

The Implementation of Project Based Learning Connected with Digital Apparatus to Increase Students Speaking Competence of Madrasah Aliyah Negeri (MAN) Simalungun Regency

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ABSTRACT

Project based learning (PjBL) has become one of the innovative trends in education to create an exciting teaching-learning environment in English Speaking Class. This is one of the changes to the conservative teaching where the teachers become the only resource of knowledge to construct their students' English speaking competences. This study aims to develop implementation Project Based Learning to increase students speaking competence. This study uses Four D model procedure. To enhance students speaking competence, this research also develops a syllabus, lesson plans and digital apparatus. This research investigates the implementation of PjBL by using digital apparatus which is connected with internet to increase students speaking competence of Madrasah Aliyah Negeri (MAN) Simalungun regency, North Sumatera Province, Indonesia. The validation of PjBL was carried out by three validators of each material experts and media experts. The feasibility study of PjBL products shows validity of 85% with very valid criteria. The result of the researches obtained an average score of 90%. The syllabus obtained an average score of 84%, lesson plans obtained an average score of 84%, and digital facilities obtained an average score of 85%. In conclusion, PjBL increases 90% students speaking competence supported by YouTube. For further research, the combination of PjBL with other digital facilities will bring more access to support speaking competence not only in classes but also digital language.

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1. INTRODUCTION

Teaching communities declared that the main factor to achieve the goals of teaching learning system lies on the teacher competences. The communities as Professional Learning Community (PLC)

and *Komunitas Guru Belajar* (KGB) are examples which organize development programs for professionalism as well as competencies to ensure teachers services Prawitasari & Suharto, (2020); Farhan et al., (2021); Safrizal et al., (2022). The communities tend to support creativity and innovation in teaching methods as online technology teaching methods and face to face teaching methods as an integrated learning system Bidarra & Rusman, (2017); Rasmitadila et al., (2020); Rahiem, (2021). The teachers who are constantly updating and refinement in knowledge and skill are having qualification as good characters as teachers (Yan Dong, Xu, Chai, & Zhai, 2020). They serve teaching professionally and also competencies as: social competence, pedagogic competence, characters competence and leadership to create convincing and learner friendly environment for each of the student Osher et al., (2016); Darling-Hammond et al., (2020). Teachers are the main actor creating critical thinking, communication, creativity and collaboration skills that students need for their study. As it is impossible for a teacher to have all the competencies as required, having responsibility and motivation as a teacher become the prime component which ensure process of a professional teacher inside and outside of the classroom Aslam et al., (2020); Lawrence & Nagashima, (2020). Competent teachers will automatically equip themselves with any competency to support their teaching as knowledge and skill through trainings, study and experiences towards proficiency. These are efforts to find the better creativity in teaching methods. One of the teaching methods that enable students to explore their learning capability scientifically as Project based learning (Almulla, 2020).

