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by Sri Wuli Fitriati

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Abstract - The 21st century education is highly characterized by massive technology use known also as technology-enhanced learning. Researches on technology in education have uncovered that it helps students improve their digital literacy and language competence. Besides, it contributes to the effectiveness of English language teaching and learning activities. Use of learning management system (LMS) is also encouraged to support going green policy. These issues have been a trigger to explore more about the use of mobile applications for English instructional purposes. This paper aims to investigate use of mobile learning applications and how they are used to support paperless classroom pedagogy. Therefore, the research questions addressed are 1) What kinds of mobile learning apps does the teacher use for English instructional activities? and 2) How does the use of mobile learning applications contribute to paperless classroom pedagogy? To achieve the study aim, one English teacher of a vocational high school and 24 students were involved in this present study. The research data were obtained through observation, questionnaire, interview, and document review. In addition, Thematic Analysis by Braun and Clarke (2006) was employed as the data analysis method.

Key Words: mobile devices, learning applications, English instruction, paperless classroom

I. INTRODUCTION

The 21st century is marked with the extensive utilization of technology in all aspects of human life including the field of education [1] [2]. In the context of the 21st century education, teachers are encouraged to enrich themselves with technology literacy in order that they are able to transform it to the students [3]. Technology refers to among others devices such as desktop computers, mobile devices, communicative and collaborative resources and education software packages [4]. As technology develops so rapidly, mobile phones and handheld devices are more massively utilized for both private and academic use [5]. In educational context, the term mobile learning (m-learning) deals with use of mobile technologies for instructional objectives [6]. Referring to these two definitions of technology [4] and m-learning [6], the term mobile learning applications in the present study covers the use of both mobile devices such laptops and smart phones. In addition, it refers to learning applications and platform that can be accessed anywhere and anytime to facilitate teachers' teaching and students' learning.

Students known as Millenials, for some cases, are more advanced and frequently using technology such as cell phones, tablets, mobile applications and social networking sites [7]. They access information and communicate with their virtual communities only by pressing a button on their mobile devices such as smart phones and tablets almost all the time. Therefore, their use of technology needs to be controlled and directed for learning purposes. Otherwise, they will merely use them for private use such as gaming, gaining entertainment, socializing, doing selfies and posting photos on social media.

Use of technology for English instructional purposes has also been mushrooming [6] for it is acknowledged and proved to give positive contribution to both teachers and students[5]. Moreover, to fulfill teacher and students' needs of technology enhancing English instructions, mobile learning applications are continuously developed and upgraded [6]. In line with the increase use of technology in English language teaching context, a great number of researches have been carried out to explore the benefits of it. Edmodo as one of the learning management system (LMS) has been proved to encourage students' engagement in English writing instruction [8]. A similar research finding shows that the use the digital writing laboratory has been proved to be able to improve English learners' writing skill [9]. In addition, ICT-ELT integration was also admitted to facilitate English instructional activities in many ways [10].

The above description of the previous researches has presented evidences that technology use enhances the effectiveness of English instructions. However, studies focusing on technology use in English instruction giving benefits to lessen paper-based classroom activities are under researched. Therefore, to fill the gap, the present study is aimed to explore how the use of mobile learning applications as the focus of this study contributes to paperless classroom pedagogy.

II. METHODOLOGY

The present study is intended to explore the use of mobile learning applications and how they are utilized to support paperless classroom pedagogy. Therefore, this leads me to investigate this phenomenon by adopting qualitative descriptive research with a case study method. The research data were gained through classroom observation, interview, questionnaire, and document analysis. Participant observation was employed to gain a detail description about what kinds of mobile applications and how they were used by the teacher and students for instructional activities. A questionnaire was designed and distributed to both the teacher and students to explore more about the use of technology in their English class. In order to attain information about how the use of mobile learning applications support paperless classroom pedagogy, a set of interview questions was delivered to the teacher. In addition, lesson plan as one of the instructional documents was also observed to see that use of mobile applications was also planned in advance.

