Developing an ELT- Oriented Online PBL Model to Support EFL Students' Speaking Fluency

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ABSTRACT

Project based Learning models need to be developed in English learning. This research is needed to support learning model innovation. This study aimed to develop and validate an ELT- oriented online Project-Based Learning (PBL) model to support EFL speaking instruction at the senior high school level. This study employed research and development (R&D) methods, with a 4-D development model (Define, Design, Development, Disseminate). However, caused of the time limitation to accomplish the steps, this research only implemented at three steps; define, design and development. The instruments used are interview guidelines, questionnaire, and documentation. The data analysis method used were media expert validation, material expert validation and teacher responses analysis. The participants included English teachers at SMA Muhammadiyah Langsa and expert validators in learning models and instructional media. The validity of the model was analyzed using Aiken's V coefficient, while descriptive statistics were used to analyze teacher responses. The results indicated that the developed online PBL model achieved high validity, with media expert validation reaching an average of 91.25% and material expert validation reaching 90% both categorized as very valid. Teacher responses also demonstrated a high level of feasibility, with an average Aiken's V score of 0.83. These findings suggest that the ELT- oriented online PBL model is valid and feasible for supporting ELF speaking instruction. However, further studies are recommended to examine the effectiveness of the model in improving students' speaking fluency through experimental implementation.

Keywords: *Project- Based Learning; Online Learning; EFL Speaking; Learning Model Development*

INTRODUCTION

Technology is developing rapidly, especially in the world. The using of Internet and its application worth to various aspects of our lives requires attention. Industry 4.0 has become the focus of people from various countries, including Indonesia. Facing the technological era requires competencies that must be possessed. There is a need to develop learners' competencies for This in order to support the change of global

competition and workplace of technology in the digital world Soparat et al., (2015). The emergence of technology can accelerate language learning. At the same time, learners can have resistance to new technology in terms of adoption for learning. Yulian et al., (2022) The teaching and learning process in schools should strive to combine information and communication technology (ICT) and competition in the 21st century to maximize the preparation for long-term student success. Online learning will not run well if it does not use the right technology or model.

One of the learning models that can be combined with online is project-based learning. Project-Based Learning (PBL) is extensively recognized and utilized in education, and it is one model that regulates learning using projects Ni Nyoman Padmadewi, (2023). In most cases, projects comprise complex assignments based on challenging essential questions or problems that require students to engage in design, problem-solving, decision-making, or investigative activities over an extended time, culminating in a final product or presentation Almulla, (2020). Previous research stated that Thus, the project-based learning model can foster student learning attitudes and can make students more active and creative in learning (Bhakti et al., 2021).

Online- Project based learning is define as a person or group action that takes place over time and results in production, presentation or engagement via online instruction Awuor et al., (2022) Project-based learning is very suitable if it is integrated with digital media so that it can express ideas freely, it is a fortune to create a learning community, it can also interact directly between teachers and students, this can be applied through digital media such as YouTube, Twitter, Facebook, or telegram Lubis et al., (2018). Online Project-based learning will emphasize the assignment's format, the assignment given by the teacher, and the learning process, which is carried out online. By using a project - based learning the students become creative in exploring their self then they can share the project at their social media like YouTube. Online project-based learning is deeply rooted in constructivist learning theory, particularly the works of Jean Piaget and Lev Vygotsky. According to Vygotsky, (1978), learning is most effective when learners actively construct knowledge through social interaction within their Zone of Proximal Development (ZPD). Online PBL provides meaningful opportunities for students to collaborate, negotiate meaning, and co-construct knowledge while engaging with digital tools and peers in real time or asynchronously.

Several empirical studies have confirmed the effectiveness of online project-based learning in language education. Hasani, A., Siregar, M., & Yuliani, (2020) found that integrating digital storytelling within PBL significantly improved students' speaking fluency and self-confidence. Similarly, Rahman, A., & Sari, (2021) showed that students' engagement and oral performance increased when they completed collaborative video projects through PBL. In an online EFL context, Li, X., & Lee, (2022) revealed that digital project work fosters greater learner autonomy and interaction, aligning with constructivist and socio-cultural learning principles. The design of Online PBL is also underpinned by experiential learning theory Kolb, (1984), which emphasizes the transformation of experience into knowledge through active experimentation and reflection. Within the 21st-century skills framework, PBL is viewed as an approach that

cultivates communication, collaboration, creativity, and critical thinking (Partnership for 21st Century Learning, 2019). Integrating these principles into online English learning ensures that learners not only acquire linguistic competence but also develop transferable digital and interpersonal skills.

