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ADOPTION OF WHATSAPP IN ONLINE CLASSES AT HIGHER EDUCATION INSTITUTIONS: AN APPLICATION OF TECHNOLOGY ACCEPTANCE MODEL (TAM)

Abstract

Social media is one of the most creative and innovative teaching learning tools (Mistar & Embi, 2016). This study aims to analyze the attitude and perception of the students and teachers through regarding using Whatsapp as teaching learning tool in online classes through Technology Acceptance Model (TAM).Data was collected from the 180 participants through a semi adopted questionnaire administered by Abu-Dalbouh(2013) and Pattanshetti& Kamble (2012) have been taken with minor changes. Quantitative method using survey technique has been applied. All hypotheses were accepted and findings of survey suggested that students and teachers acknowledged the Whatsapp as easy to use and they are satisfied with using Whatsapp for online classes. Students and teachers showed positive attitude towards Whatsapp and majority of the students used Whatsapp as communication and feel that Whatsapp can be the best teaching learning tool as it is easy to access. However some participants showed the negative attitude because of internet issues.

Keywords: *Assessment strategies, online, Whatsapp, higher education.*

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INTRODUCTION

World has become the global village because of technology. No doubt technology has changed the thinking behaviours, working domains of people. Social media applications are also the part of this technology. Social media applications like Facebook, Whatsapp, Twitter, Instagram, LinkedIn, Youtube, Wechat are considered as the most useful source of communication (Syamala Devi,2019). People are connected with one another with these applications. Syamala Devi (2019) further argued that the usefullness of these applications are not limited to communications but also business and education. Different countries including developed and developing use this applications for academic purposes. Changes due to technology inspired the attitude of higher education institutions to provide online environment for teaching and learning in order to cope with the latest technology (Bierne & Titko (2020). Advancement of technology has put positive impact on teachers and students (Huda, 2019). Social media applications not only use for chatting, sharing funny videos, texts but also for the education purposes like sharing notes, lectures, academic discussions etc(Devi,2019). This has increased the online environment of education which is the best practices for the institutions to organize the online classes. This is the opportunity for the institutions to make much use of such. After the outbreak of COVID-19 since December 2020 the people has been ceased the p to their homes. Academic institutions have stopped their academic and non academic working. Different public institutions have been closed and people have been urged to stay at home. In this scenario, online environment of education would be the best option to reinstate the academic sessions for educational institutions. Many researchers suggested to adopt new technology oriented approaches to inspire and motivate learners and academicians; social media would be the best approach because social media applications are widely used by the people in Pakistan, people

used different social media applications like facebook, whatsapp, twitter, linkedin, instagram, youtube etc. The research intends to evaluate the attitude of students and teachers towards social media as tool for online learning environment through Technology acceptance model (TAM) developed by Davis in 1989. This model is used to predict the use and acceptance of information system and technology among the masses. The framework of this research will be beneficial in identifying the students applications for latest pedagogy in online classes. This framework will also filter out the effective application for academic purposes.

OBJECTIVES OF THE STUDY

- ✓ To identify the elements that decisively forecast the learners' perspectives and intention to employ whatsapp for online classes.
- ✓ To evaluate the attribute of usability of Whatsapp by the teachers and students.
- ✓ To evaluate the users' satisfaction regarding using whatsapp as tool for online classes.
- ✓ To evaluate the data that suits of the Technology Acceptance Model for the learners' acquisition of the Whatsappas tool for online environment of education in higher education.
- ✓ To evaluate the usage of Whatsappfor online teaching learning environment in higher education through Technology acceptance Model (TAM).

REVIEW OF LITERATURE

Social media have become the efficient tools for communication among the masses, where everyone can comment, discuss, chat and share the views , generate the knowledge in a group and these social media tools are quickly changing the way of communication(Syamala Devi,2019). In higher education institutions, the teachers, learners and other communicate

together on the target of creating the knowledte. Manca & Ranieri (2013) noted that researchers and pedagogues experiencing the social media applications to inspire students to make use of these applications for academic purpose. Coleman, (2013) & Minocha, (2009) considered that social media applications have brought the independence among the learners by connecting and collaborating outside the academic institutions and obtain the grounded experiences in their natural settings. A research conducted in America in 2015 reported the obvious use of social media applications found that approximately 65% of adult people used it and it is the dramatic increase which was only 7% in 2005(Perrin, 2015).