As a teaching method, project based learning provides a learning model that organizes learning around projects (Yamin, Permanasari, Redjeki, & Sopandi, 2020). This learning model is definitely based on challenging questions or problems that involve students in design, problem-solving, decision making, or investigative activities. These possibilities give students more opportunities to learn relatively (Raes, Detienne, Windey, & Depaepe, 2020). Every student has an opportunity to solve interdisciplinary problems by themselves then they can respond to any possibility of educational affairs outside the school environment in order to enrich their learning experiences (Fauzia & Kelana, 2021). To achieve the instructional goals, students' perceptions achievement, understanding of learning, studying habits and social-communications in teaching and learning environment are some of the determining factors (Kang, Zhang, & Yoo, 2020). In the context of educational learning methods, science and technology play its important roles in all level of educational units as: preschool, primary, junior high school, senior high school and university. Every school or university needs to develop its students in terms of scientific knowledge and promote them make thinking critically, doing empirically and broadly must be able to provide stimuli for the development of society at large (Yenan Dong, Zhu, & Li, 2021). As teaching system is changed and learning achievement target focuses on how teachers and students applying online technology, standard of professionalism and competencies are identified with how and what technology being applied (Fauzi & Sastra Khusuma, 2020). The combination of new creation teaching methods today came up drastically in the era of disruptive technology that was also triggered by the pandemic Covid-19 (Lestiyawati, 2020). Educational learning system as teaching methods and media changed ways of communication in world of educational system (Cicha, Rutecka, Rizun, & Strzelecki, 2021). As the result of the condition, the presence of e-Learning in educational system is to be a must and used entirely in educational system world. This new learning system from teachers to students or conversely using internet or medias of computer network are very popular Truong, (2016) which become the main apparatus to support an interactive virtual education. Technology development has opened up more opportunities for teacher professional development activities as MOOC (Massive Open Online Course) (Hollebrands & Lee, 2020). The presence of technology in educational learning system is used optimally in the era of pandemic Covid-19 through the integrated teaching learning activities with online technology as SPADA, SIPDA, Google and WhatsApp (M. M. Siahaan, Purba, & Sianturi, 2021). E-Learning is a vital media internet or intranet Atmojo et al., (2020); Mawarni et al., (2020); Najamuddin et al., (2022). Using this application, both teachers and students have their own

privilege to explore and develop advance learning. These online applications have facilities as speech access, time optimization, simplicity, efficiency, space optimization and other supportable facilities (K. W. A. Siahaan, Manurung, & Siahaan, 2021)

Speaking, as a foreign language proficiency to communicate effectively requires tools and practices. Every learner must master speaking competence through understanding the theories and practices on how to speak. Learners must be active to analyze every context well furthermore giving critics on various information and contextual conditions in each of daily life. Speaking skill is useful to enhance career, improve business, build confidence levels, public speeches, attending interview, participating in debates and discussions. Lawal, (2021);Sudarmo, (2021). Deciding how to apply technology in optimizing students speaking learning is the target of the research. In this research, the application of PjBL teaching method through online application has greatly contributed to gaining class time for speaking practice (Zainuddin, Habiburrahim, Muluk, & Keumala, 2019). This research is supported by relevant previous research such as: (1) Pratama & Prastyaningrum, (2016), who obtained research results that the use of project based learning models assisted by micro-hydro power plant learning media had an effect on improving students' critical thinking skills.. (2) Faizin et al., (2017), who obtained the results of the study that there was an increase in cognitive learning outcomes in experimental class students who were taught by applying the project based learning model, compared to control class students who were taught conventional learning on the human respiratory system material. (3) Rifai et al., (2019), who obtained the results of the study that the mastery of students' scientific responsibility attitudes in high grades increased after applying the project based learning (PjBL) learning model. The previous researches enrich concepts and methods of how to conduct the research in the MAN, and there is no research related to English speaking conducted in the school after the Covid-19 pandemic.

The application of PjBL teaching method through online applications is able to explore the interest of students of Madrasah Aliyah Negeri (MAN) Simalungun regency speaking competences. This school is located on Jl. Asahan Kel. Kerasaan I KM 28 Simalungun regency and is the only one MAN in the regency. According to the school base data, the students' speaking scores as the symbol of Speaking English competences of the classes during the Pandemic Covid-19 are not equally higher than the Criterion Standard Minimum. The data is inversely to the data before the pandemic. Therefore, there are several things that need to considered regarding to the readiness of the students to the total PBL by using online digital apparatus. Research on PjBL has been carried out by several researchers Ningsih et al., (2021) Each researcher has a characteristic for the research he did. From several studies, the statements show that there is a gap regarding the use of PjBL using online digital apparatus with the teaching methods without PjBL. Learning through the use of instructional media allows students to focus on the teaching content. Learning media contains complete media elements as: animated audio, text, video, and graphics, thus enabling users to interact through the available functions (Kustyarini, Utami, & Koesmijati, 2020). It is understood that interactive media can respond positively and increase students interest in learning which is reflected in the results of very high learning evaluations and excellent learning activities. After the Pandemic Covid-19 there must be a strategy to do as the collaboration of teaching methods and interactive media as YouTube in order to increase students interest in learning English. The strategy is as a solution to push learning creativity and it is also supported by research conducted by Kurniawati, (2020) which states that respondents with a percentage of 80% said interactive multimedia was interesting and fun.

