

CHAPTER II

LITERATURE REVIEW

2.1 Theoretical Framework

2.1.1 Developing

a. Definition of Developing

In the context of Research and Development (R&D), development refers to a systematic process aimed at producing new products, procedures, or methods through intensive research and experimentation. Richey and Klein in Lee et al. (2023) explain that in the context of education, R&D is a process that includes the design, development, and evaluation of programs, products, or procedures to achieve specific goals. Educational development in R&D combines educational theory with practical experimentation to find innovative solutions that benefit students and teaching. Therefore, R&D in education not only focuses on physical products but also on the development of curricula, assessment tools, and more effective teaching methods.

Research and development is a type of research that involves treatment, which starts from a need or problem that requires a solution based on a certain theoretical basis. This method aims not only to produce and improve a product. This process involves a series of systematic steps in designing new products or improving existing products.

Research and development is one of the research methods widely used in the academic world today, especially to design and test the effectiveness of a product. The main objective of this method is to produce products that can answer the problems found through a series of processes, starting from identifying potential problems, designing, to developing products as solutions that are considered the most appropriate. In the context of education, research and development methods can be used to develop various models, such as teacher

training modules, school curricula, character education models, and education personnel training modules.

Borg and Gall (1989) state that educational research and development is a process used to develop and validate educational products. In other words, research and development does not only focus on creating or perfecting a product, but also aims to gain new knowledge or answers to practical problems faced in the world of education.

The research and development method is a research approach used to produce a certain product and test the effectiveness of the product. In the product of development process, a needs analysis is first conducted to ensure that the product being developed is really needed. Furthermore, a testing process is needed to assess the extent to which the product is effective and can be used more widely in the community (Arifin & Nurdyansyah, 2018).

b. Characteristics of Research and Development

According to Sumarni (2019), there are four main characteristics in the research and development method, namely:

- 1) Researcher conducts a review of previous research results that are relevant to the product to be developed. This study aims to find a strong foundation, both theoretically and empirically.
- 2) Product development is carried out based on the results of the study. Researcher designed the product by referring to the needs that had been identified, as well as conducting a literature review to strengthen the development design.
- 3) The product was trialed in the field in accordance with the context of its use. The trial was conducted in stages, starting from a limited scale to a wider scale, to see the effectiveness and user response to the product.

- 4) Researcher revises the product based on the findings during the trial. Revisions can include the content, appearance, and how to use the product, and are carried out to perfect the product before further dissemination.

c. Purpose of Developing

The main goal of development in the context of Research and Development (R&D) is to create products or methods that can improve the effectiveness of learning and meet the specific needs of students. In education, this includes the development of learning aids, curricula, and teaching methods that are more innovative and relevant to the changing times. Kusumarasdyati (2020) says the goal of development in R&D is to enhance innovation in education, whether in terms of technology, curriculum, or teaching strategies. This innovation aims to address the ongoing challenges in education, such as the utilization of technology, changing student needs, and the demands for a more dynamic curriculum.

Therefore, the development objective of this study is to develop reading material based on Project-Based Learning model that support the effectiveness of reading learning and are able to meet the specific needs of eleventh grade high school students in understanding texts in a more meaningful and contextual manner. This development is carried out to present more innovative, engaging, and relevant material that align with students' daily lives, while also encouraging their active participation in the learning process. By integrating the PjBL model into reading material, it is hoped that students would understand the content of the text.

d. Developing Based on Students Needs Analysis

Development based on student needs is an approach used in R&D to tailor products or methods to the specific characteristics, interests, and challenges faced by students. This can be understood through Need

Analysis. Need analysis is a systematic process used to identify, evaluate, and understand the needs or problems. Need analysis is an approach used to gather information about the needs of students or target groups related to learning, so that solutions can be designed according to their real conditions.

Need analysis does not only focus on the academic aspects of students, but also includes other factors such as motivation, strengths and weaknesses, and social and emotional aspects that affect their learning process. Richards in Akhadalievich & Nozimakhon (2022) states that need analysis includes the collection of data from various sources, such as interviews with students, surveys, classroom observations, and related document reviews, to understand in more depth what is needed in the learning context.

2.1.2 4D Model

a. Advantage and Disadvantage of 4D Model

The advantage of the 4D model is that it does not take a relatively long time, because the stages are relatively simple. The disadvantage of the 4D model is that it only goes as far as the dissemination stage, and there is no evaluation, where evaluation refers to measuring the quality of the tested product. Product quality testing is conducted for the results before and after using the product (Kusmaryani & Ramli, 2023).