Famous Social Media Applications

 Twitter: It provides a platform for the learners and teachers to post class announcements and real information on different field trips.--. Participants usage on twitter per day was noted by Huseyin Bicen and Cavus (2012) highlighted that more than 40% utilized that platform for more than four hours, more than 30% utilized it for more than 3 hours and more than 11% utilized this applicationn for an hour. Twitter has many functions that have been used by the users for educational purposes like quotes, videos, photos and news etc. (Huseyin Bicen & Cavus, 2012) as cited in (Almankory, Abdullah and Zaid, 2019).

Facebook: It offers a platform for the teachers and learners to discuss on different academic issues. (Syamala Devi,2019). Further more ''the Post videos, photos, documents, and other resources on the group's wall and student can access before class or when they work on their assignments''. Bosch, (2009), Pempek, et al, (2009) and Hussein & Ng, (2010) as cited in Mali, (2013) noted that facebook was used as effective tool for teaching learning process like undergraduate learners practised it by using Facebook for e-portfolio. Furthermore the pages regarding any institutions can be made and students and teachers follow to share, discuss and comments their views on the posts shared.

YouTube: It provides the platform for the students to listen the lectures , gives views about the lectures posted and it also provides online lectures delivered by the teachers . Youtube is widely used in educational context (Baranov& Pivovaro,2018).Dyos, (2018) found that Youtube is effective tool of learning in online classes however the students should be empowered with the skills to make the best use of it. Moghavvemi et.al, (2017) researched that youtube is the best complementary tool for teaching learning process for students and teachers.

Whatapp: Whatsapp application is a smart phone application widely been used for the text, videos, notes sharing among the students.(Mistar&Embi,2016). It is the creative teaching technique to pull the learners towards online learning environment by providing fun based learning (Smit ,2015).

Instagram: "A picture is worth thousand words". Instagram can showcase student work by offering a place to feature student hard work or even interesting details about a student.

4. Blogs: "Instead of traditional writing projects, blogs creates opportunities for students to write and display their writings on a large scale"(Syamala Devi,2019).

Linkedin: LinkedIn is the most efficient social media application that is used by the scholars, academicians and philosophers for learners engagement. Cooper, (2014) noted that LinkedIn is not limited to communication tool but inspire students in their professional work by offering the creative options. Scholars, academicians, philosophers, research associates post their research work and writings.

RESEARCH HYPOTHESIS

> **H1**:   Subjective norm will strongly predict students' attitude to use whatsapp
>
> **H2**: Perceived ease of use will strongly predict students' attitude to use whatsapp.
>
> **H3**: Perceived Usefulness will strongly predict students' attitude to use whatsapp

H4: Students' attitude will strongly predict their intention to use whatsapp.

H5: Students' satisfaction will strongly predict the adoption of whatsapp for online classes.

H6: Attribute of usability will strongly forecast the use of whatsapp as teaching learning tool for online classes.

RESEARCH QUESTIONS

1. How Technology Acceptance Model be used for Whatsapp acceptance for online environment of education?
2. What are the most accepted social model applications for online teaching learning environment?
3. Can the WhatsApp be used as teaching learning tool for online environment of education?
4. What are the elements that decisively forecast the learners' perspectives and intention to employ whatsapp for online classes?
5. What are the attribute of usability of Whatsapp by the teachers and students?

PROPOSED METHODOLOGY

Researcher developed a proposed methodology on the basis of experiences and available literature. After the outbreak of COVID-19 there is a need to make the best use of social media applications for online education environment. A proposed methodology was taken with permission as the road map of this research. Figure 2 indicates the proposed methodology. Methodology is a series of stages which are linked together with consequent results dependencies. Researcher used the Technology Acceptance Model(TAM) as a theoretical framework for this research. On the basis of (TAM) the questionnaire administered by Abu-Dalbouh (2013) and Pattanshetti & Kamble (2012) have been taken and with minor changes the questionnaire has been administered for this study.

Stage 1: Background of the problem
In this stage the researcher focuses on discussing the aims and objectives and need of this research. Back ground of the problem leads to the operationalization of the problem.

Stage 2: Proposition
At this stage the researcher propose a provisional design on the operationalization of the problem to get the aims and objectives of this research. Provisional design is the outcome of this stage.

