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A STUDY ON STUDENTS' COGNITIVE DEVELOPMENT IN ANSWERING ENGLISH TASK

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ABSTRACT

This study focuses on students' cognitive development in answering English tasks based on Piagetian theory. The design of this study is descriptive quantitative with a pilot study to ensure that the tasks are reliable and valid. The subject of this study were 26 students at the third grade of MIN 3 Pekanbaru. While the object of this study is the students' cognitive development. Data collection techniques used in this study are tests and documentation. Data analysis techniques used are editing, coding and tabulating. After conducting the study, the authors found conclusions on the students' cognitive development at the third grade of MIN 3 Pekanbaruare in various levels, namely seriation (57.69%), transitivity (43.59%), composition (65.38%), decentering (50.00%), reversibility (52.56%), elimination (61.54%) and egocentrim elimination (24.36%). After calculation, the average of students' cognitive development is in the medicore level (50.73%), whereas their agesare in the middle of the concrete operation stage, that is between 8 and 9 years old.

Key words: *Cognitive Development, English Task, Education.*

ABSTRAK

Penelitian ini mengacu pada perkembangan kognitif siswa dalam menjawab tugas bahasa Inggris berdasarkan teori Jean Piaget. Desain penelitian ini adalah deskriptif kuantitatif dengan uji coba untuk memastikan bahwa tes tersebut realiabel dan valid. Subjek penelitian ini adalah 26 siswa di kelas tiga pada sekolah MIN 3 Pekanbaru. Sedangkan objek penelitian ini adalah perkembangan kognitif siswa. Adapun teknik pengumpulan data yang digunakan pada penelitian ini adalah tes dan dokumentasi. Teknik analisis data yang digunakan adalah pemeriksaan data (editing), pengkodean data (coding) dan tabulasi data (tabulating). Setelah dilakukan penelitian, penulis menemukan kesimpulan bahwa perkembangan kognitif siswa di kelas tiga MIN 3 Pekanbaru yang ternyata berada dalam berbagai tingkatan, yaitu seriasi (57,69%), transitivitas (43,59%), komposisi (65,38%), decentering (50,00) %), reversibilitas (52,56%), eliminasi (61,54%) dan eliminasi egosentrim (24,36%). Setelah perhitungan, rata-rata perkembangan kognitif siswa adalah di tingkat menengah (50,73%), meskipun usia mereka berada di tengah-tengah tahap operasional kongkret, yaitu antara 8 dan 9 tahun.

Kata kunci: Pengembangan Kognitif, Tugas Bahasa Inggris, Pendidikan.

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INTRODUCTION

Education is a lifelong process. One of the roles of education is to enhance students' cognitive development. Students need to participate actively in classroom activities in order to develop their cognition. Students' concepts also develop more systematically, logically and rationally when they engage with more skilled people around them (Santrock, 2008). Cognitive development will develop sharply when they participate actively in learning process and social interaction. Cognitive skills also develop trough support and guidance from more skilled and knowledgeable individuals around them such as parents and teachers.

The learning process has great effect to enhance students' cognitive development including learning a language. Nowdays, learning English is a crucial thing especially for international communication. Many students in the world learn English for many purposes. English has become one of the primary subjects in the schools. Likewise, English has been studied by Indonesian students since they studied in play group and kindegarten. After that, they will continue to study English at elementary schools, junior high schools and senior high schools. Moreover, they will keep on studying English if they continue their education in universities.

Learning a foreign language such as English will take time and dedication. It needs a lot of practices, aspirations, strategies and cognitive functions. English is one of foreign languages in Indonesia and it has become a subject which is obliged to be learned and examined at schools. This subject is also examined in the National Examination.

A good English task or exercise must be appropriate to the student's level of development. Whereas, curriculum is designed according to students' cognitive developments, the cognitive theory in the learning process has been discussed by many experts and psychologists, commencing from Piaget who has classified cognitive development into four stages. According to his theory, cognitive development has been ongoing since infant until puberty age.

Based on the explanation above, it has been explained that learning English is better accomplished if it is started early on. Starting to learn English from childhood enables students to master vocabulary as well as mastering vocabulary of their mother tongues. Therefore, at this stage of development, the process of acquisition is still running. While, in this period their cognitive developmets have been developing, too.