Technology	Teachers	Students
Devices	Computer, Laptop, LCD, Cell Phone	Computer, Laptop, LCD, Speaker
Learning Platform	Edmodo	Edmodo
Mobile Learning Applications	Google Drive, Google Slides, Google Docs	Google Drive, Google Slides, Google Docs, E-dictionary, Google Translate, Google Images, Google-dictionary, Wikipedia
Learning Sources (Web Links)	Bookbox.com; really-learn English.com; dailyenglish.com	Bookbox.com; really-learn English.com; dailyenglish.com
Media	Power Point, audios, videos, pictures, photographs, images	Power Point, audios, videos, pictures, photographs, images
Social Media	Youtube; Email	Youtube; Email
Others	Computer laboratory, The Internet	Computer laboratory, The Internet

The participants of the study were an English teacher of a vocational high school and his respected 24 students. This male teacher has obtained his master degree in English education and used to study in a vocational high school majoring in Information Communication Technology. The English teacher has a good ability in using technology and commonly uses it to facilitate learning. The class is majoring in Automotive Engineering containing of 24 students; 2 female and 22 male students. They come from all over Central Java and live in the school dormitory.

Data analysis was carried out by employing Thematic Analysis (TA) proposed by Braun and Clarke (2006) [11] The use of the method was intended to search for the similarities of the data gained through the previously mentioned instruments. The analysis of the data was done through several stages including 1) observing and familiarizing self with the collected data; 2) coding the data; 3) searching for themes; 4) naming themes; and 5) the producing report.

III. RESULTS AND DISCUSSION

The research was aimed at investigating kinds of mobile learning applications integrated into the teaching and learning of English and explaining how the use of the applications supports paperless classroom pedagogy. The following sections present the results of the study.

A. Mobile Learning Applications Integrated into the English Instructions

Based on the data gained through the document review, observation, and questionnaire, it was found that the teacher has utilized technology to facilitate students learning English. Kinds of technology used by the teacher and students can be seen in Table 1 below.

Table 1. Technology Used in ELT

Table 1 presents all types of technology utilized by the teacher and students. This indicates that they already employed technology in teaching and learning English. The English class was carried out in the computer laboratory which was equipped with good internet access. Each laboratory was completed with computers, laptops, LCD projectors, and speakers. Based on the interview with the teacher, use of the laboratory was due to the fact the students were not allowed to bring and use mobile phones to school. Therefore, to facilitate students using technology during class hours, the school has provided 7 computer laboratories and one language laboratory with 24 booths each. The school also supplied the students with free internet access but it was limited to only 45 minutes in a day. Time limitation for accessing the internet was intended to hinder students from exploring unrelated information with the school subjects. Besides, to support students completing school assignments, they could make use of computers and laptops available in the administration staff room.

As the platform to support students learning the teacher made use of Edmodo. By this system, the teacher could store teaching and learning materials, assignments, administer quizzes, and carry out learning activities. In addition, to facilitate teaching and learning activities inside the classroom, the teacher employed mobile applications including Google Drive, Google Slides, and Google Docs. Besides, the students explored information and additional learning materials through E-dictionary, Google Translate, Google Images, Google-dictionary, and Wikipedia.

In addition to using text books, both teacher and students used materials downloaded from the internet such as Bookbox.com; really-learn English.com; dailyenglish.com. These were to enrich instructional materials available in the text books and fulfill the students' needs. Besides the management system Edmodo, the teacher also used

multimedia such as Power Point, audio-video media, pictures, photographs, images to help deliver instructional materials. Social media such as Youtube and Email were also employed to obtain more learning materials and to exchange important information as well as to publish and submit the students' work.

B. Contributions of Mobile Learning Applications to Paperless Classroom Pedagogy

As previously mentioned, the English instructions has been facilitated by the use of technology including varied devices and applications. In addition to using Edmodo as the learning platform, the teacher also employed Google Applications including Google Drive, Google Docs, and Google Slides to facilitate learning activities. Edmodo provides teacher and students a room to interact and communicate in an academic context.

