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### UNDERSTANDING LANGUAGE LEARNING COGNITIVE PROCESS AND LEARNING INNOVATION

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#### Abstract

*This study examines the important of tasks in language learning. Although English has been learned since elementary school, the students' language skills are still very limited and not good at communicating by using English. This paper on a limited scale attempts to explain one perspective of the writer with starting the first part by reflecting the author's experience of learning English from high school to college, then it will try to approach it with motivation theory and second language learning theory as well as the components of successful learners. Learning a Foreign language is not only about knowledge but also as a skill. As a knowledge, language learning involves the cognitive domain (remembering, repeating, and memorizing), but as a language skill it must be regularly used in its social context. To this end, the use of task is very important. Tasks are language learning activities that engage learners in the use of a target language primarily to express their intended meanings to achieve outcomes that are similar to real-world activities. While performing the tasks, learners are involved in the process of using a language naturally with the primary aim of communicating. The implication of cognitive theories in educational field is try to produce learners who are able to find the problem solving, do discovery learning, apply cognitive strategies, and conduct project based learning.*

**Key words:** *Innovation, Language Learning Theory, Tasks.*

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#### A. INTRODUCTION

After nearly eighty years of independence, the mastery of English among learners has not satisfied yet. It is hard to say that the teaching of English in Indonesia has become more and more successful. Infact, Indonesia nowadays have more educational facilities, more teachers with Bachelor degrees, master or even doctorate degrees, more books available, and more opportunities to study. Yet, some scholars (Ridwan et. Al. 1996, Hamied 1996, and Sumardi 1996) have revealed that Indonesia English teaching has not been a success. Indonesian English language competence is still below average. According to the current survey of the Indonesian Proficiency Index (EF EPI) global survey in Jakarta, Indonesian's score is 473 in the 79<sup>nd</sup> position



from 113 countries surveyed globally. Whilst the average global score is 493. In Asia level, the results of this year's survey show Singapore as an Asian country with the highest rank in terms of English proficiency, followed by Malaysia and the Philippines. On the other hand, Indonesia achieved lower values than some of its neighbors in the region, including Vietnam which is in the 7 of 23 positions which is classified as 'moderate level'. (<https://www.ef.co.id/epi/regions/asia>)

The systematic literature review reveals that English language teaching at primary schools in Indonesia faces several challenges. The shortage of qualified teachers, as emphasized by multiple studies (Renandya et al., 2018; Zein et al., 2020; Angraeni & Yusuf, 2022), hinders the delivery of effective instruction and compromises the quality of English language education. To address this challenge, it is imperative to attract and train more qualified teachers, improve teacher education programs, and establish incentives to encourage teachers to specialize in English language instruction (Kirkpatrick & Liddicoat, 2017; Widiati et al., 2018).

Indonesian government has concerned of increasing the quality of education in general and language education in particular. Our government has changed the curriculum a few times since independence in 1945. It can be assumed that the government believe the core problem lies in the method implemented. The first teaching method introduced was Grammar Translation Method or Direct method; in the 1950s Oral Approach was introduced; In 1975 Audio-lingual Approach was officially adopted; in 1984, we became interested in Communicative Approach. Ten years later, it was transformed into the 1994 Communicative Curriculum, dubbed as *Pendekatan Kebermaknaan* (Ibrahim, 1994). In 2006, it changed to KTSP but the method used was more or less similar to school-based curriculum. In 2013 the government through the ministry of national education released the latest curriculum which is called K13 curriculum, in which task based learning was chosen as one of the delivery modes. In addition to these curriculum reform, the government also upgrade teacher's competence, provide more facilities and improve teachers' welfares.

Despite of these major attempts, Indonesia, as released by EF Education First, still in the position of the 32 out of 70 countries surveyed showing the level of



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English proficiency of adults in Indonesia, under the position of Singapore and Malaysia for advanced skills.

Although, the teaching and learning approach or method is not the mere determining factor, this paper attempts to discuss the cognitive process of language learning in form of Task Based Learning and its contribution to innovative learning in English classroom contexts.

### **B. METHOD**

This is a library study with content analysis. This study attempts to examine the drawbacks of old learning methods and the contribution of tasks in language learning classroom. The writer tries to highlight the information found in the academic written sources both online and offline mode.