2. METHODS

The research is a research and development (Research & Development) which aims to produce certain products, and tests the effectiveness of the products. The research implements a 4D development model Trolian et al., (2022);Ko & Lim, (2022)The research focuses on the development of project based learning-using online digital media to increase students speaking competence of Madrasah Aliyah Negeri (MAN) Simalungun regency, North Sumatera Province, Indonesia.

The following is picture 1 of the 4D Model Learning Device Development Stage:

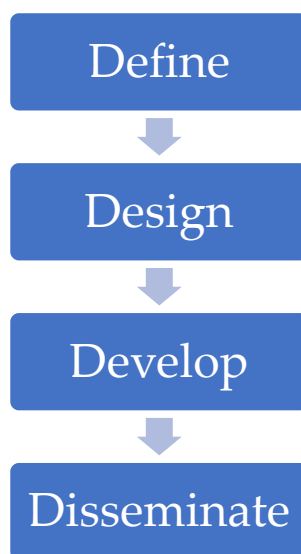


Figure 1 Stage of Development of 4D Model Learning Devices

Data collection techniques for the validity of learning media products include questionnaires on the validity of the syllabus, the validity of lesson plans, and the validity of scientific instruments. The validity data were obtained from experts as lecturers. They are the material experts and media experts. Questionnaires data regarding expert responses related to the feasibility of developing products were analyzed by transforming the average score of all observed aspects into qualitative sentences with the criteria proposed (Bondarenko, 2019).

3. FINDINGS AND DISCUSSION

Results

The research uses a 4 D model that is focused on development stage that includes validity testing. The development of Project Based Learning on how to apply technology in optimizing students speaking learning is the target of the research. Therefore, online digital media to which increases students speaking goes first to define as well as to design. At the define stage, content analysis, and literature review are appropriate. There are parts of decision in this section, as the equipment needed, the number of instruments to be developed, the type of instrument to be selected, and the material to be determined such as the substance and its characteristics, and who will be involved in this research. In addition, there were high lights to carry out for the instrument, as: analysis of the students, task analysis, concept analysis, and specification of learning objectives.

In the process of designing the Problem Based Learning, there are suggestions for improvement from the validator such as loading material aspects. In addition, the images, audio and video used in the speaking must be in the highest quality to make them appear clearer for the students. The selection of the highest quality will increase students learning enthusiastic (Bai, Hew, & Huang, 2020). The media selected and used has gone through a validation test process by three expert validators who review aspects of content, presentation and learning activities. The results are shown in Table 1.

Table 1. Product Validation Results

Nr.	Device	Average Value (%)	Criteria
1.	Syllabus	84	Very Worthy
2.	RPP	84	Very Worthy
3.	Media	90	Very Worthy
4.	Instrument	85	Very Worthy
5.	Average	85	Very Worthy

Based on data in table 1, it is shown that the average percentage of product validation/feasibility results is 85% with very feasible criteria. It means that the development product can be implemented in learning. The development of Problem Based Learning using online digital media to increase students speaking competence is considered suitable to be applied because it has been facilitated with steps to develop students' scientific literacy. Learning speaking using online media is made to be used independently by students with the help of students' worksheet as well as the PjBL. However, the media can also be used by teachers in other teaching methods as blending or hybrid learning.

