

ENHANCING STUDENTS LEARNING USING WHATSAPP APPLICATION IN CLASSROOM ACTIVITIES: A CASE STUDY IN A TECHNICAL COURSE AT UNIVERSITI TEKNIKAL MALAYSIA MELAKA (UTEM)

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ABSTRACT

The objective of this study to find out the effectiveness of using WhatsApp in classroom activities to enhance students learning in a technical course (Manufacturing Sustainability) of a Manufacturing Engineering Degree at Universiti Teknikal Malaysia Melaka (UTeM). This is in contrast to the common utilization of whatsapp in learning which is usually involved with communication outside the classroom. The utilization of whatapps in class activities as a learning platform is designed by the lecturer/facilitator to take advantage on its ease and flexibility in participation and personalized learning gadget (students' own smartphone). This is also to overcome the major drawbacks of using whatsapp out of classroom which is commonly related to lack of 'facilitator/expert review' on the content matter of the discussion, opinions and articles posted on the social media. Students' perspective are analysed through questionnaire participation. The questionnaire involved four dimension of learning and teaching that are teaching method; evaluation of learning methods, guidance and supervision as well as equipment and technical. Findings from the questionnaire analyses shows that students had agreed that using Whatsapp in classroom activities is beneficial due to its quick and easy distribution of learning materials (learning resources and discussion output). Moreover equipment and technical factors also contributed to the effectiveness which are; it is easy to download, operate, easy to access whatapps at students' own mobile phone and it is inexpensive to utilize whatapps compared to other learning app/gadget/social media platform. However, students also agreed that lecturer/facilitators' creativity and innovative way in designing learning activities using whatapps application is recommended for the utilization of this social media as a learning and teaching platform.

1. INTRODUCTION

WhatsApp is one of popular social media tools that can be used for teaching and learning purpose. In other word, WhatsApp can be seen as a social network services and has been used as a platform for higher education institutions (Yin, 2016). For learning purpose, WhatsApp allows user to send text messages, attached images, audio files, video files, and links to related resources. User can add 256 contacts in a group which is the creator of the group act as an administrator and have privilege to remove members without need the approval from the group members.

Align with 21st century educational tools, Mishew and Anderson (2015) highlighted that through WhatsApp, learners can share knowledge, information, materials and opinions. Through this technology also will benefit to enhance learning engagement, improve critical

skills and positively influence discussions among students in group. In other related works, Mashru and Ami (2015) used WhasApp to improve vocabulary which is learners could use additional resources like website links related to vocabulary enrichment. Gon and Alka (2017) and Cetinkaya (2017) looked at advantages of challenges using WhatsApp as shown in Table 1.

Table 1: Advantages and Challenges using WhatsApp

ASPECTS	ADVANTAGES	CHALLENGES
TECHNICAL	<ul style="list-style-type: none"> ▪ Simple to Use ▪ Free of charge ▪ Easily available and downloadable ▪ Privacy ▪ Fast communication 	<ul style="list-style-type: none"> ▪ No smartphone ▪ Message flooding ▪ Time consuming ▪ Group Maintenance ▪ Eye strain ▪ Mobile internet quota ▪ Battery life ▪ Memory capacity
EDUCATIONAL	<ul style="list-style-type: none"> ▪ Conducive environment ▪ Sense of belonging to the group ▪ Sharing learning content ▪ Interaction with instructor ▪ Contribution to student-student communication ▪ Peer support ▪ Naturality and comfort in self-expression 	<ul style="list-style-type: none"> ▪ High expectation of instructor availability ▪ Huge amount of learning materials makes it confusing ▪ Use of inappropriate language ▪ Difficulty in editing the post ▪ Leaving the group
INSTRUCTIONAL	<ul style="list-style-type: none"> ▪ Easy accessibility to learning material ▪ Instructor available ▪ Learning anytime anywhere ▪ Provide secure environment ▪ Organizing academic activities ▪ Learning unwittingly 	<ul style="list-style-type: none"> ▪ No efforts by some student ▪ Some students share material to impress instructor without actually learning about it ▪ Shift in perception/lost concentration ▪ Deletion of the messages

Few researchers had mentioned that learning via WhatsApp application can improve student achievement and motivation of preparation with a groups (Mashru & Ami, 2015; Sayan, 2016). The advantages of using whatsasp include facilitator’s availability dand learning anytime. However, there are still limitation on using WhatsApp which is usually related to information are overload, students without WhatsApp felt isolated and social pressure due to the public nature of the app and other technical disadvantages for example time consuming and eye strain (Rosenberg & Christa, 2018). Pooja et al (2017) also stressed that WhatsApp consumes much of time of students, make students lost their concentration as well as causes distractions with the home assignments.