The advantage of this model is its relatively simple development stages, which make it easier for researcher to implement each process systematically and efficiently. Clear and structured procedures mean that the time required to complete product development is not too long compared to other more complex development models. In addition, each stage in the 4D model is designed to ensure that the resulting product has a strong theoretical and empirical foundation through needs analysis, thorough design, and development accompanied by validity testing and revision.

The disadvantage of this model is that the final stage only reaches Disseminate, without explicitly including the Evaluation stage as part of the development process. In fact, evaluation is an important component in determining the quality and effectiveness of the product that has been developed. This evaluation not only involves assessing the design and content of the product but also measuring students' learning outcomes before and after using the product. Thus, the absence of an evaluation stage in the 4D model can hinder obtaining a comprehensive understanding of the success of the product's implementation in the field.

b. Stage of 4D Model

The 4D model is an instructional development model introduced by Kusmaryani & Ramli (2023) says this model consists of four main stages, namely Define, Design, Develop, and Disseminate. This model is designed to produce learning products that are systematic, effective, and tailored to the needs of learners.

1. Define is the stage focuses on needs analysis as the initial basis for development. There are five important steps taken at this stage, namely:
 - a. Initial Final Analysis is carried out to identify and formulate the main problems that will be solved through the development process.
 - b. Learner Analysis aims to recognize the characteristics of students as the target of device development. The aspects analyzed include students' abilities, motivations, and skills.
 - c. Task Analysis involve researcher analyze the main skills that students need to master, so that relevant learning tasks can be determined.

- d. Concept Analysis was conducted to analyze the learning concepts to be taught. The researcher formulates the steps to deliver the material logically and systematically.
 - e. Specifying Instructional Objectives is to formulate the expected learning objectives, including the behavioral changes that students want to achieve after following the learning process.
2. Design is the stage aims to develop a conceptual framework and design learning tools.
 3. Develop is the stage conducted to produce a product or learning model. At this stage there are two important steps, namely Expert Validation and Product Revision.
 4. Disseminate is the stage dissemination of the product. Dissemination is done through individuals, groups, or a wider system. At this stage, product implementation is also carried out to evaluate the extent to which the product can be applied in a real learning context, including through testing the validity and feasibility of using the developed media.

2.1.3 Reading Comprehension

a. Definition of Reading Comprehension

The ability of the reader to extract information from written texts and process it cognitively in order to exhibit mastery or understanding of the material is known as reading comprehension. This comprehension is accomplished when the reader can comprehend the information in the text by processing it, responding to it, or building it up through actions. In addition, reading comprehension is the process of reconstructing the reader's prior knowledge, which promotes critical interpretation and in-depth examination of every passage to comprehend the reading material (Al Aziz & Yusanti, 2020).

Understanding a written text is a multidimensional cognitive process. To identify the essential components of text comprehension, an

understanding of the mechanisms of meaning construction by readers is fundamental. As stated by Gough in Bruggink et al. (2022) reading comprehension involves two main skills namely the ability to identify words in a text through the conversion of letters into sounds and their combination into words (decoding), and the ability to understand information presented orally (language comprehension).

Reading comprehension is the ability to understand, interpret, and use information from written texts. It includes finding specific information, skimming for general ideas, integrating information from different parts of the text, and using the meaning for academic or professional purposes such as writing or analyzing texts. According to Sari et al. (2020) says reading comprehension is an active and complex process that involves understanding written language, constructing meaning based on the type of text and the context, and applying that meaning appropriately.

b. Strategy of Reading Comprehension

Azis & Yusanti (2020) suggest six steps to improve students' reading comprehension through text structure-based tasks. These steps are designed to help students construct meaning and integrate information from the text. The steps include having students identify the type of writing used by the author, having students analyze the way the author organizes the text, having students discover how the text is developed, having students work in pairs to identify how ideas are grouped, having students find the main idea of each paragraph, and having students analyze the relationship between paragraphs in the text. In teaching reading, the teacher usually uses some questions as their technique in helping students to comprehend a text. There are six reading comprehension strategies according to McNamara in Mufidah et al. (2022), namely:

- a. Comprehension monitoring: this is the ability of students to realize how well they understand the text they are reading. If

they feel they do not understand, then they need to use other strategies to help them understand the content better.