Discussion

As it is stated on the web of to the Minister of Research, Technology and Higher Education of the Republic of Indonesia on April 04, 2022 learning at home or online is still the best solution to do all teaching activities in the rest of the semester. Online learning is defined as knowledge transfer experiences using video, audio, images, text communication, and software Batubara, (2021) and with the support of and internet Themelis & Sime, (2020). This era is to be the era of modification of knowledge transfer through online media which are using appropriate teaching methods. The creativities on how to increase students learning interest in learning becomes a solution.

The prime goal of the research is to assist an access to a prototype device in teaching speaking English during the era of online learning which makes teaching and learning activities more interesting and enjoyable, and motivated students to be more active in learning. This shows that PjBL can increase student motivation to further demonstrate creativity in implementing a project and completing schoolwork. In addition, students also feel motivated to produce work or products that have been learnt during the lesson. This is obtained from students' responses that the PjBL model activities encourage them to produce valuable speaking videos. The research shows the application of the PjBL in using online digital media that was supported by syllabus, lesson plans and test instruments. There are learning steps which may be used to explore data as, asking questions, proposing hypotheses, collecting data, testing hypotheses, and drawing conclusions. The steps purposes are to emphasize the importance of solving various problems that are displayed in the developed teaching materials.

In the pandemic era, students of Madrasah Aliyah Negeri (MAN) Simalungun regency, North Sumatera Province, Indonesia required to carry out online learning to study their lessons, as Speaking. They used online apparatus as online video to be their main resource to learn and practice English speaking. The results of the development of learning English speaking using PjBL teaching method connected to online apparatus are presented in Figure 1.



Figure 1. Project Based Learning-Using Online Digital Media

Theoretically, the findings empirically confirm a variety of previous literary arguments. Munezero D. Mielikäinen, (2022) mentioned that project based approach can be also applied in blended learning which solves real-life problems in study. The result shows that PjBL has the potential to provide interesting and relevant learning experiences for students. Anazifa & Djukri, (2017); LaForce et al., (2017) states that the effectiveness of using the PjBL in improving creativities thinking ability has been implemented in classes and students can obtain the result in their learning successfully. It is mentioned that PjBL model which was applied to 79 students at high school in West Bandung Regency, West Java, Indonesia have gained higher interest and creativity in their learning experiences.

Based on the relevant problems and previous research, the researchers applied a project-based learning model connected to digital equipment to improve the speaking competence of the state madrasah aliyah students (man) in Simalungun Regency. The implementation of this research is learning with a project-based learning model connected to digital equipment to create learning that is different from before, where this learning becomes more effective, fun and makes students more active in learning activities and makes it easier for students to hone their thinking skills, so that it can affect the improvement of student learning outcomes.

4. CONCLUSION

The PjBL teaching method in English speaking lesson is positively increase students' English speaking competence. It works through the digital application of both online and offline which was completely support the English speaking lesson as shown in figure 1. Then the increasing of students' speaking competence showed the affectivity of the PjBL at Madrasah Aliyah Negeri (MAN) Simalungun regency, North Sumatera Province, Indonesia as shown in table 1. The novelty of this research is to share further discuss of the possibility of digital speaking teaching method in digital

linguistics (Tokumar, Kumon, 2019). The era of digital linguistics are supported by the rapid development in information and technology literacy (ICT Literacy:ICTL) (Khlaisang & Koraneekij, 2019). Furthermore, it can be facilitated by the improvement and enhancement of the online learning in a ubiquitous learning context as e-learning (Ramadhani, et al., 2019). This research proves that PjBL can improve English speaking competences of the MAN students, there is 90% or almost every student has English speaking competences higher than the Criterion Minimum Standard. As stated by the regulation of the Minister of Education and Culture Number 53 of 2015 about the Standards for Assessment of Learning Outcomes, the English teacher stated the Criterion Minimum Standard was 70 and more than 90% of the students achieved more than 75. It is hoped that this research will investigate further implementation of PjBL in other digital facilities and other further researches in digital language.

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