Developing Learnability of Disaster Epidemiology and Emergency Response Subject Through Whatsapp and Google Classrooms

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ABSTRACT

This article discusses the subject development of Disaster epidemiology and Emergency Response through Whatsapp and Google Classroom. This is one of the mandatory subjects at the study program of the Master's Degree Program of Epidemiology at Faculty of Public Health at AndalasUniversity. I use a method of research and development (R & D) in this research. This result shows that the use both of Whatsapp and Google Classroom using chat instrument and voice messages may be used to support the flipped class particularly asynchronous model in developing the learnability subject of Disaster Epidemiology and Emergency response.

Keywords: Learnability subject, disaster epidemiology, emergency response

1. INTRODUCTION

The subject of Disaster Epidemiology and Emergency Response studies the implementation of epidemiology in case of emergency and as well as the epidemiology role in analysing the happening or public health problem in case of both crisis and disaster. Rapid Need Assessment (RNA), the challenge in practising RNA the disaster area, CASPER toolkit. The communication with policymaker as well as to understand surveillance during the disaster and the public health problem is taken a focal point of the study. The understanding of the epidemiology role in the disaster, as well as the epidemiology role in preparation to face the disaster, epidemiology role in response to a disaster, become the main point of discussion as well[1].

There are several problems in the achievement of the student learning result in case of both choice and implementation of the learnability method and evaluation of the student at the moment.

Despite the implementation of SCL, *blended learning* method either synchronous or asychronic technique is still not applicable yet. As for Z generation or millenial one, this method i`s rather boring. The students, in general, have averted to smart phone whereas the lecturers still make use of less creative slides [2].

The old method also comes across difficulty when there come mishaps. This is proved as the pandemic COVID19 took place. As Lucida stated (2020), a better part of the lectures run over heels conducting contact hour. Lucida also said (2020), even Unand Ilearn is not yet utilised maximally by its teaching staffs. Zoom and Skype for Business applications frequently used are still not yet embedded on unand.ac.id. site. This must bring about a serious effect to, among others, the webometrics achievement of AndalasUniversity [3].

Moreover, the lectures, too, do not take advantage yet of many updated books virtually. Even apart among them are given free of charge. Springer, for instance, offered two hundred good books that could be used, including the ones for the subject of disaster Epidemiology and Emergency Response.

As for assessment, it goes similarly. The students are evaluated at the mid-semester and at the final one at the end lecture only. The placement of essay test Semester Medial Test (SMT) and Final Semester Test (FST) just impress to measure their cognitive competence. When the cognitive aspect to be measured in Bloom's taxonomy, it is still the lowest aspect. Let alone it is done to post-graduate student demanded to be on competence level 9 in Dikti Graduation Standard. The post-graduate student is not to implement the theory any more but is to criticise and to revise. The achievement nine on the National Standard of Higher Education (NSHE) will be achievable when the alternative assessment guide is made.

The spread of final semester marks so far is still far from being ideal. Let alone the blended learning based alternative assessment is not yet in use. Apart from this, the SMT and FST in the form of written test (essay) still over-dominate them.

This subject contributes to the learnability achievement of the study program at Andalas University is sufficiently obvious. The *Learning delivery* at the post-graduate program of disaster Epidemiology and Emergency Response at the Faculty of Public Health shows an impression that it does not take advantage of blended learning. In response to such an attitude, the flipped is the answer. These research and program make flipped class run together with KKNI, CPL expectation, and graduation competence of the study program. The forms of course material already available so far in disaster epidemiology and emergency response subject is PowerPoint, e-book and e-journal. The model offered is providing the course materials of disaster epidemiology and emergency response subject, mainly making video and test form by the use of Whatsapp and Google Classroom applications embedded to http://fkm.ilearn.unand.ac.id/course/view.php?id=906.

2. THEORY AND METHOD

So far, the subject of Disaster Epidemiology and emergency response still implemented the method of a small group on discussion and peer learning SCL and KKNI based. Each group is given the related material according to RPS/RPB presented the group representative under the lecturer guidance as a moderator. The assessment is done to measure the learning achievement so far within a contact hour of disaster Epidemiology and Emergency Response subject is the one of "non-online". The cognitive aspect is still the orientation of evaluation. The model of assessment development already done is the *alternative ones* based upon both WAG and *Google Classroom* accompanied with the evaluation indicators (*blended learning rubric*) by synergising inter-cognitive, affective, psychomotor aspects, *hard skill*s, *soft skills* as well as academic norms [1].