- b. Paraphrasing: this strategy is carried out by rephrasing the content of the text using one's own words. This is very helpful for readers who are less skilled at understanding the meaning of sentences, paragraphs, or the text as a whole.
- c. Elaboration: this is the process of connecting information from the text with existing knowledge. It is usually done by asking questions or drawing conclusions based on the content of the reading.
- d. Logic or common sense: this strategy uses logical reasoning or general knowledge to understand the reading, especially when students do not yet have specific knowledge about the topic being read.
- e. Predictions: this strategy involves guessing the content of the text based on the information that has already been read. Although not always suitable for scientific texts, this strategy is effective when reading narrative or descriptive texts.
- f. Bridging: this is the ability to connect ideas between sentences or paragraphs in a text. This strategy is very important for students to understand the relationship between parts of the text and form a complete understanding.

2.1.4 Project-Based Learning (PjBL)

a. Definition of Project-Based Learning (PjBL)

The term project has long been used in agricultural science to refer to a planned investigation that takes place over a long period of time. The concept was later adopted by science and skills teacher for its value in practical learning. Project-Based Learning is understood as a long-term activity that includes both individual and collaborative tasks, such as designing a research plan, collecting data, and reporting results orally or in writing. In addition, PjBL also engages students in relevant real (or

simulated) problems, where they have responsibility for designing their own learning process.

Anggraini et al. (2022) define project-based learning as a learning model that builds students' attitudes, knowledge, and abilities through projects or activities. This model starts from real-world situations to contextually link new knowledge. PjBL is implemented systematically, allowing students to learn through the process of designing products. By emphasizing relevant complex tasks, PjBL encourages students' active involvement in solving teacher-provided problems. Students have control over their learning process through real projects that result in real products. In addition, PjBL reduces competition in the classroom and fosters cooperation between students, thus creating a more interesting and meaningful learning experience.

Project-Based Learning is an activity in the teaching and learning model to make students more active and creative, because they had to make or develop a product at the end of the learning. Project-based learning positively changed English reading comprehension. In PjBL, the learning process is changed from teacher centered to student-centered. So, the learning process will involve the student's active participation, especially in reading activities (Lumanauw et al., 2022).

Project-Based Learning originated from the Progressive Education Movement in the United States in the early 20th century, which emphasized student centered learning through hands on experience and real world exploration to achieve deeper understanding. PjBL is a learning model that allows students to acquire knowledge, skills and abilities by building their own understanding through investigating real questions or through making products. This model encourages students to be actively involved in designing, solving problems, making decisions, and conducting investigations independently within a certain period of time, ending with tangible results in the form of products or presentations (Jones in Song et al., 2024). Project-Based Learning is a learning model that uses problems as the first step in gathering and

integrating new knowledge based on its experience in real-life activities (Berhиту et al., 2020).

b. Characteristics of Project-Based Learning (PjBL)

The characteristics of Project-Based Learning (PjBL) have been widely discussed in various educational studies. Santyasa, cited in Dahri (2022), argues that there are four main dimensions that characterize this learning model:

- a) The first dimension is Content which emphasizes the importance of students building their own understanding of learning materials through complex and challenging problems. Students are invited to explore ideas, connect various concepts found, and face problems that do not have one definite answer, thus fostering critical thinking about the real problems they encounter.
- b) The second dimension is Condition, where PjBL provides space for students to learn independently. Students are responsible for organizing their tasks and time, selecting relevant topics, and undergoing a self-centered learning process. In doing so, they engage in inquiry activities that reflect community life, as well as learn to manage time effectively and act with discipline like a professional.
- c) The third dimension is Activity, which emphasizes group work. Students work collaboratively on an enquiry over a period of time, solving problems and developing original ideas. They also build new skills through critical thinking processes and the use of relevant technology. At this stage, they receive feedback both from evaluation results and expert opinion to reflect on and refine their work.
- d) The fourth dimension is Outcome, which are characterized by the existence of a tangible product as the output of the project. The product reflects the results of students' investigations, as

well as demonstrating their ability to self-evaluate, respond to challenges and prove the personal competence they have developed throughout the learning process.

c. Principles of Project-Based Learning (PjBL)

Larmer in Hamidah et al. (2020) explain that Project-Based Learning has seven main principles that guide its implementation:

