ICT and Project-Based Learning in a Rural School: an EFL Context

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Abstract—This paper presents a description of a technology-based English learning in an Indonesian context project completed by rural high school students. It employed a descriptive qualitative research method in a class consisting of 35 students. The data were collected from videotaped observations, interviews with participant representatives, and questionnaires administered to all participants. The project-based instruction (PBL) was implemented in five sessions, with videos uploaded to YouTube as the final product. The paper revealed that the students completed the project satisfactorily and showed their positive attitudes towards the assigned project. Moreover, they claimed that learning using PBL was challenging, motivating, engaging, enhancing their English, and increasing their creativity. During the video-making phase, some problems were encountered; however, they considered them as challenges to become better at using English. To conclude, it is advisable for EFL teachers to implement PBL integrating ICT. Additionally, at the end of the research, some recommendations for future similar studies are proposed.

Keywords—ICT, project-based learning, English as a foreign language, rural school

I. INTRODUCTION

In this Industry 4.0 era, EFL educators, particularly those who teach high school students, are challenged to design courses for their twenty-first-century learners as they were not only supposed to be great at their academic language skills but also their technological mastery. Nowadays, teaching English as a foreign language is not merely about providing an environment that fully supports them to practice what they have learned in their English classes, but also promoting the use of technology that can promote more exposures on English materials. Given the above, teachers should possess the ability to facilitate and scaffold language learners so that their students will advance their English and technological skills, particularly in information and communication technology (ICT), even for those living in rural areas.

The Educational Testing Service J. Ainley [1] indicated that ICT literacy is “using digital technology, communications tools, and/or networks to access, manage, integrate, evaluate, and create information in order to function in a knowledge society.” Consequently, literacy is not merely about using digital technology to access data but also interacting with others through a knowledge society. To maximize their English language development, ICT can be infused into the teaching and learning system, particularly in the English subject for high school students.

In the Indonesian context, English is one of the foreign languages listed in the curriculum that is mandatory to be taught to learners, starting from the primary level. Its overall aim is to produce learners who are able to communicate in both oral and written forms in English. In addition, at high school level, the goals of English teaching are the development of learners’ communication skills in oral and written forms, which include the language four skills [2]. The curriculum also suggests putting the twenty-first-century skills and higher-order thinking skills in students’ learning [3]. However, English learning for high school students is restricted by 100 minutes or two-hour lessons in a week.

Nevertheless, students’ interest in studying English is still low [4], and many students regarded that English is demanding to master [5] because they do not have many opportunities to practice what they have learned outside the classroom. In addition, the exposure of English in their class, which was restricted to only two hours per week, may demotivate them to learn English in the classrooms hence resulting in less satisfactory English teaching and learning ([16], [7]).

In this context, one alternative way to design an EFL course is by adapting a project-based learning method (hereafter abbreviated as PBL), with the language learning being guided by a meaningful project to fulfill the learning objectives. Admittedly, PBL is one of the teaching methods suggested to be implemented in the classroom (see Permendikbud Tahun 2016 No. 22/Appendix of the Ministry of Education and Culture Regulation 2016 No. 22 published by the Ministry of Education and Culture of Indonesia). Regrettably, the curriculum maker only proposed the method without providing procedure of its implementation. For this reason, this research has set out to explore the implementation of PBL integrating the ICT in the English classroom of a rural high school in West Java Indonesia and students’ perceptions on the teaching method.

Furthermore, in the Indonesian EFL context, the result of this research is anticipated to significantly contribute to the theory, educational practice, and professional practice. Concerning the theoretical importance, this research is expected to enrich the TEFL literature, particularly on the implementation of PBL integrating ICT projects. Regarding instructional practice, this research may provide information...
related to PBL and ICT that can be implemented in the classroom. Meanwhile, professional English teachers are supposed to be able to develop materials and teaching strategies that enhance English learning for students.

II. LITERATURE REVIEW

The following will explain the literature appropriate to the problem statement that covers the ICT explanation and the skills of high school learners in the twenty-first-century and PBL.

