Using WhatsApp Discussion Groups in Learning at Higher Education Institutions: The Experience with Level 1 University of Rwanda Medical Students in Anatomy

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Abstract

Background: The e-learning practice is an interesting alternative to traditional teaching approach and its use is expanding as the development of ICT in diverse activities is growing. The WhatsApp, as popular way of communication may also be a good tool for learning.
Our study intended to demonstrate that WhatsApp can be an efficient tool in learning at Higher Education Institutions.
Methods: During the revision period of modules taught in second trimester 2017-2018, a WhatsApp Discussion group was initiated to allow students' access to their lecturer for clarification of some topics of Gross Anatomy 1 module and share academic information. Messages were recovered and analyzed.
Results: 312 messages were exchanged during 2 days of online discussion through WhatsApp discussion group. Among those messages, 31.1% were about 1 out of 14 topics of the module of Gross Anatomy 1. This topic (spinal cord anatomy) being the most complex, the prominence of exchanged messages on that topic showed that those students' chats were meaningful.
Conclusion: Our study showed that the online availability of the anatomy lecturer stimulates the online exchanges, and provides a fast opportunity for coordination of the whole class and an easy way of sharing illustrative diagrams related to the topic.

To be more efficient we suggest the following simple rules for the WhatsApp Learning Discussion Community: 1. Topics of discussion to be determined, 2. Online time of lecturer must be known by students, 3. Students to be focused on complex topics, 4. Messages to be concise and specific, 5. Online presence of the community to be short to avoid addiction.

Key words: WhatsApp, e-learning, anatomy, University of Rwanda, alternative learning tool

Introduction

The mobile phone penetration in the Rwandan population is increasing and it should be an opportunity in different domains including education.

The use of technology in teaching and learning must be dynamic and lecturers should have an open mind to use all available tools to facilitate the learning process.

The accessibility of a lecturer to his/her students is not easy especially when there are big classes; and students who may need further explanation from lecturer are facing challenges even if the lecturers may be willing. The use of e-learning aims at bridging those gaps.

WhatsApp has been a popular way of communicate without space barrier for family members, professional bodies, friends and other social groups.[1] Using this communication tool needs some "rules" to avoid abusing this opportunity. Those rules including agreeing on hours of chatting, to remain focused on the objectives of the group, to be concise and specific in writing messages and the availability of the lecturer.

In this paper, we are showing that WhatsApp group discussion is efficient in scientific and useful communication between the students and their lecturer and stimulates exchanges between students themselves. The aim of this paper was to share our experience on

the use of this platform to enhance e- learning while suggesting some guidelines to efficiently use this tool.

Methods

The anatomy modules are taught using multiple approaches: Team Based Learning (TBL) which is student-centered interactive teaching with a high level of student accountability for his/her study, traditional lecturing and practicals.

At the end of the teaching, students have 2 weeks of revision for all modules done during the trimester to prepare for the final grading exam. During revision the students requested to have some hours to ask questions and we used technology to meet their request.

A WhatsApp group was created by the class representatives of 2017-2018 level 1 medical, dental and pharmacy UR students who are registered to undertake the anatomy 1 module (back anatomy including spinal cord, lower and upper limbs anatomy).

The WhatsApp group was initiated on 30-4-2018, and students spent the whole day joining the group.
The next day on 1-5-2018 the group was functional and discussion on the group began.

Chats messages were recovered and transfer to word file using 11 steps:

1. Open the WhatsApp chat thread you want to make a document for (Individual chat or group conversation).
2. Click on the three dots (…) the upper right corner.
3. Click on "More" from the resulting drop menu.
4. Again, click on "Email chat" from the resulting menu.
5. A dialog box will appear prompting you to choose is your MS Word document chat should have media (pictures, voice messages and videos) with it once created or not. You can choose either of the two according to preference. In this case, we can choose "Without media"
6. The WhatsApp will sync the messages, create a word document and attach it on the email registered in your phone (Gmail).
7. Add any email address (If you don't want to send it to another email but to have it in your phone, add your own email).
8. Once again, click on the three dots (…) at the upper right corner and select "Save draft"
9. Now, go to the email drafts and open the most recently saved email draft (the first one).
10. Download the attached word document from the draft email
11. You can open the downloaded chat thread (conversation) from the file folder of the phone or transfer it to a computer.

The chat messages were analyzed to determine their relevance to the objective of the discussion group and its learning interest.

Results

The following table shows the telephone penetration in the level1 students undertaking the anatomy 1 module.

Table1. Mobile phone use among students

Class	Total number of Students	Students with telephones	Students with smart-phones	Students using WhatsApp
General Medicine and Surgery	92	92 (100%)	90 (97.8%)	90 (97.8%)
Dental surgery	28	28 (100%)	24 (85.7%)	24 (85.7%)
Pharmacy	86	86 (100%)	82 (95.3%)	82 (95.3%)
TOTAL	206	206 (100%)	198 (96.1%)	198 (96.1%)

Out of 206 students taking the anatomy 1 module and normally using WhatsApp, 144 (69.9%) students joined the discussion group.

From 1-5-2018 to 2-5-2018, 2 days of discussion on anatomy, 312 chat messages were exchanged.

From those 312 chat messages during the discussion allocated time, 97 messages equivalent to 31.1% of all messages were on one most complex topic of the anatomy 1 module which is the spinal cord. The organization of the teaching of this module has subdivided the whole module into 14 topics.