- a) The first principle is a challenging problem or question. Learning begins with real problems or deep questions that can trigger students' curiosity. This problem or question serves as a starting point for students to understand what they need to learn, what kind of investigation activities will be carried out, what tools are needed, and how the steps are completed.
- b) The second principle is continuous inquiry. This means that the enquiry does not stop when the question is asked, but continues throughout the learning process. Through this process, students are trained to think critically, solve problems independently, collaborate with friends, and manage their time and tasks effectively.
- c) The third principle is authenticity. In PjBL, learning is connected to real situations that are close to students' lives. This authenticity can be seen from three sides. Firstly, the projects students create are based on real experiences, such as creating a restaurant menu book or role-playing as buyers and sellers. Second, the activities and tools used in the project reflect real-world situations, such as calculating a travel budget or writing a letter to the editor of a magazine. Thirdly, the results of the project are expected to have a positive impact on the environment, for example by making a poster of prohibitions in school to improve discipline.
- d) The fourth principle is student voice and choice. In this approach, students are given the space to express ideas and

make decisions during the project. Thus, they can develop critical thinking skills and problem-solving abilities. For example, students are given the opportunity to determine the form of the project to be made, or give opinions when the teacher presents the main problem or question.

- e) The fifth principle is reflection. Reflection is done by both students and teacher, and aims to review the learning process. Through this activity, students can understand what went well, the difficulties they faced, and how to overcome them. Reflection also helps students develop self-awareness of their learning process.
- f) The sixth principle is criticism and revision. In the implementation of the project, students are encouraged to receive input from various parties, both from group mates, and teacher. This input is used to improve and refine the work to make it better and in accordance with the learning objectives.
- g) The last principle is the published product. The final results of students' projects are not only assessed, but also presented to the public, both in the classroom and in the wider environment. Through this publication, students feel proud of their work and are motivated to give their best.

d. Stages of Project-Based Learning (PjBL)

According to Stoller in Hamidah et al. (2020), the implementation of Project-Based Learning in language learning is generally divided into three main stages, namely the planning, implementation, and reporting stages. Each of these stages includes a number of interrelated and sequential learning activities.

- a. In the planning stage, there are five main activities that need to be done. Firstly, students select a relevant and interesting project topic. Secondly, pre-communicative activities are conducted to equip students with initial information before

starting the project. Third, students develop essential questions that will guide the direction of the project. Fourth, they begin to design a structured project work plan. Fifth, students developed a project schedule or timeline as a time guide during the work.

- b. The next stage is implementation, which focuses on the completion of the project. In this stage, students execute all the plans that have been drawn up earlier to produce the final product of the project.
- c. The final stage is reporting, which involves two important activities. Firstly, students carry out an assessment of the results of the project that has been done. Secondly, they conduct an overall evaluation of the project implementation process and the learning activities that have been carried out.

The steps of Project-Based Learning model according to Rais in Sadaruddin et al. (2023):

- a. Opening the lesson with a challenging question: The lesson starts with a driving question that can ask the students to do an activity.
- b. Planning the project: Planning is done collaboratively between the teacher and the students.
- c. Developing an activity schedule: The teacher and students collaboratively develop activities to complete the project.
- d. Supervising the project: The teacher is responsible for supervising the students' activities in completing the project.
- e. Evaluation: At the end of the learning process, the teacher and students reflect on the activities and results of the project.

The implementation of the project activities refers to simplified PjBL steps, namely: Opening the lesson with a challenging question, planning the project, developing an activity schedule, supervising the project, and

evaluation is the process or activities through project checklist sheets. At the end of the activity, students and researcher conducted a joint reflection to review their understanding and learning process.

- a. Opening the lesson with a challenging question: the activity begins with a guiding task or question that encourages students to engage in a simple, real-world-related project. In this case, students were asked to bring a plant or flower to class as the starting point of the project.
- b. Planning the project: the teacher introduces the project clearly, explaining its purpose, steps, and expected outcomes in a way that is easy to understand.
- c. Developing an activity schedule: students carry out the project task for example, bringing a flower or plant and then explaining it to the class. This encourages them to connect the activity with the reading material and real-life context.
- d. Supervising the project: while the project is being done, the teacher observes and supports students to ensure that they are actively engaged and following the instructions.
- e. Evaluation: at the end of the session, students and the teacher reflect briefly on the project conducted using a PjBL Model Checklist, which helps the teacher evaluate whether students' activities align with the characteristics of PjBL model.