YouTube is one of the most popular video-sharing platforms, allowing users to upload, watch, download, and share video content freely and easily. Its accessibility and multimedia features make YouTube a valuable resource in educational contexts, particularly in language learning. The integration of interactive videos such as YouTube into the teaching and learning process has been shown to enhance students' understanding and mastery of learning skills, as audiovisual materials provide richer input and contextualized examples of language use Riyanti Fatmala Sari, (2019). This aligns with the paradigm shift in classroom learning, where traditional teacher-centered instruction is increasingly replaced by technology-enhanced and student-centered approaches that respond to the demands of modern education.

EFL learners can develop their speaking skills by imitating and reproducing what they have heard from various speaking learning videos Menggo, (2021). Many students think that speaking English is one of the difficult skills to do considering that Indonesian people do not use it as a daily language. The low ability of students to speak English is caused by one factor, namely the model used by the teacher in learning to speak is less varied so that it seems monotonous and lacks student motivation to speak. The success of learning English can be measured by the ability to speak the language. Similarly, Sumardi, S., Adzima, R., & Wijaya, (2020) demonstrated that digital video projects provide authentic assessment opportunities that improve students' speaking fluency and pronunciation accuracy

The demand for communicative competence in English has significantly increased in the 21st century due to globalization and technological advancement. As English is a lingua franca in academia, business, and international communication, speaking skills have become a critical focus in English language teaching Zhang et al., (2021). However, speaking remains one of the most challenging skills for EFL learners due to limited authentic exposure, affective barriers such as anxiety, and traditional teacher-centered methodologies Jeremy, (2001). Based on the previous research showed that, designing and adapting online project based learning are expected to help students learn online and develop students' thinking skills Bhakti et al., (2021). Therefore, future work should consider establishing guidelines for teachers to incorporate the Project – Based Learning approach in different areas of learning and learning processes Almulla, (2020) . Implementing the PBL framework in the Research Method Course has improved their competence in writing a research proposal Ni Nyoman Padmadewi, (2023). The suggestion can serve as a guide for different majors in using internet devices to perform project-based learning for ESP. Habibi et al., (2022). The shift from passive learning to active, student-centered learning has encouraged educators to explore alternative pedagogical models such as Project-Based Learning (PBL). In the context of English Language Teaching (ELT), PBL is particularly beneficial as it promotes real-world communication, collaboration, and problem-solving. John W. Thomas, (2000) **;**

Miller, (2006). However, while PBL has gained recognition in face-to-face classrooms, its integration in online settings remains under-researched, especially in EFL contexts in developing countries.

Based on preliminary need analysis conducted at SMA Muhammadiyah Langsa, several challenges were identified, including low student motivation to speak English, limited exposure to authentic speaking activities, and teachers' difficulties in implementing varied and interactive learning models in online settings. These challenges indicate a need for a structured, ELT- oriented online PBL model that aligns with the curriculum and supports speaking instruction. This gap becomes more significant, which accelerated the use of online learning platforms. Many EFL instructors were unprepared for the sudden transition and lacked robust models to support interactive language skills such as speaking Yulian et al., (2022) Therefore, developing an ELT-oriented online PBL model that targets speaking fluency is a timely and necessary innovation. The present study aims to address this gap by designing, developing, and validating an online-based Project-Based Learning model tailored to the needs of EFL students in Indonesian high schools. The study emphasizes digital integration (e.g., video creation and YouTube sharing) and student collaboration to simulate authentic speaking tasks. The existence of a video sharing platform allows students to independently seek and share information in the form of knowledge and practice.