A. ICT and the 21st-century skills of high school students

Literacy is not the only form to use digital technology to access information but also to communicate with others by offering some information to benefit others. Soft skill in ICT is one of the vital skills that high school students should possess in this era. Other 21st-century skills required by learners are digital literacy, problem-solving, critical thinking, creativity, communication, collaboration, and cultural awareness (“8 skills a 21st-century student should master at school” [18], [9], [10]).

Some prior studies on ICT in educational settings have shown that ICT has been able to develop teaching and learning in a more efficient manner [11]. In the context of language learning, ICT has enabled learners to acquire their language skills as ICT can mediate learners to communicate with others around the world [12]. In addition, the use of ICT in the classroom could improve the skills of the twenty-first-century students, particularly in their critical thinking, problem-solving, communication, and collaboration ([13], [14]). However, in integrating ICT in teaching and learning, participants need a role model that can demonstrate to them how to use technology efficiently [15].

B. Project-based learning

Project-based learning (also known as project approach, project-based instruction, project method) is an authentic learning method that facilitates learners to learn through projects [16], [17], [18]). This method provides students the opportunities to plan, implement, and evaluate their own project that has real-world objectives beyond the classroom [19], which means that they deal with real issues in a meaningful context ([20], [21], [22], [23]).

Furthermore, there are many benefits that students may gain if PBL is applied in their classroom:

1. Facilitating students with challenging, motivating and engaging projects ([24], [20], [25], [26], [18]);
2. Assisting students to develop initiative, confidence, and responsibility [27];
3. Encouraging students’ creativity ([22], [20], [28]);
4. Promoting students’ critical thinking ([20], [14]); and
5. Allowing students to develop their skills and abilities [28].

Moreover, previous researchers have proposed some phases in the implementation of PBL with different names and numbers. Nevertheless, the phases proposed by J. H. Helm, and L.G. Katz [29] and L.G. Katz, S. C. Chard, and Y. Kogan [30] were used for this research because the stages are clearly described and can be practically implemented in the research site. However, another phase was added to the teaching program namely the evaluation of the project. It was used to assess the entire project process; thus, the next related projects will be much better implemented by the teacher and accomplished by the learners. The stages are elaborated as follows.

Phase 1: Beginning Project

This first phase is the topic selection in which the students and teachers considered the topic of inquiry. In this research, the project’s main topic came from the basic competency stated in Lampiran Permen Dikbud No. 24 Tahun 2016 (the Ministry of Education and Culture's Appendix No. 24 of 2016) on analytical exposition text. The project was to make a video related to analytical exposition text. After the students had enough information from the teacher about the video project, the students worked in groups and defined their topic for the video.

Phase 2: Developing Project

This phase is also known as the phase of the investigation. Students attempted to explore topics from their surroundings, in a relevant context using first-hand resources [31]. They began doing the project in groups by planning, discussing, and preparing their tangible product in the form of video. They made and edited the video based on their group’s project topic to be uploaded to their YouTube Channel.

Phase 3: Closing Project

In Phase 3, the students presented their project work, which can be in the form of product presentation, performance, or display. In this research, the students exhibited their video uploaded to the internet, hence worldwide individuals can watch.

Phase 4: Project Evaluation

As said previously, this phase was applied to evaluate the overall project process; thus, the teacher could apply better teaching method in the next projects, and the students could do the project well. They then addressed what had occurred while doing the project. The evaluation method also covered a quiz on the basic competency involved in the project, which was analytical exposition text, since the curriculum requested the teachers to provide the students' assessment on the competency.

Some previous studies indicated that through the use of educational technology, PBL enabled students to improve their EFL learning by accessing authentic materials from a variety of internet tools [32]. In addition, D. Kavitha, and D. Anitha [14], and M. S. Khan, I. Khan, H. M. Ismail, R. Khattak, and R. Jan [33] stated that PBL and ICT allowed learners to improve their comprehension and performance.