2.1.5 Product Evaluation Aspects

Evaluation of the developed reading material should involve students as direct users to obtain information about the acceptability and effectiveness of the material. Student responses can provide insight into the quality of the reading material from the perspective of the end users. According to Minto (2024), the evaluation of reading material must be conducted comprehensively and systematically, taking into account aspects of usefulness, relevance, engagement, and ease of use to ensure the success of implementation in learning. In this context, there are eight assessment

aspects used in the student response questionnaire regarding the developed reading material, namely:

1. Readability of content refers to the extent to which the content of the material can be easily understood by students and does not confuse readers.
2. Engagement of content relates to the visual appeal, content, and presentation of the material that can motivate students to actively engage in the learning process.
3. Support for learning refers to the extent to which reading material can help students achieve learning objectives and facilitate understanding of the subject matter.
4. Relevance to student needs emphasizes the importance of alignment between the content and the topic of the reading material.
5. Ease of use refers to the ease of accessing and understanding the instructions or features contained in the reading material.
6. Interactivity of reading material refers to the extent to which reading material are able to facilitate active student participation through activities that encourage direct involvement in the learning process.
7. Practicality in usage which assesses the efficiency of reading material in a real learning context can be used independently without much help from teacher.
8. Feasibility in learning, which covers the extent to which reading material can be applied in learning at school and at home.

2.2 Relevant Research

Based on the theoretical research conducted, some preliminary studies related to the research conducted by researcher are listed below:

1. This research was done by Wiratmo et al. (2022) with the title **“Improving Students’ Reading Comprehension Using Project-Based Learning at VII F Grade of SMPN 43 Surabaya”**. The

objective of this study was to describe whether the Project-based learning method can improve students' reading comprehension at VIII F grade of SMPN 43 Surabaya. The research design uses the Classroom Action Research (CAR) method. The time was arranged from May to September 2022. There were 39 students in the class. The class consist 20 boys and 19 girls. The student's score indicated the result of implementation. The students' score increase. The Project-based learning method improved the students' achievement in reading notice text significantly and helped the students become active and creative in learning. The Planning, Acting, Observing, and Reflecting of teaching-learning use of Project-based learning were successfully conducted. It can be shown that researcher can make a lesson plan and apply PjBL as a method in teaching reading Notice text. The teacher can combine Project-based learning with another method if conditionally to make students don't bored while receiving the materials.

2. This research was done by Lumanauw et al. (2022) with the title **"Improving Students' Reading Comprehension Using Project-Based Learning"**. The aim of this research was to find out whether the use of Project-Based Learning is effective in improving the eighth grade students' ability in reading comprehension or not. The research was conducted at SMP Berea Tondano. The class consists of twenty students as the subject of the study. This research is quantitative research with one group pre-test and post-test design. Pre-test was given before the treatment. After giving the treatment, the writer collected the data for post-test. The test that used in this test was multiple choices. In this research, the maximum score of the students is 9 and minimum score is 3. The result of this research showed that the mean score of pre-test is 5.00 and post-test is 7.25. This means that the result of post-test is higher than pre-test. This result may lead to conclusion that using Project-Based Learning was considered effective to improve students' ability in reading comprehension. The

results of the study show that Project-Based Learning is considered effective for improving students' ability in reading comprehension, but it is not explained whether all reading text topics are suitable for PjBL to improve students' ability in reading comprehension.

3. This research was done by Lubis (2024) with the title **“The Development of Reading Comprehension Material Based on Vocabulary Collection Strategy at SMAN 13 Medan in Academic Year 2022/2023”**. The objective of this research is to develop the reading comprehension materials for Senior High School students based on Vocabulary Self-Collection Strategy at SMAN 13 Medan. The data of this research are quantitative and qualitative. The researcher uses the percentage of the questionnaire of need analysis for the quantitative data. Meanwhile, for the qualitative, the researcher uses the content analysis for describing the data. The data is collected by using questionnaire. The result of needs analysis showed two parts, those were target needs and learning needs. After gathering the need analysis, the researcher implemented ADDIE model for developing the materials. In order to maintain the students' needs, the researcher created the theoretical model which consists of two big components namely; the components of reading comprehension and vocabulary self-collection strategy. The researcher develops the theoretical model which has been verified by the expert. The researcher finds that the model can give the big advantages to the students' reading skills development. But in this study did not explain what reading text topics were developed based on the results of the students' needs analysis, so can enhance the students' comprehension of the text using Vocabulary Collection Strategy.