### **C. RESULT AND DISCUSSION**

#### **1. The Shortcomings of The Old Language Learning Method**

The history of language teaching methods began with grammar teaching of Latin and Greek, and then the method was improved with the introduction of translation in teaching and the languages which was popularly known as Grammar-translation method (GTM). The GTM was also called the Classic Methods since it was first used in the teaching of classical languages, Latin and Greek. Because Latin was learnt based on written language of classical literature, this method ignores authentic spoken communication and social contexts of the language.

According to Harmer (2012) Grammar-translation became less popular because students translated written sentences rather than spoken conversation, and because they didn't do enough speaking. However, it is clear that asking students to translate into and out of their language and English teach them a lot about the similarities and differences between the two languages. In addition, Bambang Setiyadi (2006) argues about the reason for widely using GTM is that through the method teachers with a



little English proficiency can teach the language. Fluency in English is not required to language teachers since through the GTM, the English teachers deliver lesson in students' first language. English is taught as knowledge like other subjects of the school. Since the method emphasizes on grammar and translation, students are not expected to use the language as means of communication. In short, the GTM has produced generations of students who can master the grammar of the target language, yet they cannot engage in even simple conversation.

Audio-Lingual method gave students a lot of speaking practice by using habit formation drills. Students repeated sentences again and again until they were memorised. Audio-Lingual method is connected to the theory of Behaviorism. Audio-Lingual method uses a stimulus-response-reinforcement approach to language learning. A stimulus, in this case a teacher's prompt, provoke a student response (a sentence), and this response is reinforced by reward of teacher praise and student satisfaction. If this procedure is repeatedly done, the language will be learnt.

Regardless the premium aspect on accuracy; Audiolingual methodology indeed does its best to avoid mistakes completely. Yet, the theory was heavily criticised. Harmer (2012) states that 'much Audiolingual teaching stayed at the sentence level, and there was little placing of language in any kind of real-life context'. Some experts often argued that if all language was the result of stimulus- response-reinforcement, how come we can all say new things that we have never said before?

## 2. What and How Cognitive Learning

Cognitive learning theory is different from behavioristic learning. This theory is more concerned with the learning process than the learning outcomes. It advocates that learning does not merely involve the relationship between stimulus and response. Unlike behavioristic learning models that learning is the result of a stimulus-response, the cognitive learning process is a form of



learning theory called a perceptual model. Cognitive Process is any mental process which learners make use of in language learning, such as Inferencing, Generalization, Deductive Learning, Monitoring and Memorizing. (Jack C. Richard et.al., 1992. 60). The cognitive learning model tells us that a person's behavior is determined by his or her perceptions and understanding of situations related to his or her learning objectives. Learning is a change of perception and understanding that can not always be seen as visible behavior. Cognitive processes refer to the mental processes involved in such operations as classifying and reasoning. Cognitive processes are also involved in comprehending and producing language. (Rod Ellis, 2003, 340)

Cognitive theory also emphasizes the parts of an interconnected situation with the entire context of the situation. Splitting or dividing the lesson into small components and studying them separately will lose meaning. This theory holds that learning is an internal process that includes memory, retention, information processing, emotions, and other psychological aspects. Learning is an activity that involves a very complex process of thinking. The learning process occurs, among others, includes the arrangement of stimuli received and adjusts it with the cognitive structure that has been owned and formed in the mind of a person based on previous understandings and experiences. In the practice of learning, cognitive theory, among others, appears in formulations such as: "Developmental stages" put forward by J. Piaget, Advance organizer by Ausubel, Understanding concepts by Bruner, Hierarchy studied by Gagne, *Webteaching* by Norman, and so on. The following will be described in more detail some of their views.

### Piaget Development Theory

Piaget, a cognitive psychologist, greatly influences the development of the thinking of other cognitive experts. According to Piaget, cognitive development is a genetic process, which is a process based on the biological mechanisms of the development of the nervous system. With the increasing age of a person, the more complex the composition of his or her nerve cells and the



more increase of his or her ability. As the individual progresses to maturity, it will experience a biological adaptation to its environment that will lead to qualitative changes in its cognitive structure. Piaget does not see cognitive development as something that can be defined quantitatively. He concluded that the thinking power or mental strength of children of different ages would differ also qualitatively.

