Using Social media as a teaching and learning tool: A case of 4th Year Medical Laboratory Students at University of Malawi -College of Medicine

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Abstract

The *The aim of the paper is to design a pedagogical approach using social media for teaching the 4th year medical laboratory students in Malawi . The content was taught to the students using social media and they have been assigned group tasks using social media. The assessment was also done using social media and the results are discussed in this paper.*

Keywords: Classroom Teaching, Social media, WhatsApp,

1. Introduction

In the 21st century we are teaching students who are Digital Natives. Most of these students have spent their entire lives surrounded by and using computers, videogames, digital music players, cell phones, and all the other toys and tools of the digital age. In addition, they are entering higher education at the time when technology has invaded our life, most of them processes smart phones and are using social media platforms such as WhatsApp, Facebook, Twitter and Instagram. According to Davis et al, (2012) there is a huge gap, between what teachers used in the past considering educational aids, teaching methods, motivation strategies, etc., and what we are using now to teach our students. It for this reason that 21st century teachers should include use of different forms of technologies in teaching.

1.1 Objective of the Study

The objective of this paper is to show the effectiveness of social media like WhatsApp in delivering knowledge to 4th Year Medical Laboratory Students.

2. Literature review

Why use social media in the classroom?

By the year 2012, social media giants Facebook and Twitter had over 1 billion users worldwide (Davis, Deil-Amen, Aguilar, and Canche, 2012). Davis et al. suggest that because of this explosion in social media usage, college-age students largely interact with one another via various electronic means such as Twitter and Facebook. Furthermore, Junco, (2012) indicate that higher education is using social media for various educational purposes ranging from recruiting students to posting course content via Twitter and Facebook. Therefore, in the 21 century it is unavoidable for teachers to use social media to enhance the teaching. Junco, 2012 further stated that, the benefits of using the social media in a classroom significantly outweigh the concerns and schools should be able to come up with the steps to reduce any risks that can come with used of social media in classrooms.

Another social media platform that is also being used by students in WhatsApp. WhatsApp is a free messenger application that works across multiple platforms like iPhone and android phones, and this application is being widely used among students to send multimedia messages like photos, videos, audios along with simple text messages (Lenhart el tal, 2009).

3. Material and Methods

In August 2018 the author was offered an honorary teaching post to teach fourth year Medical Laboratory Science students at University of Malawi-College of Medicine. The course has eight main topics and was delivered using four teaching methods. The methods include: Flipped classroom, WhatsApp discussion, and interactive lecture a shown in Table 1. Topic 7 and 8 was taught using WhatsApp discussion. WhatsApp was opted as a mode of teaching because many students had no laptops but had android phones with WhatsApp application.

3.1 Teaching methodologies used

Four different methods were used to teach eight topics. As shown in Table 1, each method was used to teach two topics. Each topic was taking approximately one and half week and in a week there was two sessions of two hours each except in the WhatsApp discussion.

Table 1: Teaching methodologies used

Methods	Topics	Duration in weeks
Interactive lecture	Topic 1 and Topic 2	4
Didactic lecture	Topic 3 and Topic 4	3
Flipped classroom	Topic 5 and Topic 6	3
WhatsApp	Topic 7 and Topic 8	4
Total		14

3.2 Teaching Using WhatsApp

WhatsApp teaching had $1\frac{1}{2}$ hour discussion session four times a week. This was the case because were 25 students and each was supposed to be given an opportunity to participate in each discussion session. The time for the next session was always agreed a day before the session. Out of the 90-minute session 5 minutes was for introduction, followed by three 20-minute sessions. Between each 20 minutes' session there was a 5 minutes' session for questions and for the lecturer to clarify issues and collect misconception. The last ten minute was used to conclude of the lesson.