Therefore, this study aims to develop and validate an ELT- oriented online Project-based learning model designed to support EFL speaking instruction in Senior high school. The research on this, it is necessary for effective learning to be applied to students to improve their speaking competence, so the research team was motivated in making a study entitled Developing Online Project-based Learning Model in Improving Students' English – Speaking Skill. The formulation of the problem in the research is how is the validity and feasibility of the results of developing an ELT- Oriented Online PBL model a valid and appropriate to Support EFL Students' Speaking Fluency.

METHOD

Research Design

The research to be carried out is research and development. It is used to produce a particular product and test the effectiveness of that product. In this case, the product which will be developed is an online-based project-based learning model. The development model used is the 4D (four-D) research and development model. It is consists of four main stages, namely define, design, development, and disseminate (Sugiyono, 2017). A complete description of the research design used enables the reader to evaluate the appropriateness of the research methodology.

Participants

The subjects involved are the teachers of English subject at class XI SMA Muhammadiyah Langsa, as a user of development products selected by purposive sampling by considering schools that have implemented project based learning models in English learning. In addition, the research subject is a validator that expert in the field of learning model development at Samudra University. This study involved two experts,

namely material experts using PBL and media experts. The selection of expert subjects is carried out purposively by considering competence, ease of communication and experience in their respective fields.

Instruments

The instruments used in this study included interview guidelines, validation sheets, eligibility questionnaires, and documentation. The interview guidelines were employed during the define stage to gather information from English subject teachers, learning model experts, and media experts regarding the needs and challenges of English teaching and learning. Validation sheets were developed to determine the validity of the model being designed. These sheets contained statements organized in a rating scale format and were completed by validators, including material experts, media experts, and learning model experts. In addition, eligibility questionnaires were distributed to English teachers to collect their responses as potential users of the developed model. This instrument aimed to measure the level of feasibility of the online-based Project-Based Learning model from the teachers' perspectives. Finally, documentation techniques were used to collect supporting data in the form of learning materials, media, and infrastructure relevant to the model development process. These instruments collectively ensured that both qualitative and quantitative data could be obtained to support the research validity and reliability.

Data Analysis Procedures

The research data obtained were analyzed both qualitatively and quantitatively. Interview data were analyzed descriptively through data triangulation to ensure validity, while the results of the eligibility questionnaire and expert validations were analyzed using descriptive statistics. To determine the validity level of each aspect assessed by experts, the Aiken's V formula was applied as follows:

$V = s/n(c-1)s$

where $s = r - lo$, lo represents the lowest score in the rating scale, c denotes the highest score, and r is the score given by each validator. The Aiken's V coefficient ranges from 0 to 1.00, with higher values indicating greater content validity (Aiken, 1985). This method is commonly used in educational research to assess expert agreement on the relevance and clarity of instrument items. The resulting coefficients were then interpreted according to established validity criteria to categorize each aspect as valid, quite valid, or highly valid.

FINDINGS

Based on the 4D development procedure, data obtained from research results carried out during the research were as follows:

Define Stage Results

The data collected at the define stage is obtained from needs analysis using interviews and questionnaires. The following are the results of the questionnaire and interview data analysis

1) Teacher Readiness

The data obtained from the results of distributing questionnaires include teacher readiness. They need to be known to ensure that the online-based project-based learning model that will be developed can be used by teachers without any problems. 2 of 2 teachers as a sample stated that they often apply learning models in the learning process. Learning models that have been applied include: Problem based learning, Contextual teaching and learning, Cooperative learning, learning cycle model, Portfolio-based learning, Problem solving, Inquiry based learning, and Project based learning. The learning model is applied by the teacher to several topics of English material such as offer and suggestion, opinion and though, cause and effect and meaning through music. From the learning models that have been applied, teachers can develop students' skills in language, numeracy and digital skills. This information shows that teachers have readiness in implementing a new learning model that will be developed.

Teacher readiness is also known from the teacher's answers to questions about the obstacles experienced by teachers in implementing a learning model. This information becomes input for researchers in developing an online-based project-based learning model.