Stage 3: Evolution
At this stage the provisional design will be put into practice.

Stage 4: Judgment
At this stage the judgment will be taken to determine the precision of whatsapp and Youtube as the teaching learning tool. A quantitative research approach based on (TAM) will be applied.

Stage 5: Findings
At this stage an operational methodology will be implemented which leads to the final results and findings.

Theoretical framework
Many theories and models have been administered to assess the attitudes of participants regarding the judgment of technology use. According toAbu-Dalbouh (2013) the popular theories are Unified Theory of Acceptance and Use of Technology (UTAUT) (Venkatesh et al., 2003; 2012),Innovation Diffusion Theory (IDT) (Rogers, 1995), (FITT) framework (Ammenwerth et al., 2002),Theory of Planned Behavior (TPB) (Fishbein and Ajzen, 1975), Technology Acceptance Model (TAM) (Davis et al., 1989).Scherer et.al(2019)discussed Technology Acceptance Model as the best suited because it encompasses the acceptance and integration of technology in classrooms as well as out of class rooms. Technological Pedagogical and Content Knowledge(TPACK) has also showed the integration of technology in the classrooms (Mishra & Koehler, 2006) as cited in Scherer et.al(2019). Aspay (2012) noted that (TAM) is popular in
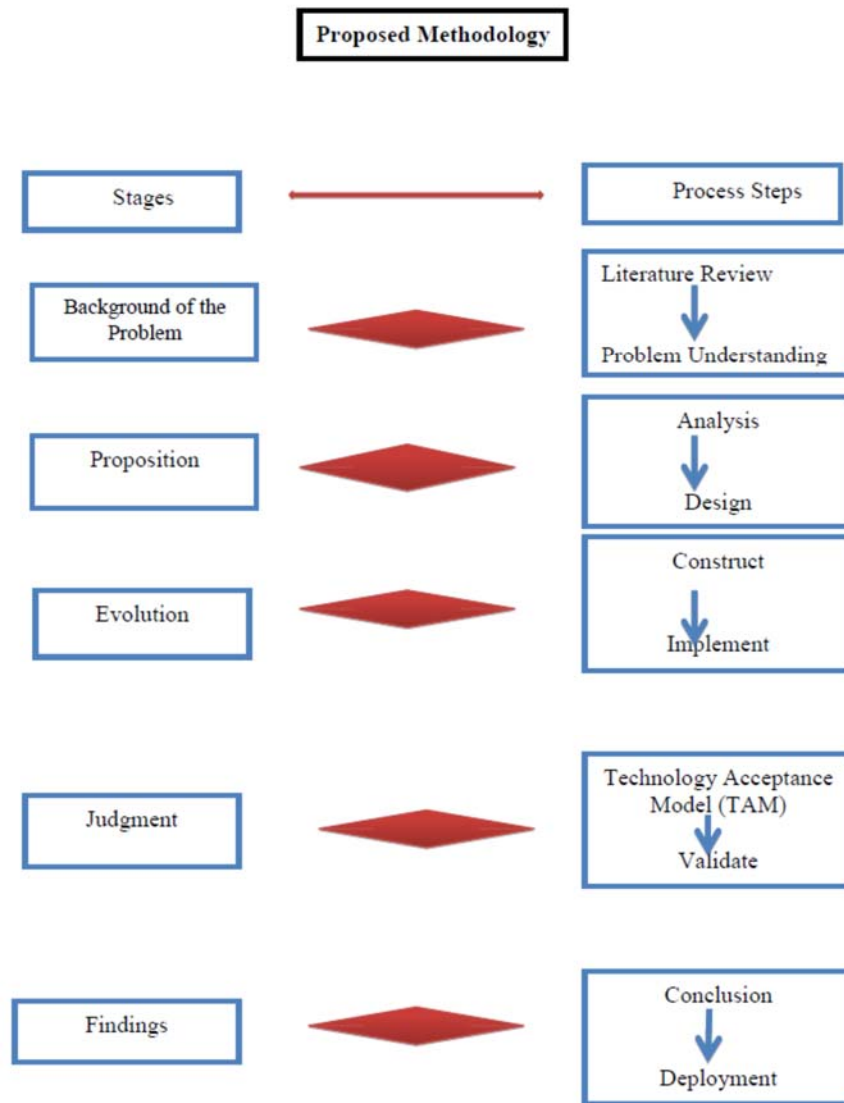
the field of education and business however it has not got popularity in the education as compared to business.
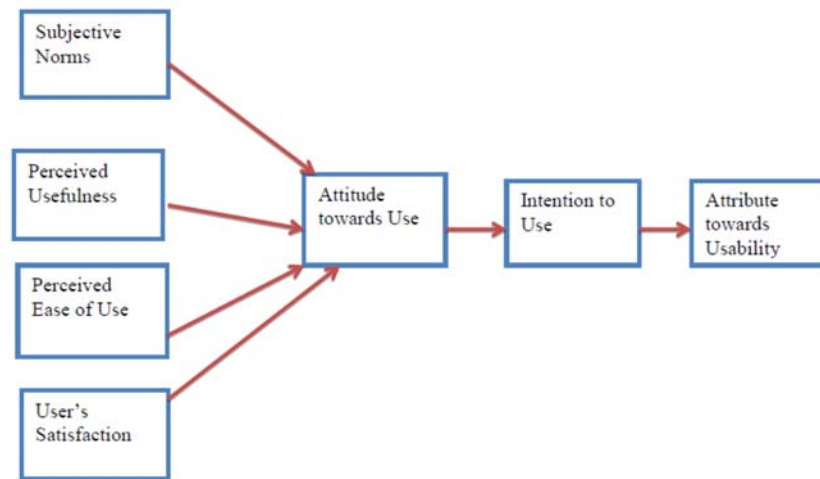
Technology Acceptance Model(TAM) (Davis et.al.,1989) as cited in Aypay,2012