 In the discussion the lecturer acted as facilitator by introducing the topic on the forum and guiding the discussion. The lecturer used active leaning approaches in facilitation. Figure 1 shows the different methods that were used to complement each other in enhancing active learning in learners. A combination of these methods were used in a single session depending of the nature of the topic under discussion. To ensure maximum participation of the learner the lecturer was an active listener, active follower of the discussion and remained neutral yet involved. This was done to maintain confidence in learner on the matter under discussion. The lecturer used 80:20 rule- the learners were talking 80% of the time and the lecturer as the moderator of the discussion was talking 20% of the time.
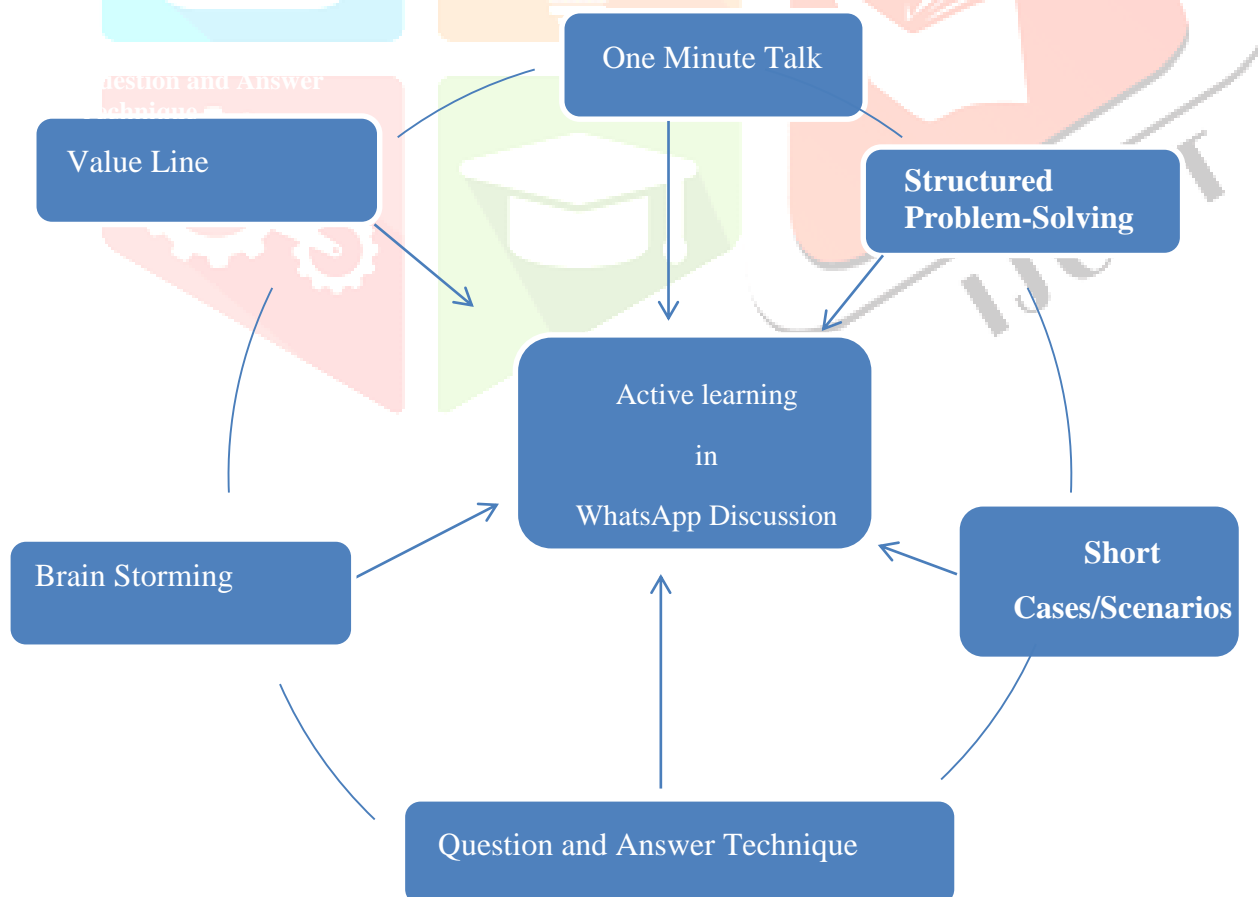

Figure 1: Active Learning Approaches

Shown in Figure 1: Six methods were used in WhatsApp facilitation these include: One-minute Talk, Brainstorming, Short Cases/Scenarios, Value Line, Structured Problem-Solving and Question and Answer Technique. Below is the detailed explanation of each method.

3.2.1 Brainstorming

Brainstorming was largely used in soliciting views on the students on the topic under dissuasion.   The lecturer role in brain storming was to ask questions and guide the discussion. The learners were encouraged to refer to their previous knowledge and experiences or similar problem. All answers were acknowledged during this idea generation period but at the end of session best answer were be taken on board.

3.2.2 Short **Cases/Scenarios**

The use of scenarios/case studies allowed the learners to apply the concepts learned in discussion to real-life situations. During a discussion a question was posed to the group, to generate a discussion about how they would approach a given scenario/situation. Learners were also asked conduct additional research to effectively approach the scenario under discussion and present the finding in the next session. In the next session learners discussed and analyze the scenario/case by applying the knowledge they learned from the research they conducted.

3.2.3 Value Line

This method was used by the lecturer to visually depict the diversity in thinking in the learners. Since the course was largely on learning theories and teaching methods, the method was used to see how learners view learning theories, teaching methods and assessment methods. Through this method an issue/topic was presented to the group and ask each learners to determine how they feel about it. Form a rank ordered line and number the participants from 1 up highest level of agreement (strong disagreement to strong agreement). After this learner were divided into smaller WhatsApp groups. The lecturer ensured that the groups contains learners from different parts of the line. The Value line was used as a basis for group discussion and critical questioning, such as why is there such a range of perspective among the learners?

3.1.1.4 Structured Problem-Solving

In Structured Problem-Solving learners were divided into five smaller WhatsApp working groups group and the lecturer was a member of the smaller groups in order to follow the discussion and to continue guiding the discussion . Groups discussed/analyzed the assigned problem/issue. Each member of the group was encouraged to understand the topic in order for them to be prepare to present to the larger group. During the whole group session learners were randomly chose to relate the problem/issue to the larger group. Every learner was given the opportunity to present to the group.

