

Developing RELT Materials Based on PjBL for Teaching the English Department Students of Z-Generation

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Abstract: This study is to explore the use of PjBL (Project-based Learning) in teaching Research in English Language Teaching (RELT) to English students as a Z-generation. It is studied by the R n D method using the ADDIE model. The instruments are validation sheets, questionnaires, interviews, and tests. Data have been analyzed by reading, coding, and interpreting the data; then descriptive statistical analysis. It is found that the students and lecturer need the materials of RELT taught by PjBL and had a positive perspective on it. There are two products produced; students' and lecturer's books; and the materials developed are effective to be used by English students because of the difference in the mean score between the pre-test and post-test (59.85 and 68.30). It is also found that more than 60% of students in the RELT classroom felt good in comprehending the material. The hypothesis is accepted because the result of the t-test (5.878) is counted higher than the t-table (2.093); or in 0.001 which is lower than 0.05. It is indicated that the RELT materials developed by PjBL are valid, practiced, and effective for teaching Z-Generation of English students. So, it can be concluded that RELT materials based on PjBL are appropriate for teaching students in the university level.


1 INTRODUCTION


A research method is one of the learning subjects for university students, and it is also submitted to the English students of the State Islamic University of Syekh Ali Hasan Ahmad Addary Padangsidempuan (UIN Syahada Padangsidempuan). This subject is given to the students in 2 (two) semesters with different names of the subjects; they are research method and research in English Language Teaching (Hilda et al., 2019). The research method is a subject of learning to give the students information, knowledge, and comprehension about how to do research. It is known as steps or procedures or techniques that are done specifically for the collection and analyzing the data (King et al., 2017; ScribbrTeam, 2022).


Project-based Learning (PjBL) is not a new teaching model; however, it is still useful to improve student's learning ability in the current time. As it has been stated by Ketut & Cahyani (2021) and Sari & Prasetyo (2021). Based on their findings, PjBL is a good model for making the students are being able to comprehend and increase students' creativity and critical thinking. By using PjBL, they found that the student's learning of creative and critical thinking increase; it is proved that this model is still suitable to the current era of the teaching learning process.


Sari & Prasetyo (Sari & Prasetyo, 2021) conducted research and had proven that implementation of PjBL has given good improvement to students' critical reading; the students had high motivation in finishing the reading tasks by using

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PjBL. It is also seen that PjBL can be good for improving speaking ability

(Bakar et al., 2019; Qisthi & Arifani, 2018; Yang & Puakpong, 2016). Beside, PjBL also had good result when it is used to develop learning materials (Hasanah et al., 2018; Ismail et al., 2021). Both of the result of the research showed that the students have positive perception about developing learning materials or students' worksheet using PjBL. The validation result is also showed in very good validity; it means that developing materials for learning based on Project-based Learning have proved to make good result for learning. Based on the result, it is known that PjBL is respectable to learning process or even to develop materials for learning. Students' learning activities, language learning, and many aspects of learning after giving the PjBL learning model improved.

Moreover, teaching students in G-generation demand the inspired teachers. G-generation is the students who born in the periods year between 1995 and 2012; and they are stated as the internet generation (Gabrielova & Buchko, 2021). As the G-generation, almost several hours in a day used internets, used their gadgets that is used not only to communicate but also for having exist in social life. As the internet generation, it is the chance of the teachers to utilize their habit to support their learning process.

Students in English department are required to have research projects at the end of their study, and they are prepared to do it with two subjects of learning (Hilda et al., 2019). To make the students gain the aims of the lessons, they must do such kinds of research project, such as writing mini proposal or even writing mini research related to their interested. PjBL model is one of the appropriate models of learning for preparing the students to make their mini project. Because of that the writers are interested to develop materials for learning Research Method with PjBL. This model is focused on tasking the students to do activity to produce something beneficial for their learning process (Iskandar & Mulyati, 2019). This model has main activity with a series of group activities based on the projects to make the students engage in learning (Ratuanik & Nay, 2017). The writers believed that developing the material based on PjBL is appropriate to help the students arranging the research projects. So, this research was done based on this reason.