POPULATION AND SAMPLING
Population of this study is the university students of all four universities of district Shaheed Benazirabad including Shaheed Benazir Bhutto University Shaheed Benazirabad(SBBU SBA), Shaheed Benazir Bhutto University of Veternary and Medicine (SBBUVAS), Quaid e Awam University of Engineering,Science and technology(QUEST) . Sampling is a technique that is taken as a small number of represented participants in a given population. (Jemain et al., 2007). Random sampling technique has been used in order to avoid the biasness. 180 undergraduate and postgraduate students have been selected to respond on prescribed questionnaire.

Proposed Methodology

Stages	Process Steps
Background of the Problem	Literature Review → Problem Understanding
Proposition	Analysis → Design
Evolution	Construct → Implement
Judgment	Technology Acceptance Model (TAM) → Validate
Findings	Conclusion → Deployment

SAMPLING DESIGN

Name of University	No of Departments	Selected departments as Target population	Sampling of University Students	Total no of Participants
Shaheed Benazir Bhutto University Shaheed Benazirabad(SBBU SBA) Main Campus	Undergraduate=9 MS/M.Phil=2	Undergraduate=2 1.Education 2.Information Technology Postgraduate=1 Education	Undergraduate=2 1.Education=50 2. I T=30 Postgraduate=1 Education=10	90
Quaid-e-Awam university of Engineering, science and technology (QUEST)	Undergraduate=12 Postgraduate ME=12 MS=4	Undergraduate=2 1.Software Engineering 2.English ME/MS=2 Software Engineering and Mathematics	Undergraduate=2 1.Software Engineering=30 2.English=30 ME/MS=10	70
Shaheed Benazir Bhutto University of Veterinary and science (SBBUVAS)	Undergraduate=6	Undergraduate=1 Veterinary and Medicine	Undergraduate=1 Veterinary and Medicine=20	20

INVESTIGATIVE TECHNIQUES

An adopted questionnaire with permission from Pattanshetti & Kamble (2012) and Abu-Dalbou (2013) with minor amendment will be taken for the collection of data.

DATA COLLECTIONS

Data will be collected through a semi adopted questionnarie administered by Pattanshetti & Kamble (2012) and Abu-Dalbou (2013).Survey questions regarding Whatsapp were written as follows: Strongly Disagree=1 Disagree=2 Undecided=3
        Agree= 4   Strongly Agree=5

Table.1

Construct	Operational Definition						
Subjective Norms	It refers the closest persons or friends influence upon the users and its impact on the usage.						