Based on the numerous pros and cons related to Whatsapp use in teaching and communication; this case study is conducted in order to analyze the effectiveness of Whatsapp application in classroom to enhance learning during face to face learning session. This is in contrast to the common utilization of whatsapp in learning which is usually involved with communication outside the lecture session. The utilization of whatapps in class activities as a learning platform is designed by the lecturer/facilitator to take advantage on its ease and

flexibility in participation, personalized learning gadget (students' own smartphone) thus makes it is expected to be highly acceptable and interesting to the students. This is also to overcome the major drawbacks of using whatsapp out of the face to face lecture slot which is commonly related to lack of 'peer review', of the opinions and articles posted on social media (Rateesh, sareen).

2. METHODOLOGY

2.1. In Class Students' Activity

A whatsapp group is created and administered by the lecturer of the course i.e. Manufacturing Sustainability. In general, one class section of this course consists 50-70 students. The delivery of this course is using student centered learning approach. Besides lecturing, learning activities involved group discussion, presentation and tutorials in class. Mostly, students works in a group of 5-6 person and appointed their own group leader. To enhance learning particularly in facilitating the class activities through active participation, instant feedback and personalized learning; whatsapp application is utilized as a platform for the student centered learning activities in class. As such, a main whatsapp group is created and administered by the courses' lecturer; and each leader of the students' group is made as this whatsapp group members. The leader of each group is also a registered member of the students' whatsapp group (according to their respective section); that is always created by the students themselves and administered by the students' representative. Using this setup, for a 2 hour learning session, a class session usually start with a lecturer sharing the main content using a slide presentation for the first 30minutes. The lecturer then distribute the main topic for student discussion with an identified outcome for example a mind map to be presented at the end of 30 minutes. The produced discussion product (e.g. a mind map) was then shared by each leader to the whatsapps group administered by the lecturer and as well to the sections' whatsapp group managed by the students' representative. Using this way of sharing, the discussion is more organized and personalized as each students' had access to the learning materials under discussion without the needs to enroll to two different whatsapps group (except for the group leaders). Moreover, the feedback on outcome of discussion is available to be shared instantly and further discussion on the contents provided is available to be conducted while students' are referring to it on their own gadget.

2.2. Data Collection

Data collection was carried out using analytical descriptive method by distributing questionnaire to sixty (60) participants (students of Manufacturing Sustainability course), who are in their final year study of Bachelor of Manufacturing Engineering with Honours at Universiti Teknikal Malaysia Melaka The questionnaire consists of 16 questions which is group into 4 four dimension; which are teaching methodology; evaluation of learning methods, guidance and supervision and equipment and technical. Participants response are using likert scale (1 strong disagree -5 strongly agree).

Table 1: The use of WhatsApp application in Class to Enhance Students' Learning Questionnaire

