CHAPTER II

LITERATURE REVIEW

A. Perceptions

Perception is one of the most important cognitive aspects of humans. This allows humans to know and understand the world around them. In this interaction, an individual receives a stimulus from outside himself. This stimulus is what is called perception. Perception is the experience of objects, events, or relationships obtained by inferring information and interpreting messages. Perception is giving meaning to sensory stimuli. Perception is the process of understanding or giving meaning to a piece of information on a stimulus. (Sánchez et al., 2014) states that Perception is defined as a process that involves the entry of messages or information into the human brain.

According to (Mah & Ifenthaler, 2018) in simple terms, perception means the way a person understands something or how he sees an object. (Salomon & Kolikant, 2016) states that perception is defined as a process that combines and organizes our sensory data (sensing) to be developed in such a way that we can be aware of those around us, including being aware of ourselves, and in perceiving the surroundings, we must involve our senses, an argument will be born that comes from the information collected and received by our sensory receptors so that we can combine or classify the data that we have received previously through our initial experience.

According to (Suvedi et al., 2015) perception is an active process of sorting, organizing, and interpreting people, objects, events, situations, and activities. Humans sort out only certain things in their lives, then organize and interpret them selectively. Perception shapes how humans understand other people and their world as well as the choices they make in their lives.

1. **Perceptions Among Tertiary Students**

Everyone has their perception of something they are experiencing. However, a perception among tertiary students is also not uncommon to have various things such as learning in the classroom, their experience while studying some courses, and many other things related to their university life.

For example, a study was done by (Sultan & Javaid, 2018) where students perceive project-based learning (PjBL) implemented in the English composition course. Students are asked to express their perception of the implementation of the PjBL method in a course at the university to uncover the benefits and challenges associated with PjBL from the student's point of view. This is why perceptions among tertiary students are important, Perception becomes important because a person's habits are based more on the perceptions they feel compared to existing reality. Some factors will form and sometimes distort perception. According to (Cardona & Bravo, 2012) in a study related to the perception of students in Colombian university, perception is important to increase student intellectual growth.

In the process of perception, a person is required to assess an object that can be positive or negative, happy or not happy. With the perception, an attitude will be formed, namely a stable tendency to act or act in a certain way in certain situations. A person's attitude to an attitude object is a manifestation of the three components that interact with each other to understand, feel, and behave towards the attitude object. These three components interact and are consistent with one another. So, there is an internal organization between the three components. Perception has three components, namely, the cognitive component, an affective component, and a conative component.

a. Aspects of perceptions

According to (Hardini, 2015) perception has three main components namely, cognitive, affective, and conative.

1) Cognitive

This aspect concerns the components of knowledge, views, expectations, ways of thinking, and gaining knowledge and past experiences. Everything is obtained from the thoughts of the individual perpetrators of perception.

2) Affective

This aspect concerns the individual's feelings and the emotional state towards certain objects as well as everything that concerns the evaluation of good and bad based on one's emotional factors.

3) Conative or psychomotor

This aspect concerns the motivation, attitudes, behavior, or individual activities according to their perception of a particular object or situation.

b. Factors affect perception

Several factors influence the perception of an individual. how can we know that an individual can see the same thing but have a different perception, this can happen because of factors that exist in the formation of perceptions in the object or target or the context of the situation. According to (Stefanou et al., 2013) some factors affect perception:

a) Internal factors

The internal factor is a factor that influences perceptions from within the individual. Internal factors include several things, including the following:

(1) Physiological. Information enters through the sense tools, then the information obtained will affect and complement efforts to perceive each person differently so that interpretation of the environment can also be different.

(2) Attention. Individuals need a certain amount of energy expended to pay attention to or focus on the physical form and mental facilities that exist in an object. Each person's

energy is different so one's attention to the object is also different and this will affect the perception of an object.

(3) Interest. Perception of an object varies depending on how much energy or perceptual vigilance is moved to perceive it. Perceptual vigilance is a person's tendency to pay attention to a particular type of stimulus or it can be said to be an interest.

(4) Unidirectional needs. This factor can be seen from how strong an individual is in looking for objects or messages that can give answers according to themselves.

(5) Experience and memory. Experience can be said to depend on memory in the sense of the extent to which one can remember past events to know an excitatory in a broad sense.

(6) Mood. The emotional state influences a person's behavior, this mood indicates how a person feels at times which can affect how a person receives, reacts, and remembers.

b) External factors

(1) The size and placement of an object or stimulus. This factor states that the greater the relationship of an object, the easier it is to understand. This shape will affect the perception of the individual and by looking at the shape the size of an individual object it will be easy to attention in turn to form perception.

(2) Color of objects. Objects that affect light more are easier to understand (to be perceived) compared to fewer.

(3) The uniqueness and contrast of the stimulus. External stimulus whose appearance with the background and surroundings is completely beyond the expectations of other individuals will attract a lot of attention.

(4) The intensity and strength of the stimulus. The external stimulus will give meaning more often noticed than only one view. The power of a stimulus is the power of an object that can affect perception.

(5) Motion or movement. Individuals will pay more attention to objects that provide movement within range of view than stationary objects.

B. Project Based-Learning

The project-based learning model (PjBL) is a learning model that uses projects (activities) as the core of learning. PjBL is regarded as a compelling learning approach and is focused on projects that give students chances to use their scientific knowledge in practical activities (Genc, 2015). Project-based learning (PjBL) is a student-centered form of instruction that is based on three constructivist principles: learning is context-specific learners are involved actively in the learning process and they achieve their goals (Kokotsaki et al., 2016).