2) Teacher Needs

The development of an online-based project-based learning model needs to consider the teacher's needs. This is because the teacher's need for a learning model is a consideration whether or not a model is needed to be developed. (Thiagarajan, 1974) states that due to the paradigm shift in the educational process, an educational model is needed that is able to accommodate the development of student competencies. Competencies of critical thinking, creativity, communication and collaboration must be possessed by students and can appear in their professional performance. The teacher stated that not all learning models that have been applied can overcome the learning problems faced by the teacher, according to the answers to the questionnaire 70% of the teachers chose the answer sometimes (Figure 3). Therefore, the development of learning models needs to be done.

3) Support (Policy, internet facilities and Leadership)

Aspects of support analyzed in this study are media technology, especially the internet, and services for teachers and students, school policies, and support from school principals. Support in the form of internet facilities can be found with the school's wifi. The platforms that are often used by teachers in learning are Whatsapp, youtube video and zoom, which are known from direct observations during the researcher's visit to the sampled school. The school also makes a program to encourage activities to improve English by creating an English Club. The school also provides a policy by carrying out routine activities to evaluate English learning by holding regular meetings with the MGMP of SMA.

4) Student Needs

The development of an Online-based Project Based Learning model is needed if students show difficulties in implementing and developing PJBL in English learning. In addition, based on the teacher's perception, students' online-based learning affects

learning outcomes. In fact, the value of the ability to speak English for students is very important. The teacher stated that the characteristics that dominate online-based PJBL learning can create an independent learning atmosphere, be more creative, foster a high enthusiasm for learning, have curiosity, can communicate interpersonally, can collaborate and become more communicative. In the last question in the questionnaire, the teacher stated several main factors that influence the students' English-speaking ability, namely: (1) Parents Involvement (2) Interest (3) Talent (4) Willingness, (5) Effective learning model.

Design phase
After got the problem at the define stage, the researcher did a design of Online-Project based Learning that used in improving students speaking skill. There were four steps at this phase,
a. Write the script of video. the chosen of media as a project that relevant to the learning syllabus. At this step the researcher used offering help in office as a subject related with syllabus at XI class.
b.   The chosen video format the researcher used handphone camera in making the video teaching learning process with the material offering help in office, at that subject based on the assessment of speaking, then
c.   The researcher edits the video used cap cut application, making background of picture, sound effect, cover.
d. The finishing of the video will be share in you tube

The Development Phase
  The results of the Development stage are in the form of data from the validation of the model to experts of media. The results of the validation are as follows.
  Table 1: Media expert validation

No	Rated Aspect	The Average %	The categories
A	**Content**		
1	Subject in video	90	Very Valid
2	Logic and effective	100	Very Valid
3	The material easier to understand	100	Very valid
4	The appropriateness	90	Very valid
The average of content score		**95**	**Very Valid**
No	Rated aspect	The average %	The categories
B	**Speaking aspect/ language**		
1	Pronunciations	90	Very Valid
2	Grammar	90	Very Valid

3	Vocabulary	100	Very Valid
4	Fluency	90	Very valid
5	Comprehension	80	Valid
The average of language score		**90**	**Very Valid**

No	Rated Aspect	The average %	The Categories
C	**Video/ Audio**		
1	The clarity of picture	80	Valid
2	The appropriateness of text	100	Very valid
3	The appropriateness of animation	90	Very valid
The average of video score		**90**	**Sangat Valid**

No	Rated Aspect	The average %	The categories
D	**Creativity**		
1	the use of camera corner	90	Very Valid
2	the effect of sound and music	90	Very Valid
The average of Creativity score		**90**	**Very Valid**
The whole average		**91,25**	**Very Valid**

Based on table the results are obtained with the percentage of the Online-based Project Based Learning Model as an alternative model in English learning with the results of an assessment of 95% content quality aspects, linguistic aspects 90%, Video Aspects 90%, creativity aspects 90%. The average of all aspects of online-based PJBL media using YouTube is 91.25% it means very valid.