Based upon the points mentioned above, research and development of disaster Epidemiology and Emergency Response subject will make use of blended learning under both synchronous and asynchronous techniques by considering SCL, CPL, KKNI, and expectation of Minister of Education and Culture over the Free Campus. According to Nizam in M.Thohir (2020) [4] the Free Campus is not only to pose the evaluation merely on the student's quality of knowledge, skill, and attitude but is also the processive result, product, and outcome of the learning. The student is expected to be able to access freely the materials given by the lectures by making use of the links available [5] [6]. There are two types of *blended learning* namely *flipped class* and *flex one*. In the *flipped class* method, the lecturer only evaluates the student's achievement outside class by the lecturer guide inside the class. this differs from the *flex one* making use of inside campus networking. The *e-learning* activity done is in form of both synchronous and asynchronous learning. The *Learning content* is among others materialised minimally in form of a four self-made video up loaden on LMS (*i-learn)* of UNAND. Attendant list, discussion forum, assignment, and quizzes will be put on LMS (*i-learn)* of UNAND, too. Similarly, the assessment method such *formative, summative assessments,* as well as the *e-learning* assessment component such as discussion, assignment, and quiz marks, and an *alternative assessment* are also put on the LMS (*i-learn*) of UNAND.

At any rate, Yibing Tan's, cs works. (2016) titled *Disaster Preparedness Among University Students in Guangzhou, China: Assessment of Status and Demand for Disaster Education* printed in an indexed journal *Disaster Medicine and Public Health Preparedness* in volume 11 edition 03, p.p 310-317 showed that spirit [7]. The article essence and spirit of the like was also written by Christal N. Davis, cs. (2019) in an article titled *University Students' Disaster Preparedness: A Focus*

Group Study The Follmer Group wrote in a journal *Best Practices in Mental Health*, volume 15 edition 2 p.p 29- 47. Several indicators are used to develop this disaster Epidemiology and Emergency Response subject [8].

As it is known, the study analysis *Community Vulnerability Assessment, CVA* and *behavior analysis* covering psychological, historical, social, economic, gender, ecological, human, demographic, and institu. Disaster epidemiology and Emergency Response subject. The aspects are needed in attempting to mitigate the victims. This subject, too, discusses local institution, public behavior, culture, and local wisdom involvement of comprehensive community-based approach either when facing disaster or post-disaster the real efforts done by the related parties and government at the moment the disaster takes place is also discussed in this subject. So is the disaster equipment and the effective ways to overcome and control the traffic flow as the disaster takes place such as COVID19, earth-quake, or tsunami invading are also discussed in this subject.

Leaving from the materials in the subject, thus, there are two blended learning methods namely flipped and flex classes. The Flipped class uses the networking outside the campus but it is still discussed inside the class. Flex one has a rather expensive cost for using campus networking. Both Flipped and flex classes have two techniques namely synchronous (same/simultaneous time of contact hour and different location) and asynchronous techniques (not same time of contact hour and different location/ non-simultaneous) [5]. This research result is much more concentrated on developing the flipped class method particularly asynchronous one.

3. RESULT AND DISCUSSION

The blended learning based learning model, chiefly, the flipped class with both WAG and *Google Classrooms* become a developing instrument of this subject. The links available either inside or outside campus are used. Several applications such as video, voiced slide (audio slide), *Whatsapp*, *Google Classrooms*, and other related links are also used. The followings are some results already achieved.

Even though the *Learning Management Systems* (LMS) application *interactive learning (i-learn)* platform have been available at Andalas University since 2007, these applications are beaten by both *Whatsapp* and Zoom in the era of COVID-19 pandemic

[3]. It reasonable why several learning media become the basis of development as to promote the I-learn in the coming semesters. Despite both Google Class Room dan *Whatsapp* one are still used to develop the disaster Epidemiology and Emergency Response subject, mainly, to promote the flex class under the asynchronous technique, however, the applications will be embedded on the site and I-learn of Andalas University. Moreover, several alternative assessments and field assignments guide, as well as the flipped class-based activity video, has also been promoted.

Other than making several learning video, both *Google Classroom* and *Whatsapp* applications become the target of development. The use of these two media do not only take easy accessibility but also take the hot spot cost into account. In general, both media are relatively cheaper. The utility of them is embedded on Andalas University site and i-learn will be fruitful to improve the Andalas University webometric and to respond to the challenge of learning delivery era millennial. *Blended learning* is a student's independent learning process in the online world.

One of the learning target models target at the even semester of 2019/2020 for Disaster Epidemiology and Emergency Response Subject at Post Graduate Program of Epidemiology, Faculty of Public Health, Andalas University can be seen in the following figures. These procedures have ever been tested, too, in several other subjects. These are the following directions of using both *Google Classroom* and WAG programs in the subject.