1. PjBL On Tertiary Level

Project-based learning models make students required to learn through direct experience based on problems. Students' thinking skills are completely optimized through the process of group work or a systematic team so that students can empower, hone, test, and develop their thinking skills continuously. One way to realize the success of teaching and learning activities is to choose the right learning model. Learning models that can improve group member cooperation and communication skills in both groups and individuals, one of which is the Project-Based Learning learning model (PjBL).

PjBL can be applied to lectures because this method has great potential to create meaningful experiences for students. Meaningful experience when it comes to practicing good communication and collaboration skills when students work in groups. According to (Saenab et al., 2017) the process of teaching and learning in universities should be transformed into an orientation that can equip students with the skills needed today. To answer these challenges requires the integration of 21st-century skills into the same course. It includes thinking skills, and action skills.

According to (Rahmania, 2021) there are characteristics of PjBL:

a. In this project-based learning, as the name implies the project becomes central to learning.

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c. Students build their knowledge by conducting independent investigations and teachers act as facilitators.

d. Project-based learning demands student activity because this learning model is student-centered. Students act as problem-solvers for the problems discussed.

e. Student activities are focused on activities that resemble actual activities or situations. This activity integrates static tasks to produce a professional attitude.

According to (Kim, 2021) project-based learning (PjBL) has five objectives:

a. To improve students' ability in project problem-solving.

b. To acquire new knowledge and skills in learning.

c. To make students more active in solving complex project problems with tangible product results.

d. To develop and improve students' skills in managing tools and materials to complete tasks or projects.

e. To increase collaboration between students, especially in activities that are the group.

According to (Dole & Doss, 2017) PjBL is implemented as follows:

a. The lesson is opened by presenting an essential question. These questions should be able to encourage students to do activities that help students to answer the problem or question. Usually, the topic is taken according to real-world reality and begins with an in-depth investigation.

b. The next step is to plan the project. Project planning is done collaboratively between teachers and students. Hopefully, students will feel they have the project. Planning includes rules of the game, the selection of activities that can support answering essential questions by integrating a variety of

supportive subjects, as well as informing tools and materials that can be utilized to complete the project.

c. After planning, the next is to create a timeline or activity schedule. The schedule will make students focus on their activities. Therefore, the completion time of the project should be clear. Teachers should allow students to explore new things and the teacher must remind them if the student's activities deviate from the purpose of the project. Because projects undertaken by students take a long time the process, teachers can ask students to complete their projects in groups outside of school hours. The results of the completed project will be presented in the class.

d. The teacher performs the task of monitoring the course of the project. This monitoring activity is carried out by facilitating students in each process. At this stage, the teacher acts as a mentor who teaches students how to work in a group. Each student can choose their role by not ruling out the interests of the group.

e. Once the project is complete, it's time to conduct an assessment of the resulting product. Assessments are conducted to measure standard achievement, evaluate each student's progress, provide feedback about the level of understanding that has been achieved by students, and further as a teacher's guide in devising the next learning strategy. Product assessment is usually done when each group presents its product in front of another group in turn.

f. The last step in the implementation of PjBL is evaluation activities. At the end of the PjBL learning process, teachers and students reflect on the activities and results of projects that have been done. The process of reflection can be done individually or in groups. At this stage, students are asked to express their feelings and experiences during the completion of the project.

There are also according to (Jalinus et al., 2017), 7 steps in PjBL: (1) The formulation of expected learning outcomes; (2) Understanding the concept of teaching material; (3) Skills training; (4) Designing the project theme; (5)

Making the project proposal; (6) Executing the tasks of a project; (7) Presentation of the project report.

According to (Saenab et al., 2017) there are several advantages of the PjBL learning model when this model can be applied to students, among others: (1) makes learners motivated to learn in the creation of the project; (2) makes students more creative in learning and able to solve problems; (3) increase collaboration, i.e. learners requires cooperation in groups and can create a pleasant atmosphere; (4) and make scientific attitudes such as conscientious, honest, responsible, and creative. Based on the advantages of the project-based learning model learning can make students more creative in learning, then this model will be able to increase students' creativity in learning.

There are also according to (Handhika et al., 2018) the disadvantages of the PjBL learning model, include: (1) it takes a lot of time, (2) requires considerable cost, and (3) the amount of equipment to be supplied. Project-based learning requires a lot of time to be provided to solve complex problems and also learners may be less active in group work if the topics given to each group are different, it is feared that students do not understand the topic as a whole.

C. Research Based-Subject

The research-based subject is some of the courses taught in universities, especially at IKIP PGRI Pontianak, The courses are named: Introduction To Thesis Writing and Data Collection and Analysis. In a research based-subject, students are asked to solve a problem where lecturers form several groups of students to solve the problem.

The procedure is very structured, in the course lecturers can also monitor the performance and progress of students to get satisfactory results. In the running process, students often get obstacles and some may need high motivation, teamwork, and self-management to do it, not only that students can

also set a schedule to improve their time management, with teamwork they can set targets to complete the project so that the project can be collected properly.

D. Previous Related Studies

(de la Puente Pacheco et al., 2019) this study analyzes students' perceptions of the effectiveness of the Project-Based Learning (PjBL) method at the Colombian University. (Saputro & Rahayu, 2020) conducted a study on the influence of the implementation of the Project-Based Learning (PjBL) learning model towards students' critical thinking skills.

(Wongdaeng & Hajihama, 2018) conducted a research, this research project was conducted to implement Project-Based Learning (PjBL) with a group of EFL students at the Prince Songkla University Demonstration School and only to examine the level of students' motivation in learning English through PjBL.

Another researcher conducted a study on the influence of the implementation of the Project-Based Learning (PjBL) learning model viewed from students' interests (Sukenti & Syarif, 2021). (Sari & Prasetyo, 2021) conducted a study on the implementation of Project-Based-Learning (PjBL) on critical reading to enhance critical thinking skills.