The students in Z-Generation which is very familiar with internet have the ability to make many contents and sources for their learning. They will search many examples from the internet, they

analyse, then create their own project related to their interested.

Based on this condition, it is very interested in doing research by developing the learning materials for research methods in English Language Teaching (ELT) based on Project-based Learning (PjBL) for the English students of Z-Generation in UIN Syahada Padangsidempuan. The objectives of this study are to develop the learning materials for research in ELT, to the effectiveness of the materials developed, and to explore the students' attitudes to the materials.

2 LITERATURE REVIEWS

2.1 Instructional Materials

Instructional material or learning material is known as Teaching and Learning Materials (TLM) as anything that can be used as tools for facilitating learning in delivering the materials in the teaching-learning process. TLM is the group of learning resources and materials of the lessons that are used by educators to train their students to support learning aims for all subjects (Tomlinson, 2014). It is also understood as a diversity of educational materials that the teachers or lecturers use in their classroom to back specific learning objectives, as displayed in lesson plans. Lack of necessary materials and lack of competence of the teachers in teaching effectively will affect the learning process and the result of learning (Chidi-Onwuta et al., 2022). So, it can be stated that instructional material is important; and it is a set of teaching materials to be delivered to the students to reach the learning objectives.

The textbook is a kind of instructional material have an important position in learning for both lecturer and students. All the material in teaching is contained in a textbook. Learner who does not have a textbook with them during the teaching-learning activities will not be able to follow the lesson well. In the other word, a lack of textbooks in teaching and activities can create less success in teaching (Prasetyo, 2022). Therefore, the use of appropriate textbooks in teaching English attracted students' interest in reading and understanding the course.

In this study, we developed TLM about research methods in English Language Teaching. The materials developed provide the English students to create their results, such as how to make correlational research, how to create a research proposal, and so on.

2.2 Project-Based Learning (PjBL)

This section is a brief description of PjBL around the definition and advantages, and disadvantages of Project-based Learning.

2.2.1 Concepts of Project-Based Learning

Project-based Learning or PjBL is a model of learning that is posed to the students to learn by doing a project. It is a kind model of teaching which emphasized the students to create or produce the product during the process of learning (Sharma, 2021). The project-based learning model is authentic in a constructive investigation by giving direct experience to students through project-making activities so that the teacher is only a facilitator. Projects contain complex, challenging, and demanding tasks for students to design, solve, decide, investigate, and provide opportunities for students to work independently (Suherman et al., 2020). Project-based learning creates students' creative thinking to produce the learning outcomes.

Project Based Learning model provides opportunities to students to be involved in learning and can construct their knowledge (Safaruddin et al., 2020). It is an active student-centered form of instruction that is characterized by a student's autonomy, constructive investigation, goal setting, collaboration, communication, and reflection within real-world practices by presenting learners with problems or a certain situation and motivating learners to identify and carry out the solutions (Puangpungsi, 2021). It means that Project Based Learning model is student-centered learning with the principle of contextual, active involvement of students in teaching and learning to achieve learning goals and competence. Besides, the Project Based Learning model emphasizes students to solve problems in learning.

Based on the explanation, it can be concluded that PjBL is a model of teaching and learning which provided the students to be active in creating products related to the subjects of their lessons.

2.2.2 Advantages and Disadvantages of PjBL

Project-based Learning (PjBL) has some advantages and disadvantages. Karyawati (2018) served the advantage of PjBL is making the students active in the classroom, making fun of learning, and reinforcing students' knowledge. She also adds that PjBL activities are successful in the classroom in minimizing the stiff and formal relationship between

the teacher and students. The students can improve their creativity and problem-solving skill, and the students can learn by doing.