The writer worked for an elementary school in Pekanbaru. The writer worked as an English teacher of MIN (*Madrasah Ibtidaiyah Negeri)* 3 PEKANBARU. MIN is similar to Islamic Elementary School (IES) but it is under control of Religional Department (DEPAG). The writer observed that the young students had different levels of cognitive development each from the other. Moreover, in teaching English, using symbols, letters, numbers and pictures are commonly used. But, they had different capabilities to solve the problems (questions) on their English task. They had differential cognitive developments especially in answering questions in an English task.

Students' cognition allow them to answer questions in doing exercises or tasks properly. Unfortunately in this case, their cognitive test are not really effective because

in answering a question they should read it first. After reading, they have to identify and after that they may solve the problems and answer the questions. Thus, cognitive process sequences that is, reading, identifying, solving problems (remembering, counting, guessing) and the last is answering.

Moreover, many students cannot use their cognition properly while doing their tasks, especially if the questions do not only require knowledge but also logical reasoning or one's perspective (this is related to Elimination of egocentrism). The students must also seriate numbers (seriation), count numbers (reversibility & conservation), identify things (classification) and compare one thing to other things (trasitivity) when they do the tasks. These activities are exactly similar to Piagetian theory of students' cognitive developments. Current time, elementary school teachers must develop the lesson materials which have relationship with other subjects, for instance when learning language they are also learning about science and mathematics. This is called thematic. It provides more difficulties for students to solve the problem on their tasks.

Based on explanation above, the students are expected to use their cognition effectively in answering questions of the task, but some of them have difficulty in answering it although according to the theory, their cognitive development has allowed the to do those activities. In this case, the writer is interested in doing study on students' cognitive development. The writer attempts to identify the students' cognitive development to solve problems (questions) by identifying their answers in English tasks with appropriate cognitive indicators. The writer also wants to prove whether their cognition develops perfectly by identifying their answers on the English task.

The Objective of the study can be formulated to find out the students'cognitive development and their levels in answering questions of English task at MIN 3 Pekanbaru. Hypothesis for this study, the writer assumes that each student has different cognitive development, which influences the difference of how high or low their scores in answering English task based on the indicators.

THEORETICAL REVIEW

Students are people who engaged in study. Students included young learners are chidren who engaged in study at formal school such as elementary school. Students in learning processes always require cognitive ability to remember, symbolize, categorize, solve problems, create and imagine (Karimftik, 2009).

During middle childhood years, children's cognitive development becomes more complicated and sophisticated (Cardon & others, 1992). According to the Piagetian view, a child who is ready for a formal education is in the concrete operational stage (Piaget, 1896). Before this stage, children cannot think in a logical way. He also explains, the stage transition from pre-operational to concrete operational reasoning is a shift from reliance on perception to reliance on logic.

Before entering in a formal school, children in pre-operational stage relate to their world through symbolic reasoning magicalthought that continued from sensorimotor activity. During the pre-operational stage, children become capable of using language and mental imagery. Despit

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these abilities, Piaget noted that the pre-operational child's thought is characterized by several limitations such as egocentrism, animism and lack of conversation skills. In contrast, children in the concrete operational stage have more cognitive process which is required in learning such as seriation, transitivity, classification, decentring, reversibility, conservation and elimination of egocentrism.

The Concept of Cognition

Cognition (*noun form of* ***cognitive****)* refers to sophisticated thinking and reasoning (Omrod, 2008). Cognition is concerned with information processing, and includes a variety of processes such as attention, perception, learning, and memory. Cognitive processes enable students to memorize lessons, solve maths problems, come up with a creative strategy, or speak meaningfully connected sentences (Santrock, 2008). The word "cognitive" is roughly equivalent to thought. Hence cognition starts to develop after someone feels alive in the world. Piaget explains that cognition has developed since infant period or sensimotor stage.

The Cognitive Development

Cognitive development means the development of thought. Studies on cognitive development have been prompted through information-processing theories, Piaget's stages theory, and Vygotsky's sociocultural theory. They do not only inform the work of developmental psychologists but also prove useful inputs for schools and parents. A 6-year-old child may register to study in elementary school because her/his cognitive development allows her/him to receive knowledge and think logically. Chidren under 6 years old are not advised to enter in elementary school because their cognitive development is still in the pre-operational stage and their mind cannot think logically.