2.3 Conceptual Framework

In teaching learning process, there are often challenges in developing reading comprehension. One of the main challenges is students' low interest in reading English texts. Another factor that is often found is students 'difficulty in understanding the content of the text, which is often caused by students' lack of active involvement in the learning process. To overcome these challenges, an innovative approach that puts students at the center of learning is needed. One effective model is the project-based learning (PjBL) model. In this model, students are encouraged to be actively involved in learning through in-depth exploration of the material. PjBL provides opportunities for students to work collaboratively in groups and create outputs based on their understanding. Thus, PjBL is able to provide a more meaningful learning experience, create an interesting and fun learning atmosphere. Based on the background above, researcher was interested in raising the title "Developing the Eleventh Graders' Reading Comprehension Material Utilizing Project-Based Learning Model.

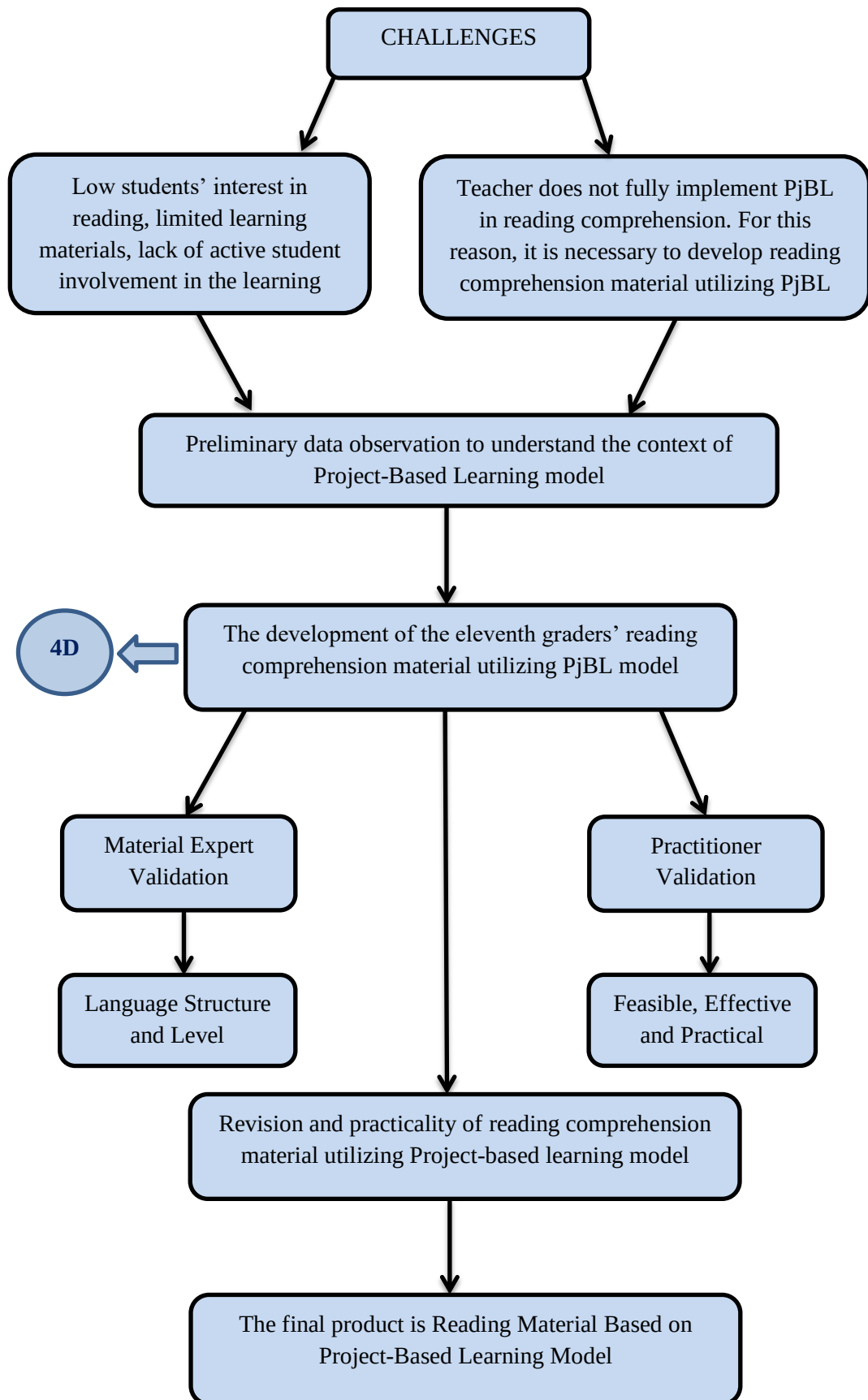


Figure 2.1 Conceptual Framework