Besides, project-based learning can also make students actively engages in project learning (Astuti, 2020). Project-based learning is a method in which the students are learning through a project that is decided by themselves with the help of teachers so that they can be actively engaged in the learning process. Having active students makes them good comprehend materials. Project-based learning facilitates the teaching and learning process, involves students in the learning process, motivates and encourages the creativity of students (Hidayah et al., 2021; Ketut & Cahyani, 2021). The students focus on finishing their projects to improve their language skills.

Besides having advantages, PjBL also has disadvantages. Some of the disadvantages are time-consuming and uncomfortable for students who do have not similar abilities. (Guido, 2016; Hidayah et al., 2021; Sharma, 2021). The advantages of the PjBL happen when it is applied because it needs time to prepare and to do the PjBL, needs time to understand the model. In addition, the students must in the same abilities, however, not all students in a class have the same ability.

PjBL will give a good effect on the students because of the advantages. However, the disadvantages that occur can be minimized by making various kinds of learning models or combining PjBL to another model of learning.

2.3 Research in English Language Teaching

Research in English Language Teaching (RELT is a kind of lesson or subject of learning in the English Department of UIN Syahada Padangsidempuan. It is the second subject of the research method that is distributed to the students in two semester (Hilda et al., 2019). It is aimed to give the students research knowledge and to train the students to be able in doing research related to English language teaching.

2.4 Z-Generation

Z-Generation is the generation with the age of about 20 this year. It is the generation born between 1995 – 2010 who are very familiar with the use and the function of the internet; they live and are usual with digitalization (Dewi et al., 2021; Gabrielova & Buchko, 2021; Soraya & Surya Ariyani Pedo, 2021).

So, Z-generation is the generation that very close to internet life.

However, the students in Z-generation need to be served with the internet because the internet or the digital world is very useful in supporting educational life (Amalia & Halim, 2022; Martin et al., 2022). Many proves shown that the use of the internet or digitalization has given not only a positive side but also a negative side. It can be seen that the English students as Z-Generation agreed that learning using digital learning such as the online learning system is challenging for the students (Harida et al., 2020). It can be said that the students are ready to face digital learning. Furthermore, the Z-generation students need to get the benefit of the internet or digital system of learning to help them in learning. The development of the materials for learning in RELT is also related to the use of the internet or digitalization because some of the materials and tasks in the materials are stated with links only. So, the learning process and tools must support the study of Z-Generation in the English department of UIN Syahada Padangsidempuan.

3 METHODOLOGY

This study is a Research and Development that is to develop materials for learning Research in English Language Teaching (RELT) by using Project-based Learning (PjBL). There are several participants in this research: validators, students, and lecturers. There are 3 (three) validators, 60 (sixty) students as participants in gaining the data of students' needs, 5 (five) students as the participants in small try out, 30 (thirty) students as participants in the experimental step, and 1 lecturer that has participated in this study. The validator is important to evaluate the instruments and the projects valid, and the students to get the data about students' needs on the materials of learning, the effectiveness, and the implementation, while the lecturer is to take the data about the lecturer's needs on the materials and methods used in developing the materials. ADDIE is the model used in developing the materials. As stated by (Branch, 2009) that ADDIE is appropriate to build a learning environment for performing authentic tasks, and complex knowledge.

In the step of Analysis, the authors have analyzed the students' and the lecturers' need for the materials. The next step is Design in which the authors have designed two products as materials for teaching and learning RELT based on PjBL; they are students' and lecturers' books. In Develop step, the authors came to the suggestion, critics, and input from validators,

students, and participants of the Focus Group Discussion. The fourth step is the Implementation step by doing two kinds of trials; small try out and pre-test and post-test control design of experimental types. The result of a small tryout was used as the consideration to make a further try at the participants (15 students as an experimental group).

Some instruments have been used to gather the data; such as questionnaires, observation, and interview guidelines, and also tests of knowledge about the materials. The data that have been collected were analyzed qualitatively and quantitatively. In qualitative analysis, reading, coding, grouping, and describing were used; while in quantitative analysis (to get the value of mean-score, normality, homogeneity, and t-test), SPSS 23 was used. The data was also well-arranged into a distribution of frequency and figured out through histogram.