On the other hand, Piaget (1977) describes four main periods in the cognitive development on completely reversible equilibrated thought structures. As shown below, for Piaget cognitive development is not the same at different ages. It changes qualitatively, attaining increasingly broader, more abstract, and more equilibrated structures thereby allowing access to different levels of organization of the world. Piaget's theory of cognitive development describes a series of four stages that the child must progress through in a developmental format from infancy to adolescence.

Sensorimotor Stage

The sensorimotor stage is the first of four stages in cognitive development. This stage develops after birth to 2 years old. In this stage, infants construct an understanding of the world by coordinating sensory experiences (such as seeing and hearing) with physical and motoric actions. Infants gain knowledge of the world from the physical actions they perform on it. An infant progresses from reflexive, instinctual action at birth to the beginning of symbolic thought toward the end of the stage.

Preoperational Stage

The pre-operational stage is the second of four stages in cognitive development. By observing sequences of play, Piaget was able to demonstrate that towards the end of the second year, a qualitatively new kind of psychological functioning occurs. Piaget considered that children primarily learn

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through imitation and play throughout these first two stages, as they build up symbolic images through internalized activity.

In addition, there are salient Features of Preoperational Thoughts: (1) **Egocentrism** is a salient feature of preoperational thought. It is the inability to distinguish between one's owns perspective and someone else's perspective; (2) **Animism,** another salient of preoperational thought is the belief that inanimate objects have "lifelike" qualities and are capable of action; (3) **Intuitive Thought Sub-stage,** The intuition sub stage is the second sub-stage of preoperational thought, stretches from 4-7 years of age. In this children begin to use primitive reasoning and want to know the answers to all questions. They seem so sure about their knowledge yet are unaware of how they know what they know. In preoperational child lacks conservation and ask a barrage of questions. For example a young child might be given the task dividing her peers into groups according to whether they are boys or girls; (4) **Centration,** focusing of attention on one characteristic to the exclusion of all others-inability to shift quality or function from one set of criteria to another; and (5) **Conservation,** A belief in the permanence of certain attributes of objects or situations in spite of apparent changes.

Concrete Operational Stage

The concrete operational stage is the third of four stages in cognitive development in Piaget's theory. This stage, which follows the Pre-operational stage, occurs between the ages of 7 and 11 years and is characterized by the appropriate use of logic. Important processes during this stage are: (1) **Seriation**, the ability to sort objects in an order according to size, shape, or any other characteristic. For example, if given different-shaded objects they may make a color gradient; (2) **Transitivity**, The ability to recognize logical relationships among elements in a serial order, and perform 'transitive inferences' (for example, If A is taller than B, and B is taller than C, then A must be taller than C); (3) **Classification**, the ability to name and identify objects according to appearance, size or other characteristic, including the idea that one set of objects can include another; (4) **Decentering**, where the child takes into account multiple aspects of a problem to solve it. For example, the child will no longer perceive an exceptionally wide but short cup to contain less than a normally-wide, taller cup; (5) **Reversibility**, the child understands that numbers or objects can be changed, then returned to their original state. For this reason, a child will be able to rapidly determine that if 4+4 equals 8, 8−4 will equal 4; (6) **Conservation**, understanding that quantity, length or number of items is unrelated to the arrangement or appearance of the object or items; and (7) **Elimination of Egocentrism**, the ability to view things from another's perspective (even if they think incorrectly). For instance, show a child comic pictures in which Jane puts a doll under a box, and then she leaves the room, and then John moves the doll into a cupboard, and Jane comes back. A child in the concrete operations stage will say that Jane will still think the doll is under the box even though the child knows it is in the cupboard. This way proves that the child has been able to understand about Jane's perspective.

Formal Operational Stage

The formal operational period is the

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fourth and final periods of cognitive development in Piaget's theory. The Formal Operational stage is most closely related to learning in nontraditional age students. This stage is characterized by the ability to think logically and abstractly. Thought is more orderly, organized, and problem-solving focused. This stage, which follows the concrete operational stage, commences at around 11 years of age (puberty) and continues into adulthood. In this stage, individuals move beyond concrete experiences and begin to think abstractly, reason logically and draw conclusions. Adolescents begin to think more as a scientist thinks, devising plans to solve problems and systematically testing solutions. They use hypothetical-deductive reasoning, which means that they develop hypotheses or best guesses, and systematically deduce, or conclude, which is the best path to follow in solving the problem.