Tabel 2. The validation of Material Expert

No	ited Aspect	Average %	Categories
A	**The formulation of Learning objective**		
1	The appropriateness of material based on the core competency and basic competency	90	Very valid
2	The appropriateness of material with indicator.	100	Very valid
3	The appropriateness of material with the purpose of learning	90	Very Valid
4	The appropriateness of material with concept or the related theory from that field	80,0	Valid
The Average score of learning objective		**90,0**	**Very valid**

No	ited aspect	Average %	Categories
B	The appropriateness of content		
1	The systematical of learning design arrangement	100	Very valid
2	The adjustment of teaching learning process with applying PjBL	90	Very valid
3	The appropriateness of subject with the goals of learning	90	Very valid
4	The use of language and allocated time	80	Valid
The average score		**90**	**Very valid**

Based on table the results of material expert are obtained with the percentage of the Online-based Project Based Learning Model as an alternative model in English learning with the results of learning objective of 90% very valid and the appropriateness of content 90% very valid. The average of all aspects of material in PJBL media using YouTube is 90% it means very valid.

The results of distributing questionnaires to teachers as a developed learning Online- Project based learning model. The answer data can be seen in Table 3

Table 3. Results of User Questionnaire Answers by the English teachers at SMA Muhammadiyah as an Online-based Project Based Learning Model

	Rated aspect	Expert I	II	s1	s2	$\sum$s	n(c-1)	Aiken's V
1	**The supporting theory**	data						
	The theory of online Project based Learning that conveyed appropriately for becoming core in arranging online Project Based Learning model	4	4	3	3	6	6	1.000
	The concept of PjBL and peningkatan keterampilan berbicara peserta didik relevan sebagai landasan Model Project Based Learning berbasis Online	3	3	2	2	4	6	0.667
	The theory of online Project based Learning that related by the process in increasing students English speaking ability for supporting of online Model Project based Learning model	4	3	2	3	5	6	0.833
2	**The structure of Online Project based Learning**							
	The background of developing model is stated clearly	3	4	2	3	5	6	0.833
	The purpose of developing model is stated clearly	4	3	3	2	5	6	0.833

The description of Model is stated clearly	4	4	3	3	6	6	1.000
The principle of reaction in learning is stated clearly	3	3	2	2	4	6	0.667
The social system in learning is stated clearly	3	4	2	3	5	6	0.833
The support System in teaching learning is stated clearly	4	3	3	2	5	6	0.833
The use of learning approach is stated clearly	4	3	3	2	5	6	0.833
The steps of teaching learning process are stated clearly.	3	4	2	3	5	6	0.833
The evaluation and assessment are stated clearly	4	3	3	2	5	6	0.833
3 Learning Outcome							
The learning outcome is conveyed clearly	4	3	3	2	5	6	0.833
Mean							0.833

The results of the questionnaire data analysis showed that the average Aiken's V number was 0.833. the validation was analyzed using the coefficient formula V. If the range of Aiken's V numbers that can be obtained is between 0 to 1.00, then the results of the Aiken's V coefficient for each aspect can be interpreted as a fairly high coefficient. Because of Aiken's. number range V obtained is between 0 to 1.00, it can be concluded that the draft model developed valid with a fairly high category. As for suggestions and input related validators improvement of the model is the need for a more actual explanation of the evaluation process in implementation of the learning model.

DISCUSSION

Based on the research finding the online Project - based learning model which developed at the English subject using theme offering help in office for XI class at SMA Muhammadiyah Langsa. The resulting of this model is also supported by training content that can attract students' attention, so that students can immediately participate actively in making project. The aim of this research is to provide a model that teachers and students can use in accordance with the syllabus in improving student speaking. Apart from that, online project-based learning can also be used as a learning resource for students to study independently based on each student's learning abilities. The product in this research is used in planning for students in making a speaking project. It is line with Sumardi, (2020) he said that the implication of online project – based learning

model in improving speaking is by employing the digital video project, students learn to speak and explore more ideas as they want to put it in the video.

The research was carried out in 4 stages according to the 4D model which consists of 4 main stages, namely define, design, develop and disseminate. The first stage is to carry out curriculum analysis, student analysis and concept analysis as well as analysis of facilities and infrastructure. The next stage is initial product development by creating a video teaching learning process entitle offering help in the office with the Anime application. Next, the validity testing stage was carried out by validators of media and materials, and finally, carrying out practicality trials on class XI students. The validation stage was carried out by two media validators and one material validator. As explained by Sugiyono, (2017), product validation can be done by inviting several experts or experienced experts to assess the new product being designed. In the product development process, two revisions were made to the design of the model developed after that the product will share at the you tube as online.