4 RESEARCH RESULTS AND DISCUSSION

4.1 The Result of Need Analysis

There were two kinds of data namely quantitative data and qualitative data (Karnedi, Zaim, 2021). Data about need analysis were gained from the questionnaires from the students, lecturers, and experts. The data showed that all of the instruments and products in the level of valid. All the instruments have been validated; and the result is shown that valid, so it can be used to collect all the data. The data are about the students' and lecturers' needs, the student's attitude to the materials developed, and the students' results on understanding the concepts of the research in ELT.

Table 1: The Result of Students' Need for Method or Model of Teaching

No.	Needs of Method/ Strategy/ Techniques/Model of Teaching	Quantity	Percentage
1	Project Based learning	25	41%
2	Problem Solving Based Learning	5	8%
3	Discussion	12	20%
4	Drill	2	3%
5	Presentation	5	8%
6	Direct Method	2	3%
7	PjBL, Presentation, and FGD	1	2%
8	PjBL, DM, Drill	1	2%
9	Nihil	4	7%
10	All	4	7%
Total		61	100%

Based on the table, it is seen that various methods are proposed to the students in their learning of RELT. The result of the interview can be concluded that all the students need a method of learning, and project-based learning is the highest need of the students in learning; that is the result of PjBL as a model for developing the materials for learning RELT. Project-based learning is stated suitable for studying RELT courses because it makes the students easy to understand the materials and makes them active in learning, and in creating their ideas.

In addition, on the result of the lecturer's need for the materials of RELT, it is seen that the materials are needed for teaching RELT materials. The lecturer said that the developed materials are needed for research in ELT. This is under what was conveyed by Al-busaidi & Aleyabi (2021) and Mahasneh & Alwan (2018) that was projects are attractive to students and teachers because of their flexibility. Based on the result, it is known that the development of materials for RELT is necessary. develop the learning materials for research in ELT, to examine the effectiveness of the materials developed, and to explore the students' attitudes to the materials.

4.2 The Result of Research

Based on the result of the research done through the ADDIE model; it was in the steps of designing and developing, the result showed that the materials for RELT used PjBL in four steps (planning, practice, project, and evaluation). The steps of PjBL in developing two products are as seen in the following figure:

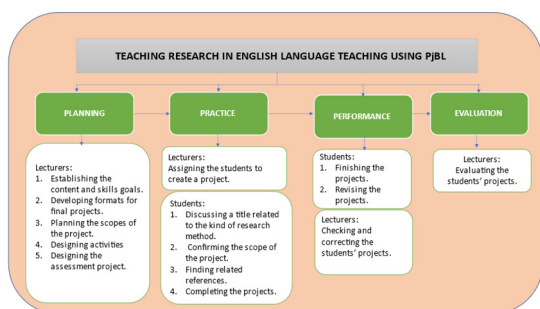


Figure 1: The PjBL procedures for developing RELT materials.

The RELT materials developed by using the steps of PjBL above. The materials developed are in two products; they are students' book and lecturer's book. Both of the products have been implemented to the students in the process of teaching and learning RELT.

The materials developed for learning research in English Language Teaching are:

- 1) Introduction to Research in English Language Teaching and Project-based Learning.
- 2) Quantitative, Qualitative, and Mixed-Method
- 3) Descriptive Research
- 4) Experimental Research
- 5) Correlational Research
- 6) Comparative Research
- 7) Classroom Action Research
- 8) Language Research
- 9) Ethnography
- 10) Phenomenology

The differences between students' and lecturer's books are that the students' book consists of learning objectives, materials, and the exercise at the end of the book chapter as the projects. However, the lecturer's book beside consists of such information similar to the students' book, it also consists of syllabus and the complete evaluation but in the materials, not all the materials stated in the students' books available in it. The 9th and 10th materials are not served all to the students who learn RELT; they are as supplementary topics, if necessary, in learning English teaching research.