III. METHODOLOGY

The present research performed a descriptive qualitative investigation of the research question by gaining an in-depth understanding of the use of ICT and PBL in a rural school. Specifically, it conducted in one cohort of 35 students grouped as one class, selected through purposive sampling, which was also selected based on research goals and population characteristics [34]. The school where the research was undertaken was situated in a rural area of West Java,
Indonesia. Regarding the ICT, the school had effectively assisted the students by enabling them with a computer lab and internet connection to promote their technological improvement. However, there was still internet connection issue in the classroom, hence, the students used their digital devices to get proper internet connection.

This research was conducted in five meetings to complete the video project. As mentioned in the literature review section, the project used three phases from L. G. Katz, S. C. Chard, and Y. Kogan [30], in which one meeting was used for Phase 1, two meetings for Phase 2, and one meeting for Phase 3. Additionally, one more project evaluation session was added to evaluate the entire steps and processes before, during, and after the project was accomplished.

Regarding the data sources, participant observation, questionnaires, and interviews were the instruments used to gather the data in researching the research questions. Participant observation was aimed at obtaining an understanding of and through interactions between the participants at the research site [35]. In this research, the researchers involved one high school teacher to teach ICT to the students using PBL. Five meetings were carried out to complete the research, and all processes in the sessions were recorded and then transcribed in the teacher’s journals. The data from this observation were evaluated and triangulated, along with other results from the other instruments.

The second instrument was the questionnaires, which were delivered to all participants at the end of the evaluation session. They were aimed at obtaining the students’ perception of PBL implementation in an ICT project in their classroom. Seven questions were asked in the questionnaires, and the participants were required to write their responses as the questionnaires were open-ended. Once the questionnaires were submitted, the responses were coded and classified to support the other data collected from the observation and the interviews.

The last instrument was an interview to understand the significance of the views, beliefs, motivations, and/or experiences of the participants in particular cases [36]. The interviews were conducted to five students as representatives of the research subjects consisted of two high-achievers, one medium-achiever, and two low-achievers in the classroom. The interviews could be classified as a semi-structured interview, which required a list of particular issues related to the topic under investigation as the directed questions but could be tailored by some other issues during the interview [37]. The interviewees were asked on six main issues relevant to the video project.

IV. RESULT AND ANALYSIS

This section discusses findings from the study site that have been supported with related literature on ICT, PBL, teaching English as a foreign language, and others. As noted above, this present research has set out to explore the PBL on an ICT project at one of the high schools in West Java, Indonesia, covering its process and perceptions of students towards teaching and learning.

A. ICT project in the classroom

This project was the students’ first experience in doing the task that required them to maintain contact with technology in terms of the ICT classroom assignment. Furthermore, as mentioned above, this research used the phases suggested by L. G. Katz, S. C. Chard, and Y. Kogan [30], and a further step was added by the researchers, which was the evaluation of the project phase. Starting from discovering the ideas, doing the project, presenting the product, and evaluating the project work were accomplished by the students, which was facilitated by the schoolteacher and the researchers. The phases are elaborated in the following.

Phase 1: Beginning Project

Phase 1 of the video project was performed in the first meeting and was conducted in one session. In this phase, the teacher addressed the project they were going to conduct, including introducing the project, reviewing relevant literature based on the basic competencies stated in the curriculum that need to be mastered, and discussing topics in each group. The students were introduced to the video project to have a clear interpretation of what they needed to do in conducting the project. After that, they were encouraged to discuss the project based on the basic competency, analytical exposition text as the project’s main topic. Two video examples on the text of the analytical exposition were provided to the students so they could imagine how their videos would look like.

The students were divided into eight groups consisted of four or five members in each group. This group division was selected after the researchers discussed with the schoolteacher by grouping high-achievers, medium-achievers, and -achievers of each group. This group work was created to assist the students to work cooperatively, so they could share with their group members until finishing the project. It is consistent with one of the PBL characteristics that promote cooperative and collaborative learning ([18], [28], [30]).