How a person acquires intellectual skills, will generally relate to the process of seeking a balance between what they feel and they know on one side with what they see a new phenomenon as experience or problem on the other. If someone in the present condition can handle a new situation, His or her balance will not be disturbed. If not, he or she must adapt to his or her environment

The process of adaptation has two forms and occurs simultaneously, namely assimilation and accommodation. Assimilation is the process of change that is understood in terms of the current cognitive structure, while accommodation is the process of changing cognitive structures so that it can be understood. In other words, if the individual receives new information or experience then the information will be modified to fit the cognitive structure that has been owned. This process is called assimilation. Conversely, if the cognitive structure that has had to be tailored to the information received, then this is called accommodation

Assimilation and accommodation will occur when a person experiences a cognitive conflict or an imbalance between what is already known and what he or she sees now. This process will affect the cognitive structure. According to Piaget, the learning process will occur when following the stages of assimilation, accommodation. Assimilation is the process of integrating new information into the cognitive structure that individuals have. The process of accommodation is a process of adapting the cognitive structure into a new situation. While the equilibration process is a continuous adjustment between assimilation and accommodation. For example, a child already understands the principle of subtraction. When studying the principle of division, there is a



process of integration between the principles of reduction that has been mastered by the principle of division (new information). This is the process of assimilation process. If the child is given division questions, then this situation is called accommodation. That is, the child can already apply or use the principles of division in new and specific situations.

In order for a person to continue to develop and increase knowledge as well as maintain mental stability in itself, it is necessary to balance the process.

Balancing process is to balance the external environment with the cognitive structure that is in itself. This process is called equilibrium without which process, a person's cognitive development will be disorganized. This is for example seen in the way of talking that is not coherent, convoluted, disjointed, illogical, and so forth. Adaptation will occur if there has been a balance within the cognitive structure.

As described above, the process of assimilation and accommodation affects the cognitive structure. Changes in cognitive structure are a function of experience, and childhood maturity occurs through certain stages of development.

According to Piaget as cited in Jeane Ellis Ormrod (2009) each child develops his or her thinking ability according to a regular stage. At a certain stage of development will appear a particular scheme or structure whose success at each stage is very dependent on the previous stage. The stages are:

1. Sensorimotor Stage (Since birth to approximately two years of age)

In the first two years of the baby's life, he can understand his surroundings a little by looking, touching or holding, tasting, kissing and moving. In other words they rely on their sensory and motor skills. Some important cognitive abilities arise at this time. Piaget suggests that in most sensorimotor stages, children focus on what they do and see at the moment; their schemes are mainly based on behavior and perception. For example, by the age of 1 year, the child begins to develop object permanence, namely the realization that the object still exists even if removed from the range of vision. After



repeatedly observing certain action actions that cause consequences of consequences, the child at this stage also begins to develop an understanding of the cause-and-effect relationship.

### 2. Preoperational Stage (two up to six/seven year of age)

In the early days of this phase, the language skills of children are growing rapidly and their mastery of vocabulary increases so as to enable them to express and think about diverse objects and events. Language also works as the basis for new forms of social interaction. At this stage too, children can express their thinking thoughts and receive information that were previously unlikely to occur. In short, In this stage, the children try to represent the world through words, images, and drawing.

### 3. Concrete Operations Stage (six/seven up to eleven/twelve year of age)

At this stage, children's reasoning begins to resemble adult reasoning, but is still limited to concrete reality. Although students who exhibit concrete operational thinking have displayed many characteristics of logical thinking, their cognitive development is not yet perfect. For example, they have difficulty in understanding the abstract ideas, as well as having difficulty dealing with many variable questions. This capability only emerged in the last stage, namely at the formal operational stage. In this stage, the individuals move beyond concrete experiences and think in abstract and more logical terms. For instance formal operational thinkers are more detail in solving the problems.

### 4. Formal Operation Stage (eleven/ twelve up to adult stage).

During this stage the child is able to think abstractly. Children with this formal operation can already think of some alternatives of problem solving. They can develop generally applicable laws and scientific considerations. Thought is not far away because it is always tied to things in concrete, they can make a hypothesis and make the rules about things that are abstract. At this stage, children can think and visualize concepts that are not related to





concrete reality. In addition, they also recognize a logical conclusion, even if the conclusions are different from the reality of the everyday world.

