exams. Texting during class activity affects students' ability to self-regulate their attention to classroom learning [11]. [12] reported 27% drop from the scores of students participating in mock-examination, as a result of their engagement in texting during the lesson. Cell phone ringing is also a major distraction in the classroom. Ringing was reported to have been a serious distraction in the classroom [13].

This research is therefore investigating the behavioural perceptions of College students on the drastic effect of

IRJECE

using cell phone in the classroom. The study will adopt the theory of planned behaviours as it theoretical foundation. The study would therefore emphases on the effect of the three independent variables that may affect the behavioural intention towards the actual behaviour of the students (i.e Attitude, Subjective Norm and Perceived behavioural control).

II. PROBLEM STATEMENT

Classrooms are places where teaching and learning take place. For learning to occur, there is no doubt that, the learners attention must be attracted to the instructor/teacher. Distractions in the classrooms are usually avoided in order to achieve the learning objective. The use of cell phone by student in college's classrooms has been a source of concerns as; it distracts student's attention during class activities. Many Students remain busy sending or receiving calls without adversely attending to the on-going class, texting, or using social networks like Facebook, twitter, WhatsApp, etc. while in class, when other students listens to the lecture or attending the on-going class activity. Students who are kin to listen to the lesson were distracted with phone ringtones, messages alerts reminder alerts and other forms of sudden disturbances generated from cell phone usage.

III. THEORETICAL FRAMEWORK

The research employs the use of "Theory of Planned Behavior" (TPB). This theory was developed by [14]. The theory proposed a model in order to measure how human actions are guided. It predicts the occurrences of a particular behaviour, provided that the behaviour is intentional.

The theory contains three variables that are used to predict intention to perform a particular behaviour provided the behaviour is intentional. The intention stands as cursive agents of the behaviours. The TPB is hereby used to predict factors explaining variances on intention and behaviours of cell phone usage in the classroom. It was reported that between 25.6% and 34% of explained variance in behaviour in the previous researches was the applications of the TPB [15]. The present study is designed based on the principles of TPB to explore attitude, subjective norm, and perceived behavioural control, in relation to students' intention to use cell phone in the classroom. Whether or not the variables influence students behavioural intention in using cell phone in the classroom. Attitude toward the behaviour is a person's overall evaluation of the behaviour performed or to be performed. This behaviour can be determined based on two beliefs: 1) belief about the consequences of the behaviour (behavioural belief) and 2) positive or negative judgement of the behaviour (outcome evaluation) [16]. Subjective norms are a person's own estimate of the social pressure to perform or not perform the target behaviour. Subjective norms are a measure of two beliefs that interacts with each other; 1) beliefs about how other people, who may be in some way important to the person, would like them to behave (normative beliefs), and the positive or negative judgements about each belief (outcome evaluations).

Perceived behavioural control is the extent to which a person feels able to enact the behaviour. It has two control beliefs: how much a person has control over the behaviour, and how confident a person feels about being able to perform or not perform the behaviour. It is determined by control beliefs about the power of both situational and internal factors to inhibit or facilitate the performing of the behaviour [16].

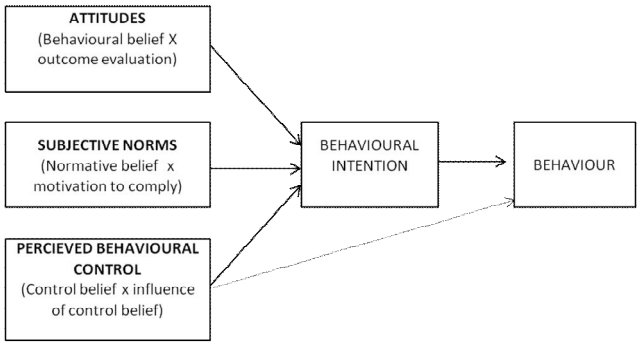


Figure 1: Theory of Planned Behavior (Ajzen, 1991)

IV. RESEARCH QUESTIONS

1. To what extent does student's attitude influence behavioral intention towards using cell phone in the classroom?
2. Do subjective norms influence behavioral intention towards using cell phone during class period?
3. Does student's behavioral control influence behavioral intention towards using mobile phones in the classroom?

V. RESEARCH METHODOLOGY

A. Subject and Procedure

The research was carried out on the student of Federal College of Education (Technical), Gusau, Zamfara State-Nigeria. 160 questionnaires were collected from a total population of 2000 students. The population comprises of students from various discipline across the colleges.