Many of the messages from students were aimed at clarifying some doubts on their knowledge rather than seeking new information. And when pushed to answer their own questions, students were able to correctly answer those questions.

Most questions raised by students were answered by their peers, and the role of the lecturer was only to support those answers to assure doubtful students.

From those 312 chat messages, 72 (23.07%) were delivered by the lecturer. It is also very clear that most of the chats were sent when the lecturer was available and active.

The messages from the lecturer were of the following 3 intentions:

Some were regulatory messages which requested students to be focused on the discussion objectives and not sending messages not related to the module of anatomy. Other messages invited students to discuss the questions raised by classmates. Another set of messages encouraged the good arguments by students and may elaborate on the raised questions (sample of messages).

Sample of exchanged messages

01/05/2018, 12:54 : We are very happy to get access to our prof anywhere. I would like to ask about the back and vertebrae. You know last time we have studied about the spinal cord especially its tracts. So how the decussation of the different tracts like lateral and anterior spinothalamic tract and the other tracts is done ?

01/05/2018, 13:05 – Prof Anatomy: Ask 1 specific and concise

01/05/2018, 20:22: 1. How do we relate spinal cord segments with vertebrae when descending down the column?

02/05/2018, 07:16: C5 spinal cord segment corresponds with C5 vertebra.T7 spinal cord segment corresponds with T6 vertebra (above T7 vertebra.L1 correspond to T10

02/05/2018, 12:50 - Prof Anatomy: The most important to know on this endless question is: cervical spinal cord segment corresponds with vertebral segment, thoracic, lumbar, sacral, coccygeal spinal cord segments are located at vertebral segments above. The more distal spinal cord, the more discrepancy, explaining the cauda equina.

02/05/2018, 12:54 - Prof Anatomy: Knowing that helps to understand that if you are suspecting an injury of spinal cord L2, you should request a thoracic spine X-Ray not a lumbar X-Ray which is normal in this scenario

02/05/2018, 15:41: read clinical oriented color atlas anatomy

02/05/2018, 15:42 - Prof Anatomy: Very good

02/05/2018, 15:52 : In book is two layers like BRS

02/05/2018, 15:52: Which one?

02/05/2018, 15:52 : Also in Clinical anatomy by Snell

02/05/2018, 16:32: No we are in discussion as class the one who knows it can help me

02/05/2018, 16:34: Another question: we know that to palpate popliteal artery is not easy but if you are asked so what is the exactly landmark of this artery?

02/05/2018, 16:40 - Prof Anatomy: Ask a same gender classmate to serve you as a model and palpate the popliteal artery on him and him on you. All of you may need to do that

02/05/2018, 16:46 : As tract transmit impulses to opposite side of brain this means right Spinothalamic tract is from left part of spinal cord.

02/05/2018, 16:51: at decussation point is where position of tract will change from right to left or vice versa

02/05/2018, 16:56 – Prof Anatomy: Exactly

02/05/2018, 17:17 - Prof Anatomy: Right spinothalamic will connect to left thalamus and then left cortex, any problem with this

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Discussion

The WhatsApp was created in 2009 by Brian Anton and Jan Koom, both Yahoo employees supported by an 8 million dollar investment by Major Sequoia, one of Silicon Valley's most fashionable investors' holding companies. Today, WhatsApp, which was acquired by Google for 1 billion dollars in April 2013, claims 400 million active monthly users.[1]

WhatsApp (from the English popular question "What's up?" meaning "What's new?") is an instant messaging application for smartphones. It allows users to exchange images, videos, and audio or written messages using their Internet connection.[2]

As the underlying purpose of WhatsApp is to facilitate communication, and education is nothing but communication, the interest of applying the WhatsApp in teaching and learning is logical and obvious.

This study shows that within only 2 days, 312 messages were exchanged in the WhatsApp anatomy learning discussion group. This is in agreement with the study of Rambe and Chipunza who observed that WhatsApp supports knowledge sharing between students, and between students and teachers.[3] Our study shows that most of questions raised by students were answered by themselves when encouraged to do so or by their peers. It is clear that WhatsApp platform stimulates exchange between students and builds confidence in their own understanding level. In our study and the Rambe and Chipunza study, it is demonstrated that WhatsApp allows students to express themselves freely in a non-restricted environment, thus removing the low participation constraints characteristic of lectures.[3]

The role of the lecturer in all e-learning activities is essential.[3] Our study shows that most of the messages were sent when students feel the availability of the lecturer. A study by Lu and Churchill (2014) stated that the teacher plays a principal role in guiding students in online lectures. This study showed that the social interaction that helps students construct and share knowledge is achieved through the pertinent role of the instructor; a decrease in the frequency of interactive messages in online communities is triggered when the online tutor or teacher is not present with the group in the online community.[4]

From our experience, we are suggesting the following simple rules to have a more efficient WhatsApp Learning

Discussion Community:
1. The discussion topics should be determined to avoid toxic exchange messages and loss of the learning environment.
2. Online time of the lecturer must be made known by students to avoid long waiting online presence of students, which may be annoying and costly if some students are using payable internet connection.
3. Students should focus on the topics which are complex to efficiently gain from the peers and the lecturer.
4. Messages should be concise and specific, this may allow accurate discussion.
5. Time of online presence of the WhatsApp Learning Discussion Community should be short to avoid additive behavior.

Conclusion
Our study has demonstrated that WhatsApp can enhance the learning by creating a conducive environment for students' free exchange of information. The presence of the lecturer stimulates the exchange and also assures the doubtful students.

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