### 3. Cognitive Theory In Learning Activities

The essence of learning according to cognitive theory is described as a learning activity related to information arrangement, perceptual reorganization, and internal processes. Learning activities based on cognitive theory is already widely used. In formulating learning objectives, developing learning strategies and objectives, no longer mechanistic as do in behavioristic approaches. Freedom and active involvement of students in the learning process is taken into account, in order to learn more meaningful for students. While learning activities follow the following principles:

1. Students are not as young adults in the process of thinking. They experience cognitive development through certain stages.
2. Pre-school age children and early elementary school will be able to learn well, especially when using concrete objects.
3. Student involvement actively in learning is very important, because only by activating the students then the process of assimilation and accommodation of knowledge and experience can occur well.
4. To attract interest and improve retention requires the need to associate new experiences or information with the cognitive structure that the learning has learned.
5. Understanding and retention will increase if the subject matter is structured by using a particular pattern or logic, from simple to complex.
6. Learning to understand will be more meaningful than learning to memorize. To be meaningful, new information should be tailored and linked to the knowledge that students already have. The teacher's job is to show the relationship between what is being learned and what the student knows.



7. The existence of individual differences in students' needs to be considered because this factor greatly affects the success of student learning. The differences are for example on motivation, perception, thinking ability, initial knowledge, and so forth.

The three cognitive schools above generally have the same view that emphasizes the active involvement of students in learning. According to Piaget, only by activating students optimally then the process of assimilation and accommodation of knowledge and experience can occur well. Meanwhile, Bruner gives more freedom to students to learn by themselves through discovery. Such a way will lead students to an inductive learning form, which requires much repetition. This is reflected in the model of the spiral curriculum as he proposes. In contrast to Bruner, Ausubel is more concerned with disciplinary structures. In the process of learning, more emphasis is on deductive way of thinking. This is evident from his conception of the Advance Organizer as a conceptual framework of the content of the lessons students will study. To sum up, cognitive is a learning theory that emphasized in the process which happens inside the learners. In this case, there are three important types of cognitive theories. They are Piaget's cognitive development theory, Vygotsky's socio cultural cognitive theory and the information processing approach. Yet, in this paper the focus is only on Piaget's thought.

From the above understanding, then the learning steps proposed by each character is different. There are some steps in relaizing Piaget's cognitive development. These steps are as follows:

1. Determining learning objectives
2. Choosing subject matter
3. Determine the topics students can learn actively
4. Determine appropriate learning activities for these topics, eg research, problem solving, discussion, simulation, and so on
5. Developing learning methods to stimulate students' creativity and thinking



### 6. Assess the process and student learning outcomes

Cognitive linguists argue that the cognitive processes governing language use and learning are essentially the same as those involved in all other types of knowledge processing, or as Croft and Cruse (2004, 2) put it:

The organisation and retrieval of linguistic knowledge is not significantly different from the organisation and retrieval of other knowledge in the mind, and the cognitive abilities that we apply to speaking and understanding language are not significantly different from those applied to other cognitive tasks, such as visual perception, reasoning, or motor activity.

According to cognitive constructivism of Jean Piaget (1985) as cited in Abdullah Al-Mahmud (2013), knowledge is the result of the accurate internalization and reconstruction of cognitive meaning. This is a child centered approach that seek to identify, through scientific study, the natural path of cognitive development. This approach assumes that students come to classrooms with ideas, beliefs, and opinions that need to be altered, modified and expanded by a teacher who facilitates this alteration and expansion by devising tasks and questions that create dilemmas for students. Knowledge construction occurs as a result of working through these dilemmas.

Jean Piagets as mentioned in Abdullah Al-Mahmud (2013) demonstrated empirically that children's minds were not an empty vessel, but they actively processed the material presented to them, and postulated the mechanisms of accomodation and assimilation as keys to this processing. Learning is a matter of individu. The constructivist model says that when a student encounters a new information, they compare it to the knowledge and understanding they already have acquired for accomodation and assimilation (Piaget, 1985

#### **Innovation And Task Based Learning**

'Innovation' is often referred to as a product that is 'new' or 'enhanced' in some way. As a marketing term, it is intended to evoke the



idea of a product being 'better' than others. However, the term is used so widely that it has lost much of its meaning. True innovation does exist and can be recognised, but it is a complex and context-specific phenomenon; what may be innovative in a rural primary school in a developing country, may not be so in a university laboratory- and vice versa (Pornafit, Hayo and Alan, 2016. P. 8).