B. Instrumentation

Survey research is a quantitative procedures on which the research instrument is administered to a portion of the research population in order to obtain data that will be used to describe opinion, attitudes, characteristics or behaviour of that population[17]. Questionnaire was chosen to be the instrument for this research. The questionnaire used was adopted from the previous information systems literature. 5 point Likert scale format was used to design the questionnaire. This form of scaling was chosen as a result of the recommendation that, it is easier to understand by the respondents [18](O'Nei, 2007). It is indeed the commonest rating scale that allow respondent to quickly rate their opinion from lower perceptions to a higher perceptions [19].

VI. RESULTS

In presenting the result, the demographic data of the respondents was first analysed, the respondents were

PIECE

considered based on their distribution across various schools, class level, age and marital status since the study area is gender sensitive, hence it involve only females students.

Table 1: Distribution of respondents based on their demographic characteristics

Variables	Frequency	Percentage
Age		
15-20	43	26.9%
21-25	63	39.4%
26-30	41	25.0%
31 and above	13	7.9%
Marital Status		
Married	66	40.2%
Unmarried	94	57.3%
School		
School of Business Education	48	29.3%
School of Science Education	49	29.9%
School of Primary Education	23	14.0%
School of Technical Education	21	12.8%
School of Vocational Education	5	3.0%
School of Languages Education	14	8.5%
Class Level		
NCE III	35	21.3%
NCE II	67	40.9%
NCE I	26	15.9%
Pre-NCE	32	19.5%

The Table 1 above described statistically, the demographic data of the respondents using frequency count and percentage. It indicated that, the sampled responded were aged between 15-20 years (26.9%), 21-25 years (39.4%), 26-30 years (25.0%) and 30 years and above (7.9%). It also revealed that majority of the respondents are unmarried (57.3%) while (40.2%) are married. The questionnaire was distributed to various schools in the college based on the population of each school, school of business (29.3%), school of science (29.9%), primary education (14.0%), technical education (12.8%), vocational (3.0%) and school of languages education (8.5%). For the class level of the respondents, NCE III (21.3%), NCE II (409%), NCE I (15.9%) and finally Pre-NCE (19.5%).

VII. Research Question 1

To what extent does student's attitude influence behavioral intention towards using cell phone in the classroom?

The first research question was design to predict how the use of cell phone in the classroom is influenced by her attitude. Attitude as defined by [16] as person's overall evaluation of the behaviour. The attitude construct was measured by four items in the survey questionnaire in order to explore opinions on student's attitude in performing the behaviour (using cell phone in the classroom). The table below shows the frequency and percentage of the respondent's opinion.

Table 2: Frequency and Percentage of the respondents Attitude towards using cell phone in the classroom

S/N	Survey Items	Frequency of Agreed Responses	Percent of Agreed Responses	Frequency of Disagreed Responses	Percent of Disagreed Responses
1	The uses of cell phone in the class improve My understanding of the lesson	46	28.1	107	65.2
2	The use of cell phone in the class do not destruct my attention to an ongoing lesson	25	15.3	125	76.2
3	The uses of cell phone in the class increase my relationship with my peer students and lecturers.	42	25.6	104	63.4
4	The use of cell phone in the class by other students has no effect to me in any way	34	20.6	107	65.2
	N=160				

Research Question 2: ***Do subjective norms influence behavioral intention towards using mobile phone during class period?***

This research question predicts how student's actions are guided by the subjective norms. It explore whether the behaviour of the student in using cell phone during classes is subjected by some norms. The question is composed of four items in the research survey which asked students to accept or reject if their actions are guided by some subjective norms. Below are the questionnaire items that described some actions of the students that may likely be influenced. Frequency and percentage of each question is displayed.

IRJECE

Table 3: Frequency and Percentage of the respondent's Subjective Norms towards using cell phone in the classroom

S/N	Survey Items	Frequency of Agreed Responses	Percent of Agreed Responses	Frequency of Disagreed Responses	Percent of Disagreed Responses
1	I used mobile phone in the classroom because my parents like it.	15	9.1	134	81.7
2	I used mobile phone in the class to excite my course mates	18	10.9	119	72.6
3	I used mobile phone in the class so that I do not miss my contacts	30	24.4	99	60.4
4	I used mobile phone in the class to prove my talent.	34	20.6	107	65.2
	N=160				

VIII. Research Question 3

Does student's behavioral control influence behavioral intention towards using mobile phone in the classroom?