Items	SD	D	UD	A	SA	Mean	St. D
Q.1: Most people who are important to me expect me to use Whatsapp.	8	2	15	50	105	4.3	.113
Q.2: Most of my friends believe using Whatsapp is a wise decision for online education.	10	20	50	70	30	3.5	.125
Q.3: Most people who are important to me expect me to interact with them on Whatsapp .	8	12	15	50	95	5.3	.317
Q.4: Most of my classmates believe that using Whatsapp to share ideas will enhance our academic knowledge.	12	18	25	55	70	3.9	.427
Q.5: Most of my classmates believe that using Whatsapp to share ideas meant that one is sociable.	30	25	20	60	45	3.4	1.01

Table.1 showed the connection between the items towards the subjective norms and from the 5.3 and 4.3 highest mean showed that most people who are important to them and expect them to use and interact with one another throughWhatsapp.

Table .2

Construct	Operational Definition
Perceived Usefulness of	Perceived usefulness is a feeling that whatsapp will provide a best communication platform for online classes.

Items	SD	D	UD	A	SA	Mean	St. D
Q.6: Whatsapp will enable me to connect with all my friends.	5	8	2	75	90	4.3	.567
Q.7: Whatsapp enable me to make new friends.	25	15	30	70	40	3.5	.123
Q.8: Whatsapp will enable me to share my thoughts and ideas with my friends and other people.	5	8	2	75	90	4.3	.427
Q.9: Whatsapp will improve my social skill.	5	2	8	60	105	4.4	.437

Table.2 demonstrated the connection between the items towards the usefulness of WhatsApp were all at the very highest mean. From items 6,8,9 the means 4.3,4.3,4.4 respectively shows the connection that whatsapp will enable them to connect with the friends and it will improve the social skills of the participants.

Table .3

Construct	Operational Definition
Perceived Ease of Use	It refers to the degree of easiness that students and teachers feel while using whatsapp in online classes.

Items	SD	D	UD	A	SA	Mean	St. D
Q.10: I find Whatsapp easy to use.	0	0	5	85	90	4.5	.124
Q.11: It is easy to navigate on Whatsapp.	15	10	13	62	80	4.0	.432
Q.12: It is to post my profile on the net with Whatsapp.	45	20	8	67	40	3.2	.122

Table.3 demonstrated the connection between the items towards the ease of use of WhatsApp were all at the very highest mean. From items 10,11 the means 4.5,4.0 respectively shows the connection that whatsapp is easy to use and navigate.

Table.4

Construct	Operational Definition
User Satisfaction	It refers the degree of satisfaction that teachers and students feel while using whatsapp in online classes.

Items	SD	D	UD	A	SA	Mean	St. D
Q.13: I completely satisfied in using the Whatsapp for online education.	4	6	5	40	125	4.5	.324
Q.14: I feel very confident in using the whatsapp for online education	0	5	7	50	118	4.6	.102
Q.15: I found whatsapp easy to share information with friends and teachers .	1	2	5	42	130	4.7	.013
Q.16: I can accomplish the task quickly using whatsapp.	45	30	50	40	15	2.7	.721
Q.17: I believe that from using whatsapp communication will be easy .	0	0	6	34	140	4.7	.021

Table.4 demonstrated the connection between the items towards the satisfaction of WhatsApp were all at the very highest mean except the item 16 which shows the lowest mean of 2.7. From items 13, 14, 15 and 17 the means 4.5, 4.6, 4.7 and 4.7 respectively shows the connection that participants are satisfied with using whatsapp.

Table.5

Construct	Operational Definition
Attitude	It refers the attitude of students and teachers towards using whatsapp for online classes.

Items	SD	D	UD	A	SA	Mean	St. D
Q.18: I like to use Whatsapp.	0	6	4	80	90	4.4	.123
Q.19: I feel that connecting with friends and schoolmates through Whatsapp is good.	0	0	5	95	80	4.4	.245
Q.20: I like to engage my self with friends and people on Whatsapp.	10	5	4	81	80	4.2	.324
Q.21: I think it is good to subscribe to Whatsapp to connect and interact with people.	8	7	5	77	85	4.3	.431

Table.5 demonstrated the connection between the items towards the attitude of participants towards use of WhatsApp were all at the very highest mean. From items 18, 19, 20 and 21 the means 4.4, 4.4, 4.2 and 4.3 respectively shows the positive attitude of participants towards using whatsapp.