During operational concrete stage, a child performs in a characteristic way on tests called conservation experiments. To conserve in Piaget's terminology is to preserve internally or represent. The conservation experiments all require a child to demonstrate possession of some concepts, usually a concept that develops around the age. The process of concept formation in a child is achieved in cooperation and dialogue with an adult such as teachers. The result of this interaction is the acquisition of new knowledge for the child and the demonstration of the adult's use of logic and reasoning (Kozolin, 1986).

With the comparison of current knowledge to new knowledge, the learner can develop a disequilibrium which can allow the learner to recognize the need for change. This leads the learner to develop a goal orientation to intentionally and consciously change current knowledge. This goal orientation is a positive and open attitude toward learning. This process of conceptual intentional change requires a level of *high engagement* with the content and with the teacher to process the change (Pintrich, 2000).

Teacher's roles are giving guidance and help students to develop their cognitive function. In a school task, answering the questions not only needs explanation or guidance by the teacher but also students' cognitive abilities. Ability to seriate in order, count numbers and return it again, understand characters' perspectives in reading text are commonly used in solving problem of school tasks. In this case, aswering school task requires students' cognitive.

Moreover, William Winn (2002) describes environmental factors such as poverty, ethnicity, the quality of schools, etc have roles in learning to the practice of education. Personal experiences also has a part to the learning result. However, Winn also states that mediating cognitive variables differ in their nature and effect from individual and individual. Individual differences make it extremely difficult to predict learning outcomes for two reasons. First, to choose effective strategies for students, would be necessary to know far more about the student than is easily discovered. The designer would need to know the student's aptitude for learning the given knowledge or skills, the student's prior knowledge, motivation, beliefs about the likelihood of success, level of anxiety, and stage of intellectual development.

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METHOD

The design of this study is descriptive quantitative. It only has one variable that is, students' cognitive development in answering questions of an English task. It has been designed to analyze students' cognitive development in solving problem based on Piagetian theory of cognitive development in the questions of English Task, particularly students at third grade of MIN 3 Pekanbaru.

The following are the steps of process in getting data:

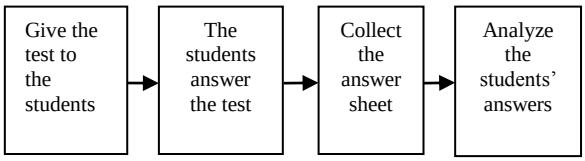

Figure 1. Study Design

Data analysis techniques used in the study are editing, coding and tabulating. The process of editing data in this study ensures that the data obtained are in accordance with the conditions in the field. The process of coding data is intended on the collected data to be coded and then it can be analyzed. While the process of tabulating data is intended to transfer the data into analysis tables based on certain categories or classifications (Hoesin, 2017).

Study Instrument

In this study, the writer took the data from the students' answers of the test. The questions are 21 items. The questions are about seriation, transitivity, classification, decentring, reversibility, conversation and elimination of egocentrism that were appropriate with the cognitive indicators. It is a reading test. The writer administered the test items in multiple choice form, which consisted of three options to be chosen by the students and each students got one test and answered it on that paper test. The time given was 45 minutes. The students' seats were not be changed.

The analysis focused on which questions answered correctly by students according the indicators.

Table 1
The Blueprint of Instrument

Indicator	Number of Items	Number of Each Items
Seriation	3	1-3
Transtivity	3	4-6
Classification	3	7-9
Decentring	3	10-12
Reversibility	3	13-15
Conservation	3	16-18
Elimination of Egocentrim	3	19-21
Total	21	21

The data was obtained by through a test. The test was divided into 7 parts and each part consisted of 3 items. So, the total item were 21 items.

A pilot test was conducted to determine whether the task was valid and reliable. The try out test consist of 21 items. The writer tried out the test to the students in class 3B at MIN 3 Pekanbaru consists of 26 students. The pilot was done to ascertain the dificulty level of the test, discrimination index, reliability of the test, facility value, mean score, standart deviation and validity of the test. Invalid or unreliable questions were revised and substituted for new ones.