This research question finds out whether the actions or behaviour of the respondents in relation to using cell phone in the classroom can be control by the students. Perceived behavioural control is the extent to which a person feels able to enact the behaviour. This research question therefore is interested in finding out whether the respondents are able to control the perceived behaviour (i.e using cell phone during classroom activity). Meaning would they be able to use cell phone and at the same time listen and comprehend the lesson? The question has four items in the research survey that depict the respondent's behavioural control. The frequency and percentage of respondent's opinion are displayed in the table below.

Table 4: Frequency and Percentage of the Respondent's behavioral control towards using cell phone in the classroom

S/N	Survey Items	Frequency of Agreed Responses	Percent of Agreed Responses	Frequency of Disagreed Responses	Percent of Disagreed Responses
1	I can use mobile phone during lecture at the same time listen and understand the lesson.	41	25.0	109	66.5
2	I can use mobile phone during lesson without distracting the attention of others	33	20.2	118	72.0
2	I can send and received text message during lecture without being lost	34	20.7	110	67.4
4	I can browse with my phone to contribute to the lecture without drawing the class attention	51	31.1	94	57.3
	N=160				

IX. Discussion

Gaining student attention is a crucial factor in delivering instruction. It is the first significant element in recommended by Gagne for a worthy instruction to be administered[20]. The fullest professionalism as a teacher is being able to gain attention of learners for instruction delivery. Cell phone has been recorded as detrimental to classroom control and management. Cell phone which is termed as one of the most common device used by students, especially at tertiary level of learning, has become a source of concerned when considering the level of obstruction rendered by some students at the point of learning. This research investigated whether factors such as attitude, subjective norms and perceived behavioral control has significant effect on student behavioral intention towards using cell phone in the classroom. The researcher used theory of planned behavior to predict the student's behavioral intention in using cell phone in the classroom during class activities. To determine attitude towards using the cell phone (behavioral belief and outcome evaluation of the respondents), questions 1 through 4 was asked in the survey. The first question determines whether cell phone improve student understanding, 28.75 agree, while 66.88% disagree. The second question determined whether the use of cell phone by students do not disrupt student's attention on the on-going lesion, 16.63% of the respondents agree not to have been disrupted while 78.13% disagree with the opinion. The third question determines whether cell phone improves students and teacher relationship in the class, 25.6 % agreed that the use of cell phone improve their relationship while 63.4% disagree with the opinion. The fourth item determines whether the use of cell phone by other peers affect others in the classroom, 24.4% of the respondents agree while 63.4% disagree. This indicated that it is not student's belief in the benefit or consequences that they derive that influence their use of cell phone in the classroom

IRJECE

To determine the subjective norms four item were presented in the research survey. The first item asked whether the students used the cell phone in the classroom because of the optimum desire received from their parents 81.7% of the respondents disagree while only 9.1% agreed to have been a desire from their parents. When asked whether student use cell phone in the classroom to excite their class mates, only 10.9% agreed while 72.6% disagreed. The third item that determine subjective norm asked whether the students use the cell only to maintain their contacts, 24.4% agreed while 72.6% disagreed. When asked whether the students used cell phone in the classroom to prove their talent, 20.7% agreed while 65.2% disagreed. This therefore indicates that subjective norms have no influence in the student's behavioural intention towards using the cell phone in the classroom.

To determine behavioural control of the respondents, four items were presented in the survey questionnaire. The first item asked whether students can use the cell phone and at the same time listen to the lecture and understand, 25.0% agreed while 66.5% of the respondent's disagreed. Next item asked whether students can send and receive text messages during classes without distracting the attention of others, 20.2% agreed while 72.0% of the responded disagreed. The third item asked whether students can send and receive text messages during classes without being lost, 20.7% agreed that they can send and received text without being lost while 67.0% disagreed. The fourth item asked whether students can use their mobile phone to browse to contribute to the lecture without drawing the attention of the class, 31.1% agreed while 57.3 disagreed with the statement. It is therefore indicated that the students do not have any behavioral control over the use of cell phone during the class period.