Based on the interview result, the teacher mentioned that the most influencing factor of working with Edmodo was the students' characteristics. The students addressed as Millenials were considered to be more advanced in applying technology for private use including operating technological devices, gaining information, communicating, and gaming. In addition, they had enough background knowledge about Edmodo use. This was a kind of fortunate that the students of a vocational high school got a compulsory course namely Digital Communication System and Edmodo was one of the discussion topics. Therefore, this was complementing each other and gave benefits to other content teachers who had high interest in working with technology.

The second was the institutional characteristics. To facilitate teaching and learning processes the school has seven computer laboratories and one language laboratory. Besides, to fulfil the needs of internet access for instructional purposes, the school has provided the internet connection with the bandwidth of 100 Mbps. This was considered enough to manage the necessity of accessing the internet for teaching and learning processes conducted in the computer laboratories.

The third was its' technological characteristics. The teacher tended to utilize Edmodo for it is free of charge and has friendly-user features which are easy to operate. This looks like Facebook that the students are already familiar with. This is in line with the statement that Edmodo is developed very modestly similar to Facebook and gives opportunities for teachers, students, and parents to optimize instructional activities [8]. The students can easily access it by simply logging in using their given class code to join their existing class. They can read learning materials, do learning activities, complete project work and assignments anytime in and outside classroom. All learning materials, assignments, and the teacher's feedback are distributed through the system.

The fourth was personal characteristics. The teacher himself has good technological competence and positive attitude towards technology use for instructional activities. His background knowledge and skills of using technology has also become a trigger that he employed technology in his English class. This is in accordance with the previous study that teachers' use of technology for instructional purposes was stimulated by their self-motivation, interests, and positive attitude towards ICT [10].

Therefore, besides using Edmodo as the learning platform, the teacher also made use of Google Applications. Google drive was utilized to store and deliver instructional materials and media in the form of Power Point Slides. The aim of using Google Drive was to facilitate the students to directly connect to other Google Applications such as Google Docs and Google Slides.

Google Docs was used as the learning media in writing activities. The students were assigned to complete a writing biography task of a famous person in Google Docs. Instead of doing a paper and pen writing activity, the rationale of using the application was that first it was much easier to edit and revise. The students could easily look back at the learning materials posted on Edmodo. It was also more practical for the students in terms of searching more writing sources including the characters of the people that they wanted to write about, vocabulary, and grammatical structure of the sentences. Besides, they could also easily do a click on Google Images to search for photographs of their writing object, copy and paste on the page of their writing. This is in line with the research finding mentioning that when the students are given opportunities to use the digital writing lab for writing activities, they easily explore materials from the internet. Besides, they can use various tools for editing, revising, proofreading to complete their writing product [9]. Another practicality for using Google Docs as the media for writing activities was that while the students were writing, through his webpage the teacher was able to directly monitor the students' progress of writing and give feedback [12]. Finally, when they accomplished the tasks, the students simply sent its link via Edmodo so that they could see each other's work.

Google Slides was used by the students to design presentation materials and medium for presentation. This application enables students to collaborate on a project work. They could still work together to edit and revise their presentation slides in different place and time onlinely. Use of Mobile learning applications such as Edmodo and Google Applications gives benefits to some parties including the institution, teacher, and students. The school can lessen the number of papers needed by the students to complete the tasks and tests. Meanwhile, on the part of the teacher, he can minimize the time consumed for correcting and scoring the students' work for the application can do much faster scoring. On the students' side, they could also decrease their use of paper and notebooks. They can store their learning materials on their online learning applications so that they can retrieve it anytime and anywhere. This is in agreement with [12] saying that "A paperless classroom allows students access to course contents 24 hours a day 7 days a week and 365 days a year from anywhere in the world." Hence, use of the learning applications has contributed to the paperless classroom pedagogy.

IV. CONCLUSIONS

To summarize, use of technology-enhanced learning should be promoted among teachers and students. Not only

does it contribute to teachers' teaching and students' learning but also to the going-green policy. Technology use for instructional purposes allows teachers and students replace paper-based activities by technology-based modes. Hence, it is able to minimize the consumption of papers and results in contribution to paperless classroom pedagogy.

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