NO	DIMENSION	CIRCLE				
		KAEDAH PENGAJARAN TEACHING METHODS				
1.	Is this your first learning experience using whatsapp in class activities in achieving the learning outcome.	1	2	3	4	5
2.	It is an interesting learning platform with the learning activities design by the lecturer.	1	2	3	4	5
3.	Learning scenarios with gamification design using whatapps platform is beneficial.	1	2	3	4	5
4.	Lecturers creativity and innovative way in designing learning activities using whatapps application is recommended.	1	2	3	4	5
5.	Experiencing efficient learning due to quick and easy distribution of learning materials (learning resources and discussion output)	1	2	3	4	5
6.	Learning environment using whatapps platform is interesting and fun.	1	2	3	4	5
KAEDAH PENILAIAN PEMBELAJARAN EVALUATION OF LEARNING METHODS						
7.	Using Whatapps help me to learn from my colleague's good/mistake.	1	2	3	4	5
8.	Instant feedback and reflection by lecturer and my colleague's on achieving the learning outcome based on activities on whatapps platform is crucial and help mein learning Manufacturing sustainability	1	2	3	4	5
9.	Using Whatapps help me to get immediate feedback from my lecturer	1	2	3	4	5
BIMBINGAN DAN PENYELIAAN GUIDANCE AND SUPERVISION						
10.	Learning objectives are more personalized for each lecture session.	1	2	3	4	5
11.	Its motivate me to engage in class activities, interact and give opinion when class activities are carried out using whatsapp platform	1	2	3	4	5
12.	Based on learning activities on whatsapp help me to improve skills in gathering information abd using evidence to support argument.Pensyarah sentiasa memberi peluang berinteraksi dan memberi pendapat di dalam kelas dalam meningkatkan keyakinan pelajar.	1	2	3	4	5

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EQUIPMENT AND TECHNICAL

13.	It is easy to download/use whatapps at your mobile phone compared to other learning app/gadget/social media platform e.g. facebook, youtube, ulearn	1	2	3	4	5
14.	It is easy to operate whatapps at your mobile phone compared to other learning app/gadget/social media platform e.g. facebook, youtube, ulearn	1	2	3	4	5
15.	It is easy to access whatapps at your mobile phone compared to other learning app/gadget social media platform e.g. facebook, youtube, ulearn	1	2	3	4	5
16.	It is inexpensive to utilize whatapps at your mobile phone compared to other learning app/gadget social media platform e.g. facebook, youtube, ulearn	1	2	3	4	5

3. RESULTS AND DISCUSSION

The overall questionnaires result is shown in Figure 1. From these results it was shown that 91% of the students agreed that using WhatsApp in class activities is helpful to enhance learning during a face to face lecture session. While remaining 6 % is quiet agree and only 3% is disagree.

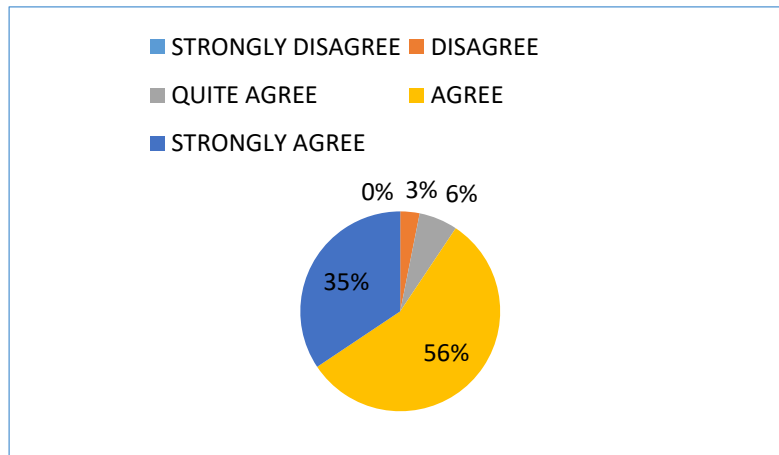


Figure 1: Students' response on the use of whatapps application in class activities to enhance students learning

Fig. 2 shows the average distribution of questionnaire statements (1-16) given in table I. It shows that for each item, the mean value is > 4.0, indicating that all participants are agreeable to the use of Whatsapp in class activities. The highest mean value of is 4.50 for item 5 which is participants agree on experiencing efficient learning due to quick and easy distribution of learning materials (learning resources and discussion output).