X. Conclusion

With the emergence of mobile system, most people believed that it would enhance academic performance and bring more convenience to students while studying; unfortunately, few studies deeply investigated it from a widespread viewpoint. Our concern is not only users' opinions on the behaviour but also factors that influence user behavioural intention in performing the behaviour. The TPB model was applied in consistent with the structures of prior research.

TPB provides a very good foundation for us to investigate user behavioural intention, and the major objective of this study was to predict student's behaviour in using cell phone in the classroom since the behaviour in intentional. After analysing, the attitudes, subjective norms and behavioural control of students in the classroom, the theory predict that student's behaviour in using cell phone in the classroom was not influence by each of the three construct (attitude, subjective norm and behavioural control). That is to say there is no significance influence on the three construct on students towards using cell phone in the classroom.

XI. References

[1] M. Prensky, "Fun, play and games: What makes games engaging. Digital game-based learning," pp. 1-31, 2001.

[2] D. Oblinger, & Oblinger, J. L., "Educating the net generation," *Educause, Washington, DC,* vol. 264, 2005.

[3] J. K. W. Beck, M., *Got game: How the gamer generation is reshaping business forever.*: Harvard Business Press, 2004.

[4] A. P. D. A. McNeal, C, *Student-active science: Models of innovation in college science teaching.* New York: Saunders College Publishing., 1996.

[5] J. Tessier, "Student impressions of academic cell phone use in the classroom.," *Journal of College Science Teaching* vol. 43, 2013.

[6] M. Prensky, "Computer games and learning: Digital game-based learning," *Handbook of computer game studies,* vol. 18, pp. 97-122., 2005.

[7] I. Averianova, "A Cell phone in the Classroom: A Foe or a Friend"?," in *Proceedings of the EUROCALL 2011 Conference*, 2012, pp. 5-12.

[8] L. Rainie, "Smartphone ownership update: September 2012. Pew Internet & American Life Project.," 2012.

[9] K. Purcell, Rainie, L., Heaps, A., Buchanan, J., Friedrich, L., Jacklin, A., Chen, C., & Zickuhr, K. . (2012, How Teens Do Research in the Digital World. .

[10] M. Rubinkam. (2010, November 26, During boring classes, texting is the new doodling.

[11] F. F. Wei, Wang, Y. K., & Klausner, M., " Rethinking College Students' Self- Regulation and Sustained Attention: Does Text Messaging During Class Influence Cognitive Learning?," *Communication Education,* vol. 61, pp. 185-204, 2012.

[12] A. D. Froese, Carpenter, C. N., Inman, D. A., Schooley, J. R., Barnes, R. B., Brecht, P. W., & Chacon, J. D. , "Effects of classroom cell phone use on expected and actual learning," *College Student Journal,* vol. 46, p. 323., 2012.

[13] S. W. Campbell. (2007, February 2014). Classrooms : Ringing , Cheating , and Classroom Policies Perceptions of Mobile Phones in College Classrooms : Ringing , Cheating , and Classroom Policies. 37–41.

[14] I. Ajzen, "The theory of planned behavior. Organizational behavior and human decision processes," vol. 50, pp. 179-211., 1991.

[15] B. G. Godin G, A. Eccles, M. & grimshaw J., "Healthcare professionals' intentions and behaviours: A systematic review of studies based on social cognitive theories.," *Implementation Science,* vol. 3, 2008.

[16] A. J. J. Francis, Eccles, M. P., Johnston, M., Walker, A., Grimshaw, J., Foy, R., Bonetti, D. , "Constructing questionnaires based on the theory of planned behaviour a manual for health services researchers.," 2004.

[17] R. Kumar, *Research methodology: A step-by-step guide for beginners*: Sage Publications Limited, 2010.

[18] R. G. a. G. O'Nei. (2007). *Likert scale & surveys – best practices: Intelligent Measurement*. Available: http://intelligentmeasurement.wordpress.com/2007/11/20/likert-scale-surveys-best-practices/

[19] E. A. C. A. Seaman. (2007, Likert Scales and Data Analyses. STATISTICS ROUNDTABLE. Available: http://mail.asq.org/quality-progress/2007/07/statistics/likert-scales-and-data-analyses.html

[20] P. Deubel, "An investigation of behaviorist and cognitive approaches to instructional multimedia design," *Journal of educational multimedia and hypermedia,,* vol. 12, pp. 63-90., 2003.

IRJECE