'Pornafit, Hayo and Alan (2016) say that innovation carries many meaning. An innovation is...

an improvement

A change

Something new; something that didnot exist before

Something that is new in a specific context

All of the above combined

Any of the above, but only when it is successfully implemented.

Different people will use the word innovation with one or more of these meanings for different purposes. Also there can be an emphasis on product or process.

In an English language education classroom, an innovation is an informed change in an underlying philosophy of language teaching/learning, brought about by direct experience, research findings, or other means, resulting in an adaptation of pedagogic practices such that instruction is better able to promote language learning as it has come to be understood. (Delano, Riley and Crookes 1994, 489)

In this paper task-based learner is an innovation created to help learners acquire the target language. The implementation of task based learning in Indonesian school context is inline with the spirit of K-13 Curriculum. Since the underlying philosophy of this approach is constructivism which is cognitive process inside. Richards, Platt, and Weber (1985) explicitly refer to 'processing and understanding language' and quite naturally, this concern for language underlie several of the other definitions. Nunan (1989), for example, talks about tasks involving learners in 'comprehending', 'manipulating', 'producing' or 'interacting' in the target language. But there is a cognitive as well as a linguistic dimension to tasks. Prabhu (1987) clearly states that the cognitive



processes entailed by task. He talks about tasks involving 'some process of thought'. For Prabhu, tasks should ideally involve learners in 'reasoning' - making connections between pieces of information, deducing new information and evaluating information.

The following is the summary of the criterial features of a task provided by Rod Ellis (2008.pp. 9-10):

1. A task is a workplan

A task constitutes a plan for learner activity. This workplan takes the form of teaching materials or ad hoc plans for activities that arise in the course of teaching.

2. A task involves a primary focus on meaning.

A task seeks to engage learners in using language pragmatically rather than displaying language. It seeks to develop L2 profeciency through communicating. Thus, it requires a primary focus on meaning. To this end, a task will incorporate some kind of 'gap' for example, an information, opinion, or reasoning gap. The gap motivates learners to use language in order to fill it. The learners choose the linguistic and non linguistic resources needed to complete the task. The work plan does not specify what language the task participants should use but rather allows them to choose the language needed to achieve the outcome of the task. A task creates a certain semantic space and also need for certain cognitive linking to linguistic options.

3. A task involves real-world processes of language use

The workplan may require learners to engage in a language activity such as that found in the real world, for instance, fill out a form, bargaining in buyer and seller. Yet, the process of language use that result from performing the task, for example, asking and answering questions or dealing with misunderstanding, will reflect those that occur in real-world communication.

4. A task can involve any of the four language skills



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The workplan may requires learners to: (a) listen to or read a text and display their understanding, (b) produce an oral or written text, or (c) employ a combination of receptive and productive skills. A task possibly needs dialogic or monologic language use.

5. A task engages cognitive processes

The workplan requires learners to employ cognitive processes such as selecting, classifying, ordering, reasoning, and evaluating information in order to perform the task.

6. A task has clearly defined communicative outcome

The workplan targets the non-linguistic outcome of the task serving as the goal of the activity for learners. The stated outcome of a task serves as the means for determining when learners have completed a task.

Clearly, some of the mentioned criterias also fit more form-focused pedagogical model (which Richards calls 'traditional approach' Long 1997; Richards 2006, p. 6), for example, the use of 'gap activities and learner reliance on own resources (points 2 and 6). However, Rod Ellis (2009) mentions two key differences between more form focused methodologies and Task Based Learning: the semantic focus, and the focus on outcome (Ellis 2009). This also underline the distinction between 'product based' and 'process-based' approach (Richards 2006).

#### D. CONCLUSION

Tasks are language learning activities that engage learners in the use of a target language primarily to express their intended meanings to achieve outcomes that are similar to real-world activities. While performing the tasks, learners are involved in the process of using a language naturally with the primary aim of communicating. The implication of cognitive theories in educational field is try to produce learners who are able to find the problem solving, do discovery learning, apply cognitive strategies, and conduct project based learning.



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