1. Material Preparation or Course *handout*

The first thing to be done is searching for material from various reliable sources such as *Center for Disease Control and Prevention, World Health Organization*, and some *chapters* from the English textbooks having relation to the subject topic to be given.

The next procedure is to set up an online class at the *Google Classroom* such as found in the following figures.
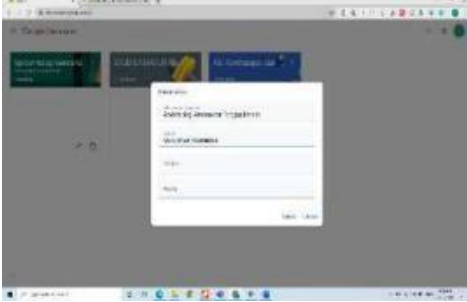
2. Make an online class at *Google Classroom.*

Figure 1 Process of the class making for Kelas Mata Kuliah Disaster Epidemiology and Emergency Response subject using *Google Classroom* media.

3. After the class is set up and give the *class code* to the students, the next procedure is to instruct the students in details through the class already made mentioned above.

Figure 2 To instruct the students to deal with the learning process

4. The course material previously prepared can be *uploaded* through the link yang provided on *Google Classroom*

Figure 3 To add the course material (*handout*) on *Google Classroom*

5. In this procedure, the details of an *assignment*, *quiz assignment, question, and* course *material* can be added.

Figure 4 The process of making a quiz with *Google Form* embedded on *Google Classroom.*

6. In this description, the lecturer's description will be immediately known by the students through the student's e-mail already registered in the class.

7. Next, the students can read the course material that is the *chapter* in an *e-book* and video link that is URL (*Youtube, slide presentation*).

Figure 5 The course material those are *textbook*, learning link via Youtube, and *assignments*

Apart from the *Google Classroom*, the use of *Whatsapp* program also could become a developing target. The followings are the procedures of a development model for Epidemiology disaster and Emergency Response subject through the *Whatsapp* program. They have been already tested in several other subjects.

1. The first step is to make a group in the *Whatsapp* application whose member is the student joining in the contact hour.
2. After the searching process, the making of slide presenting the course material, collecting the course material from the *chapter* of an *ebook*, article in the related journal and video link (URL link, Youtube or the one of self-made via screencast and others).
3. The course material and slide to be presented

from the student doing in group assignment will be uploaded to the *Whatsapp* Group.

4. The other students may comment on the video slide already presented by the student having to do group assignment such a following example
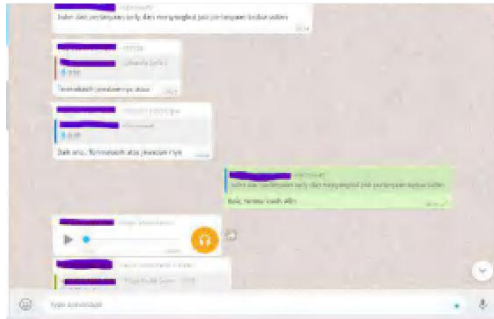

Figure 6 The process a synchronous contact hour via *Whatsapp*

5. The student's question about the topic lecture planned to use the *voice messages* to the targeted student's group.
6. The student's group forwarding the video slide of presentation targeted will respond to the question one after the other via *voice messages*.
7. *Whatsapp* is also planned to be an application to forward the student's assignment such as video, field assignment, and critical article analysis from a journal, and the others.
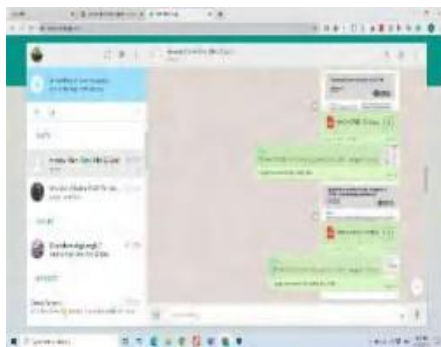

Figure 7 Giving the student the individual lecture assignment via *Whatsapp*.

8. Next is to forward the individual assignment to be directly forwarded to the lecturer e-mail.
9. The next job is to embed it with Unand LMS (I- learn) in the contact hour at will.

4. CONCLUSION

The use of both WhatsApp Group (WAG) and *Google Classroom* in the Disaster Epidemiology and Emergency Response subject is proved able to develop the blended learning based learning model, particularly, the flipped class under an asynchronous technique. Both applications are also used to do a formative evaluation and summative one functioning to promote the learning delivery while becoming the evaluating material for the lecturer to measure both success and effectiveness of the program planned so that the lecturer the policymaker set up a proper decision.

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