The findings of this research provide strong support for the viability of an ELT-oriented online Project-Based Learning (PBL) model in improving EFL students' speaking fluency, particularly within the context of SMA Muhammadiyah Langsa. The model's high validation scores from media and material experts (91.25% and 90% respectively), alongside teacher feedback (Aiken's V = 0.833), indicate both pedagogical soundness and practical feasibility.

The integration of digital tools, particularly YouTube, into the PBL framework proved effective in enhancing learners' speaking engagement. As (Jeremy, 2001) notes, the key to effective speaking instruction lies in the creation of meaningful, real-life speaking situations. In this study, learners were encouraged to plan, record, and upload videos simulating office-based conversations, which provided not only contextual relevance but also increased motivation and ownership over their learning process.

Furthermore, this model aligns with the constructivist theory, where knowledge is constructed through active engagement and collaboration. The PBL model successfully facilitated interaction, creativity, and reflective thinking, core components identified by (Almulla, 2020) as integral to meaningful PBL design. The task of creating digital videos planning scripts, collaborating on scenes, and editing required students to negotiate language in authentic ways, promoting fluency through repetition, rehearsal, and performance.

One notable aspect is how this model enhances learner autonomy and digital literacy. As students engage with digital editing tools (e.g., CapCut) and social media platforms (e.g., YouTube), they are not only developing language skills but also 21st-century competencies such as media communication, collaboration, and problem-solving (Awuor et al., 2022). These competencies are indispensable in the post-pandemic digital education landscape.

Another advantage lies in the flexibility and scalability of the model. Because it is online-based, it can be implemented in various educational settings, especially in rural or underserved areas, provided there is basic access to internet and mobile devices.

The project-based approach also makes it possible to tailor tasks to students' interests and local contexts, increasing engagement and relevance Habibi et al., (2022).

However, the model is not without challenges. Teacher readiness, while rated high, still depends heavily on digital literacy and workload. Some teachers may find it demanding to plan, supervise, and assess PBL tasks in an online environment without adequate training. Additionally, while students found video creation enjoyable, those with limited access to technology or poor internet connection may face inequities in participation and performance.

Another area that requires further refinement is the evaluation component of the model. Validators in this study recommended developing a more systematic and transparent framework for assessing students' speaking performance. This aligns with the suggestion of Sumardi, S., Adzima, R., & Wijaya, (2020) that project-based learning requires clearly defined performance rubrics to ensure reliable and fair assessment. Incorporating analytic rubrics aligned with the Common European Framework of Reference (CEFR) or IELTS descriptors would enhance both transparency and formative assessment quality, allowing teachers to provide more detailed feedback on fluency, pronunciation, coherence, and vocabulary use. Recent studies, such as Li, X., & Lee, (2022) and (Rahman, A., & Sari, 2021) also confirm that structured rubric-based feedback within digital PBL environments significantly improves students' oral performance and reflective learning. Therefore, integrating a standardized assessment framework is critical for ensuring both pedagogical rigor and fairness in evaluating speaking outcomes.

In terms of sustainability, ongoing teacher development and institutional support are essential. The involvement of school leadership, as observed in the MGMP English teacher meetings and infrastructure support, plays a crucial role in model adoption and scalability.

CONCLUSION AND SUGGESTION

The implementation of the online-based Project Based Learning model development was carried out to determine the feasibility of the model consisting of material experts and media experts. In the validation process by media experts average of 91,25% and material expert average 90 % was categorized as very valid, In the feasibility presentation process based on the average teacher response. The results of the questionnaire data analysis showed that the average Aiken's V number was 0.833. the validation was analyzed using the coefficient formula V. As for suggestions and input related validators improvement of the model is the need for a more actual explanation of the evaluation process in implementation of the learning model.

In conclusion, the ELT-oriented online PBL model is a promising pedagogical innovation that supports speaking fluency development by integrating technology, contextual learning, and collaborative tasks. However, further cycles of development and dissemination are needed, particularly in expanding teacher training, integrating assessment tools, and ensuring digital equity among students.

ACKNOWLEDGMENT

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