Phase 2: Developing Project

This phase was undertaken in two meetings. In this phase, the students began discussing the video based on the topic they had selected in the previous phase. They were encouraged to explore the topic by finding the sources from the school library, the internet, and the people around them who were considered relevant to be involved their project. Additionally, they were encouraged to take advantage of applications or software on their smartphones and laptops to edit their videos. They were also motivated to use the applications that provided them great possibilities to practice their English as they would present their videos in English. By doing so, the students were subconsciously invited to elaborate as many sources as they want to, to arouse their initiative and accountability in completing the project, to increase their ICT skills, and to develop their critical thinking and creativity. In the same vein, some previous studies also showed that PBL helped learners develop their initiative, confidence, and responsibility [27]; encouraged their creativity ([20], [22], [28]); and promoted their critical thinking [14].

They shot and edited video outside the classroom hours after having a discussion with their peers in groups that resulted in a video planning. These activities reflected the PBL characteristics in which the learners asked some questions, discussed the topic, and decided how to perform the inquiry of their project based on their personal interest,
also allowed the students to interact with real problems in their final product. It is in line with the notion that this project in producing the video. Many of them were new with difficulties they found during their video making. To clarify, (It's difficult to edit the video, Ma'am)." It showed the project was challenging, motivating, and engaging ([25], [26]). However, some of them argued, "Project was rather difficult. However, they could finish their video and upload it on their YouTube Channel. These responses proved that doing a project was challenging ([18], [20], [24], [25], [26]).

Phase 4: Project Evaluation

The project evaluation began with reviewing the video-making process conducted in the preceding four weeks. When the teacher asked them about the project, they responded positively by saying: “Bagus! (Great)”, “Bikin lebih kreatif, Bu! (It made us more creative, Ma'am)”, “Keren! (Cool!), etc. For this reason, it can be stated that the students enjoyed and were engaged with the learning process. Accordingly, the project was challenging, motivating, and engaging ([25], [26]). However, some of them argued, "Sisah ngeditnya, Bu! (It's difficult to edit the video, Ma'am)." It showed the difficulties they found during their video making. To clarify, the technical challenges were found since it was their first project in producing the video. Many of them were new with the video editing process, but they could finish the video as their final product. It is in line with the notion that this project also allowed the students to interact with real problems in a meaningful context ([20], [21], [22], [23]).

The assessment of the video was based on a video presentation rubric from lambenglishmontana.wikispaces.com, which consisted of five components: (1) content and organization, (2) usefulness, (3) creativity, and elements of design, (4) mechanics, and (5) oral presentation skills. To appreciate their works, a reward programme was carried out. A reward programme was carried out. The students received some exposures from the authentic materials from different sources, whether from printed sources or from the surrounding resource individual, when completing their video project since they had to attract many viewers of their videos that they uploaded to YouTube.

B. Students’ Perception of ICT and PBL in their Classroom

The students' responses were elaborated in following subsections general opinion on ICT project and PBL, improvements in English skills, and difficulties during the learning process.

1. Opinion on ICT Project and PBL

The first question on the questionnaires was about the students’ responses toward the video project. Almost all students responded to the ICT project in positive ways. They perceived that the project was good, enjoying, and challenging, which can be seen from their comments.

“Mantap, karena kita dapat keraksi di film” (Really great, because we can develop creativity in film making) (Questionnaire item 1, answer 2).

“Menyenangkan, bisa belajar bahasa inggris” (enjoying, we can learn English) (Questionnaire item 1, answer 24).

From the excerpts above, it can be concluded that most of the students gave their positive responses to the implementation of PBL in the ICT project. It shows a similar result with the interviews which was dominated by positive responses from the interviewees, and it can be seen from the excerpt below.