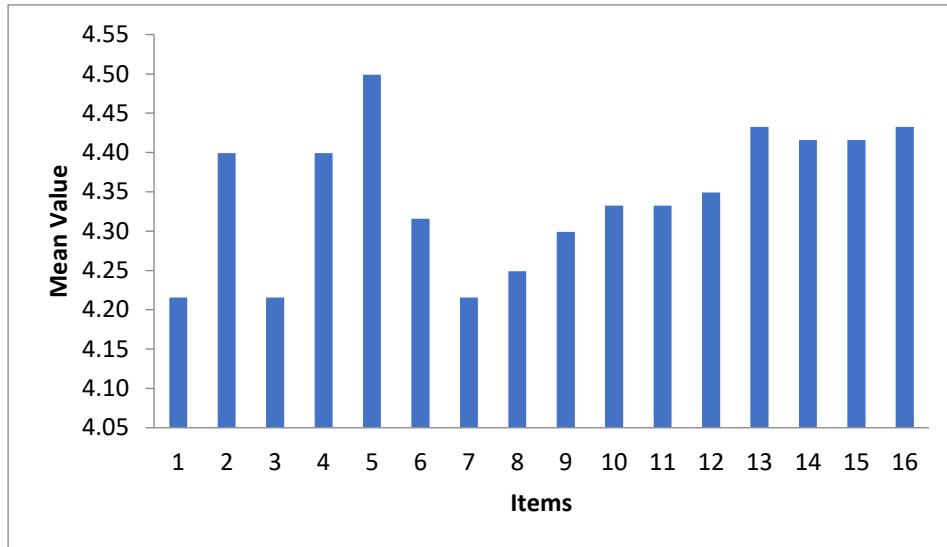


Figure 2: Mean value of WhatsApp Questionnaire items (1-16)

The average mean value of the four dimension of learning and teaching according to the participants' response are show in Figure 3. For each learning and teaching dimensions, it is found that the use of whatsapp in classroom activities is agreed with the highest mean (4.43) due to the equipment and technical reason. Factors related to this dimension; easy to download/use whatapps; easy to operate whatapps, easy to access whatapps at participants own mobile phone and it is inexpensive to utilize whatapps compared to other learning app/gadget/social media platform. This response is agreed by most of the participants as shown by the small deviation of the questionnaire finding (table 2).

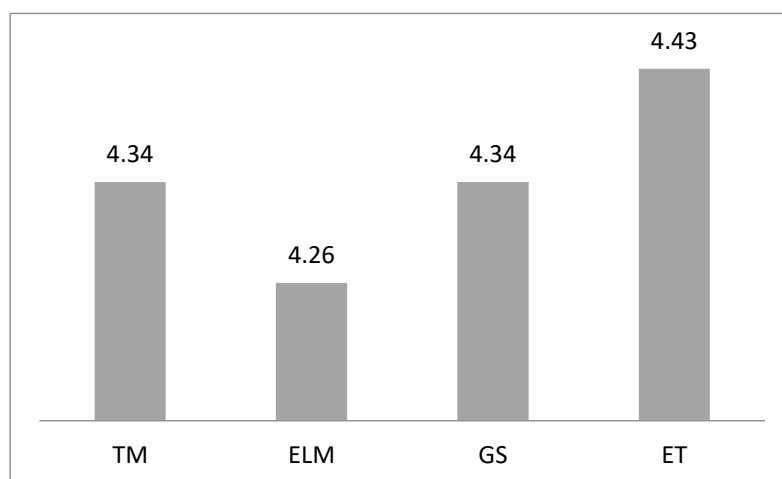


Figure 3: Average mean value of the four dimension of learning and teaching. TM-teaching method; ELM evaluation of learning methods, GS-guidance and supervision, ET-equipment and technical.

Table 2: The average mean value and standard deviation of the four dimension of learning and teaching.

DIMENSION	MEANS	STANDARD DEVIATION (S. D)
Teaching Methods	4.34	0.11
Evaluation of Learning Methods	4.26	0.04
Guidance and Supervision	4.34	0.01
Equipment and Technical	4.40	0.01

4. CONCLUSION

The use WhatsApp in the classroom activities for learning and teaching of a technical course e.g. Manufacturing Sustainability can be declared worthy of being applied in the classroom. Technical obstacles arise due to the use WhatsApp application in learning platform outside the class room (for example: information loading, lack of facilitator confirmation on discussion, time consuming and eyestrain) are not an issue. This is due to the utilization of Whatsapp in classroom activities is designed by the lecturer/facilitator to take advantage on its ease and flexibility in participation and personalized learning gadget (students' own smartphone) as a as the utilization in class. The finding in this case study had suggest that students had a good perspective and agreed that using Whatsapp in classroom activities is beneficial related to the four dimension in learning and teaching that are teaching method; evaluation of learning methods, guidance and supervision and equipment and technical.

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