Further, we also see for the practicalities of the products as seen in the table below:

Table 2: Practicalities of the products.

No.	Categories	Mean -score	%	Inter-pretation
1.	Usability of learning materials.	0.70	70%	Practice
2.	Easiness of procedures of learning RELT by PjBL	0.70	70%	Practice
3.	efficient to be used	0.80	80%	Practice

The result showed that the books developed are practice; it means that the books can be used for teaching the students to learn research in English Language Teaching. It is realised that the usability of the books and the easiness of the procedures of using the books are 70%, while the efficient of the books to be used in 80%. Based on the result, the researchers believed that the books can be useful for many students who learning research, especially for English Language Teaching.

In addition, the existence of books has helped the students in learning research in English Language Teaching. The result of the small try-out showed that

5 (five) students who used as the students who get the small treatment had good results in making a research proposal on experimental research.

Table 3: The Result of Small try-out.

No.	Students	Pre-Test	Post-Test
1	DW	64	68
2	SD	68	72
3	INR	64	74
4	FYS	54	58
5	DEL	78	80
	Total	328	352
	Average	65.6	70.4

By looking at the table, it can be grasped that the students' pre-test result was in mean-score 65.6; it is in enough comprehension of the materials. Then, the result of the post-test showed a mean of 70.4; it is on the level of good. Although the range of scores is not so different, it has shown the different results between pre and post-test of the students after trying out to study RELT materials of experimental research by using PjBL

Based on the result of the small try-out, we decided to implement the products to the students into two research kinds; they are experimental research and correlational research. The experimental research with pre-test and post-test control group design has been chosen as the design of the research. It has been done in two groups which consist of 15 (fifteen) students in each group (experimental and control group). The result proved that the student's understanding of the kinds of research methods is good because the students achieved an average of 68.30 (good category) while before learning with the materials given, they only got 59.85 (in enough category). The range of achievement was 8.45. Meanwhile, the result of the test in the control class presented that the score in the pre-test was 59.10 and in the post-test was 62.95 with a range of improvement of only 3.85. It means that there is a significant difference between the students who taught by using learning materials by PjBL with the materials available.

In addition, when it is compared, to the result of the post-test for the experimental and control class, it is seen that there is a difference between them, and the students who learn the RELT materials developed are getting better than those who did not. Know whether the products, the materials, are effective or not to the student's learning, it can be seen from the result of the t-test. Before, it is needed to check the

result of paired samples statistics as in the table below:

Table 4: The result of paired sample statistics.

Paired Samples Statistics					
		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	PreTest	59.85	20	16.135	3.608
	PostTest	68.30	20	16.445	3.677

Based on the result it is shown that the pre-test score was smaller than the post-test (59.35<68.30); it can be concluded that RELT materials developed by PjBL are effective in the students' result of learning.

Next, to see the hypothesis of whether it is significant the effectiveness of RELT materials on the students' learning results let's see the result of paired sample t-test. When the result of Sign. < 0.05, the result of students' learning is effective by using the materials developed; however, it is the result of Sign. >0.05, it means there is no significant result of the products to the student's learning.

Based on the result of the t-test (to test the hypothesis), it is counted that the Sign. The value of the t-test was 0.001 and it is smaller than 0.05 (0.001 < 0.05) or the t-test (5.878) is counted higher than the t-table (2.093), and it can be concluded that there is the significant effect of learning RELT by using materials developed by PjBL through ADDIE model.

The result can be seen in the following table.

Table 5: The result of t-test.

Paired Samples Test								
	Paired Differences				t	df	Sig. (2-tailed)	
	Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
				Lower				Upper
Pair 1 PreTest - PostTest	-8.950	6.809	1.523	-12.137	-5.763	-5.878	19	.001

Based on Based on the value of the t-test above, it can be said that there was a significant effect of materials developed using PjBL on the students' results on learning RELT of the English students UIN Syahada Padangsidimpuan.