Table.6

Construct	Operational Definition
Intention	It refers the teachers and students intention to use whatsapp for communication as well as for online classes.

Items	SD	D	UD	A	SA	Mean	St. D
Q.22: I intend to use Whatsapp frequently to interact with friends and other people.	0	0	5	60	115	4.6	.153
Q.23: I intend to know more friends with Whatsapp.	30	25	15	70	40	3.4	.354
Q,24:I will continue to use Whatsapp because of its benefits.	5	6	4	40	125	4.5	.236
Q.25: I would recommend Whatsapp to my friends and classmates for online education.	5	12	3	25	135	4.5	.153

Table.6 demonstrated the connection between the items towards the intention of participants towards using WhatsApp were all at the very high. From items 22, 24, 25 the means 4.6, 4.5 and 4.5 respectively shows the positive attitude of participants towards using whatsapp for online classes.

Table.7

Construct	Operational Definition
Attribute towards Usability	It refers the usage of whatsapp. This usage assists the teachers and students to obtain feedback that, is the whatsapp working as best communication tool or not.

Items	SD	D	UD	A	SA	Mean	St. D
Q.26: It is easy to interactwith whatsapp for online classes.	3	4	3	45	125	4.6	.025
Q.27: The procedure through whatsapp for online classes will be easy.	12	7	6	40	115	4.3	.158
Q.28: I found whatsapp easy while online classes.	15	12	3	50	100	4.2	.192
Q.29: I found the various functions in this system were well integrate.	10	6	5	69	90	4.2	.098
Q.30: I think that I would like to use whatsapp always for communication.	2	4	4	40	130	4.6	.102

Table.7 demonstrated the connection between the items towards the actual usage of participants towards WhatsApp were all at the very high. From items 26, 27, 28,29 and 30 the means 4.6, 4.3 and 4.2, 4.2, 4.6 respectively shows the actual usage of participants towards using whatsapp for online classes.

DISCUSSION

Hypothesis 1 is accepted which shows that subjective norm will strongly predict students' attitude to use whatsapp. The findings demonstrated the influence of social contacts on participants

towards usage of whatsapp. The results of this research support the results found in Mistar & Embi, (2016).

Hypothesis 2 is accepted which demonstrated the perceived ease of use will strongly predict students' perception to use whatsapp . Resusts from the participants show highest level mean becasuse the whatsapp is very easy to use and navigate and students consider it the best teaching learning tool. Norashuha Tajuddin et al. (2013) ,Norfaezah (2015) and Mistar & Embi, (2016)supports the results obtained from the participants.

Hypothesis 3 is accepted which shows the perceived Usefulness will strongly predict students' attitude to use whatsapp. Whatsapp enable the students to connect with friends, making new friends, sharing ideas and improve social skills. Sanjaya (2012) supported this statement who said that majority of the participants are interesting in using whatsapp because of many attractive options.

Hypothesis 4 is accepted which demonstrated the students' attitude will strongly predict their intention to use whatsapp . The intention of the participants towards using whatsapp is very high. Participants intend to use whatsapp frequently to keep in touch with the friends and they will continue to use whatsapp because of its benefits and they recommend their friends and classmates to use whatsapp for online classes. Lynch (2003) support this statement.

Hypothesis 5 is accepted which showed the students' satisfaction will strongly predict the adoption of whatsapp for online. The satisfaction of the participants towards using whatsapp is very high. Participants are satisfied with using whatsapp because the information among the friends is easy to share and communication is easy and with the innovative options in whatsapp it can be the best teaching learning tool for online classes.

Hypothesis 6 is accepted which showed the students' attribute of usability will strongly forecast the use of whatsapp as teaching

learning tool for online classes. Participants considered whatsapp easy to use because of different functions and mostly students use whatsapp for communication.

Hypothesis 7 is accepted which showed the Participants' towards adoption of whatsapp for online classes. Participants feel easy while connecting with friends and schoolmates through whatsapp**.**

CONCLUSION

Whatsapp enable the students to connect with friends, making new friends, sharing ideas and improve social skills. Whatsapp use for at higher education has been considered as teaching learning tool with communication. Students feel whatsapp easy with latest functions for online classes. Above results showed the students and teachers attitude, intention and usability towards whatsapp for online classes. Research recommends whatsapp as teaching learning tool for online classes at higher education.

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