3.1.1.5 Question and Answer Technique

Questions are a simple yet effective way to promote interaction, and provide the lecturer with a sense of anticipants' comprehension of the subject matter under discussion. The was a 5 minutes' question time between each 20 minutes'. The questions were asked by both the learner and the lecturer, question time helped the lecturer

to clarify issues and collect misconception. The lecturer acknowledged all answers, in order to support continued participation of all the learners.

3.1.1.56 One Minute Talk
One Minute Paper was used to check learner learning progress at the end of the secession. Participants at the end of each session were asked to write a *One Minute talk* in response to the following questions: What was the most important thing you learned today? What one important questions do you still have; what remains unclear? What would you like to know more about? Learners were asked to send their responses to one-minute talk to the lecturer WhatsApp inbox. This activity aimed at focusing the learner on the day's content as well as provides feedback to the lecturer on learning progress of individuals. The *one minute talks* responses help the lecturer plan on how to progress in the next session

3.3 Assessment of effectiveness of each method

Students were examined in each topic and the distribution of the examination questions for each topic is shown in Table 2. For Multiple Choice question, True or False, Matching Items and Identification of Concepts, each question carried one mark whereas for short answer questions each question was four marks or three mark.

Table2: Summary of type of test Item and total marks

Type of test item	Number of Items	Total Marks
Multiple Choice Questions	15	15
True or False Questions	12	12
Identification of Concepts	8	8
Matching Items	5	5
Short Answers Questions	16	60
Total	56	100

Effectiveness of each teaching method was done by asking students different types of question and each topic had 7 items as shown in Table 3.

Table 3: Summary of number of items on each teaching method used

Topic	Teaching Methods used	Number of items per topic for each type of item					
		Multiple Choice Questions (MCQ)	True or False Questions	Identification of Concepts	Matching Items	Short Answers Questions	Total number of items
Topic 1	**Interactive lecture**	2	1	1	1	2	7
Topic 2	**Interactive lecture**	2	2	1		2	7
Topic 3	**Didactic lecture**	1	2	1	1	2	7
Topic 4	**Didactic lecture**	2	1	1	1	2	7
Topic 5	**Flipped classroom**	2	2	1		2	7
Topic 6	**Flipped Classroom**	2	2	1		2	7
Topic 7	**WhatsApp Discussion**	2	1	1	1	2	7
Topic 8	**WhatsApp Discussion**	2	1	1	1	2	7
Total	**Total**	**15**	**12**	**8**	**5**	**16**	**56**

Results and Discussion

Table 4 show how learners performed in end of semester examination. The total number of questions has been calculated by multiplying the total number of questions in Table 3 above by 25 which was the total number of students who sat for the examinations.

Table 4: How learners performed in end of semester examination

Teaching Methods used	Learners' performance in end of semester examination for each method						
	MCQ	True or False Questions	Identification of Concepts	Matching Items	Short Answers Questions	Total number of items	Over all percentage
Interactive lecture							
Total number of questions	100	75	50	25	100	**350**	**100%**
No. of Questions Passed	95	65	35	15	70	**280**	**80%**
No. of Questions Passed	5	10	15	10	30	**70**	**20%**
Didactic lecture							
Total number of questions	75	75	50	50	100	**350**	**100%**
No. of Questions Passed	70	62	38	40	80	**290**	**83%**
No. of Questions Passed	5	13	12	10	20	**60**	**17%**
Flipped classroom							
Total number of questions	100	100	50		100	**350**	**100%**
No. of Questions Passed	100	100	50		93	**343**	**98%**
No. of Questions Passed	0	0	0		7	**7**	**2%**
WhatsApp Discussion							
Total number of questions	100	50	50	50	100	**350**	**100%**
No. of Questions Passed	95	47	47	46	94	**329**	**94%**
No. of Questions Passed	5	3	3	4	6	**21**	**6%**

As shown in Table 4 student performed well in topics taught using flipped classroom seconded by WhatsApp Discussion. The WhatsApp is having higher pass rate that interactive lectures and didactic lecture this means WhatsApp is equally an effecting teaching methods. This in line with Rambe & Chipunza, (2013) study who also observed that WhatsApp supports knowledge sharing between students, and between students and teachers and hence help to improves student performance. In their study students named WhatsApp as a "communication, transnational platform" where they can express themselves freely in a non-restricted environment thus removing the low participation constraints characteristic of lectures. It is also in line with the finding of Maniar & Modi (2014) who finds out that students support learning through WhatsApp learning because it makes their lives easier since they can learn anytime and anywhere hence contributing to the overall success of teaching and learning.

Conclusion

The research findings have attempted to show that WhatsApp is equally an effective teaching methods. This finding can be used to urge that students have positive attitude towards using WhatsApp in education as it enables them to co-operate and work as a team which is not fully developed in the traditional classroom. However, as pointed by   Bansal, & Joshi, (2014) if WhatsApp is to become a common tool in teaching and learning, there will be need of further researches in identifying its educational and pedagogical goals as well as for concluding its theoretical and practical implications. This study has dealt with undergraduate students, particularly the 4th year medical laboratory Student; further researches should examine other study discipline well and also try it on large size class.

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