Further, the students' attitudes to the materials are also needed to be known. It is known that more than 60% of English students had good responses to the materials developed. It is found that about 73% of students felt comfortable with the materials based on PjBL given, and about 68% were motivated and interested to learn. The last, about 75% of students said that through this material they understand the

method of research. As a result of the student's perception, the researchers inverted that the students had a positive perception of the projects, on the materials developed, that is the RELT materials developed by PjBL.

Finally, besides the students' perception, based on the result of practicalities and effectiveness, it can be concluded that the products or the materials developed are valid, practical, and effective to be used for learning Research in English Language Teaching.

It is implied that the materials developed can be used for the University students, not only for UIN Syahada students but also for every student who learns research methodology related to the kinds of research developed for the materials learning.

By understanding the result of this study, it is known that this result is supported by what the previous researchers found. As found by Hidayah, et al, (Hidayah et al., 2021) PjBL has the advantage to make the students' competencies improve. What has been done by some experts before, such as Putra, et al (2020) and Zuhrita, et al (2016), and Wahyuni (2014), have also proved by this research. However, Putra did it for entrepreneur materials while this research is for research materials. In addition, when this research has done about research materials and Zuhrita developed the materials for ASSURE model. The last is Wahyuni who stated that PjBL is really beneficial for teaching educational research in Linguistics, however, this finding is to the research in English Language Teaching. What have been stated before have been as evidence that developing materials can be done by using the PjBL method, and PjBL model is very helpful in giving practical experiences to the students; however, the research methods in ELT are a kind of subject to prepare the students in building their real projects, their thesis.

Finally, it is necessary to see the novelty of this research. As stated before that there are no materials developed for research method in English language teaching subject, so it becomes an interesting materials when the students asked to study by using PjBL. Another novelty that can be show up is that this research has 4 steps (planning, practice, performance, and evaluation) in learning by using PjBL, while the process of learning PjBL by Wahyuni is only 3, planning, practice and performance. The findings is still needed to be enlarged to make the students become better and to build more references in research in English language Teaching for Indonesia students who learn English as their major.

5 CONCLUSION

The result of validation from the instruments is stated as valid and reliable. It is seen from the result of the validation score that every instrument and the products are valid. Two products have been developed in this study; they are students' books and lecturers' guidance in teaching Research in English Language Teaching (RELT) by using Project-based Learning (PjBL). Besides valid, the products, and the materials for teaching and learning RELT based on PjBL was also valid.

The students' responses to the materials are really good and they were also enhanced in learning the material of RELT by using PjBL, which is proved by the result of implementation. It is seen that the students' result in understanding the materials and in making the final project that learn by using PjBL is better than the students who did not. Finally, it is stated that the learning materials of RELT by using PjBL are valid, practiced, and effective; so, it can be used for teaching the students in IAIN Padangsidempuan the learning subjects of research, and other colleges which have the same topic related to research methodologies. Z-Generation needs materials for learning that is not only by reading books but also by practicing through a project and integrating with digitalization. Unfortunately, this study was not developed for learning English subjects; however, further researchers need to explore more about developing materials based on PjBL to study many aspects of English learning.

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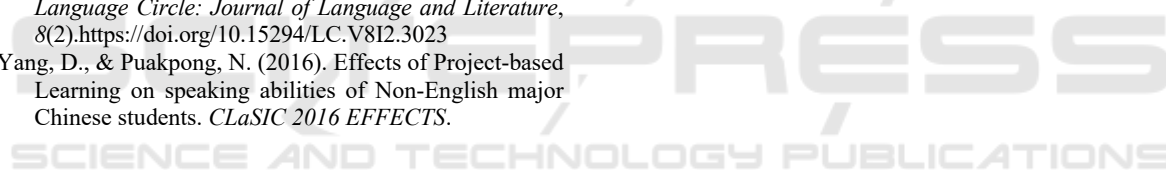
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