“Video project ini menambah pengalaman saya terutama dalam hal kreativitas karena di sini membuat video. Jadi seolah-olah semenarak mungkin membuat videonya dan semenarak bagaimana subscriber dan penonton bisa tertarik..."
2. Improvement in English Skills

Concerning the development of the participants’ English skills after the implementation of PBL integrating an ICT project in the classroom, almost all students perceived that their English skills were improved. To clarify, 20 students stated that their English was developed relatively, and 14 others noted that a little improvement was reached in their English skills. It can be noted then that the project could facilitate the students to be better in their language learning. The result in line with the previous studies conducted by H. Dewi [47], L. Miller, C. A. Hafner, and C. N. K. Fun [48], and D. Yang, and N. Puakpong [49], which claimed that PBL could help students in developing their English skills. This improvement might be caused by the students’ involvement in planning, implementing, and evaluating the project before the final product was uploaded to YouTube. Therefore, up to this point, the project provided many benefits to the students since their inquiry learning was facilitated, which was great for their developing skills.

3. Difficulties during the Learning Process

Regarding the challenges found along the learning process of the video project, the students perceived, based on the questionnaires and interviews results, the difficulties are:

1) Group working. Almost half of the students (40% of them) claimed in the questionnaires that they faced some difficulties in the group work. They argued that it was hard to work with their group members, especially in matching their time to work together outside the classroom. Besides, the students stated in the questionnaires that they were not comforted in having certain friends in the group since they did not give any participation in the project doing. Similar to the study conducted by S. Aldabbus [40], the participants lacked skills in collaborative and cooperative work made some certain students dominated the project working. Hence, although PBL facilitates collaborative and cooperative learning ([18], [28], [30]), some students were not comforted when they came to the team working.

2) The video-making process. Thirteen participants stated that they found some difficulties in creating and editing the video. They noted that it was a challenging project since it was their first time in doing an ICT project, especially in the English subject. Consequently, they needed more time in doing the project. Nevertheless, they could finish their video and upload them on their YouTube Channel. These responses supported that doing a project was challenging ([18], [20], [24], [25], [26]).

3) Others. Some other students stated that their difficulties in doing this project were in the use of English in the teaching and learning process. Since it was in an EFL context, the students got the explanation in English, and they had to make videos in the target language as well. The use of L1 was also provided but in a little portion. The use of target language in classrooms was also benefiting the learners, though, as it is stated in the studies conducted by I. N. Hidayati [50], S. H. T. Sa’d, and Z. Qadermazi [51], and M. Shabir [52].

V. CONCLUSION AND RECOMMENDATION

This research attempted to explore the implementation of PBL integrating ICT in a rural high school. It employed a descriptive qualitative method involving a cohort of 35 students by using observation, the interviews, and the questionnaires to gather the data. The findings revealed that the students could do and complete the project satisfactorily by uploading the videos to YouTube as their final products. They also showed their positive attitudes towards the project. Although they encountered some problems during the video-making process, they took them as valuable challenges to improve their use of English. Nearly all of them perceived that after doing the project, their English was better. After planning, videotaping, editing, and uploading the video to YouTube, they student perceived their creativity increasing. The students considered that the ICT project aided them in enhancing their English skills in the same vein as previous research undertaken by L. Miller, C. A. Hafner, and C. N. K. Fun [48]. Moreover, the results of this research also share similar results with some previous research, which stated that PBL was challenging, motivating, and engaging ([20], [24], [25], [26]), helped students develop their creativity ([20], [22], [28]), enhanced their critical thinking ([14], [20]), developed a range of skills and abilities [28], and allowed them to deal with real problems in a meaningful context ([20], [22], [23]). To conclude, it is worthwhile for EFL teachers to implement PBL integrating ICT in their classroom.

The following are some proposed recommendations developed based on the research results.

1) PBL integrating ICT should be implemented by EFL educators as it offers effective and efficient teaching and learning;
2) In planning a project work, teachers should consider the allocated time;

3) Teachers should tightly group the students and help them all to perform their utmost in the working group; and

4) Future researchers interested in this conducting similar research may implement PBL in different settings and contexts.

REFERENCES


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