The Reliability of the Test

From the calculation of data, it can be seen that the reliability of the test is 0.15 which means the test is low reliable. There

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were some steps that the writer used to find the reability of test, as describe below:

1. The mean score was obtained by computing every student's correct answer. The way to get mean score was the total score of students' correct answers were divided by total number of the students. Based on the calculation the total score of the students' answers is 316 from 26 students or the try out respondents from the calculation, the mean score is 12.15 (316/26= 12.15).
2. The mean score was used to get the standard deviation of the test which was processed and analized. The standard deviation is 2.45.
3. The value of the mean and standard deviation were used in calculating the reability of the test. The reability of the test is 0.15.

RESULT AND DISCUSSION

After calculating the data, it found the results of the study on students' cognitive developmentamong the third year students of MIN 3 Pekanbaru in answering English task based on concrete operation stage of Piaget's cognitive development theory. In analyzingdata, the writer classified the questions in the same cognitive component that helps students to identify the correct answers to the English task. These are the concrete operational processes (seriation, transitivity, classification, decentring, reversibility, conservation and elimination of egocentrim). The result of the study can be described as follow;

Seriation itself is the ability to sort objects in an order according to size, shape, or any other characteristics. The first test item of seriation given to the student is a test to sort the bars from the shortest to the longest as follows:

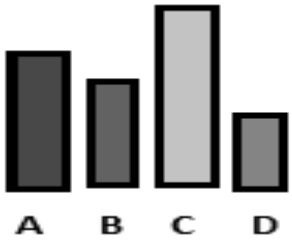

Figure 2. First Seriation Task

Figure 2 shows four bars A, B, C and D are not arranged in an order length. The task is given to determine whether the students' cognition on seriation has developed or not by asking them to arrange the bars from the shortest to the longest. The study shows that from 26 students, there were 16 who could answer the question correctly.

The second test item of seriation given to the student is a test to arrage numbers from the smallest to the biggest, as follows:

Figure 3. Second Seriation Task

Figure 3 shows five numbers (9,7,11,5,14) are not arraged in an order.The task is given to determine whether the students' cognition on seriation has developed or not by asking them to arrange the numbers from the smallest to the biggest. The study shows that from 26 students, there were 9 who could answer the question correctly.

The third test item of seriation given to the student is a test to arrage diamonds from the smallest to the biggest, as follows:

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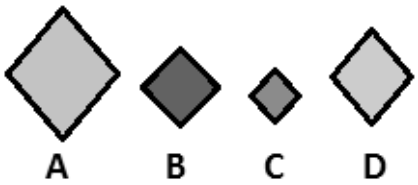

Figure 4. Third Seriation Task

The figure 4 shows four diamonds A, B, C, D are not arraged in an order size. The task is given to determine whether the students' cognition on seriation has developed or not by asking them to arrange the diamonds from the smallest to the biggest. The study shows that from 26 students, there were 20 who could answer the question correctly.

On the whole, based on the results of the seriation tests, the highest result that students could gain is in the level of Good (38.46%). This number does not really differ from the level of excellent (23.07%) and level of Poor (26.92%). However, there were only a few students who fell into the lower level (11.53%).

Transitivity itself is the ability to recognize logical relationships among elements in a serial order and perform transitive inferences. The first test item of transitivity given to the student is a test to recognize logical number conversion as follows:

Figure 5. First Transitivity Task

The figure 5 shows numbers in words (seven, five and three). The purpose of the task is to determine whether the students' cognition on transitivity has developed or not by asking them to give an appropriate symbol between two numbers in words. The study shows that from 26 students, there were 12 who could answer the question correctly.

The second test item of transitivity given to the students is a test to draw an inference based on previous statements as follows:

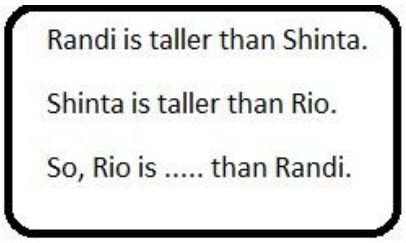

Figure 6. Second Transitivity Task

The figure 6 shows comparisons of ones' height in words. The purpose of the task is to determine whether the students' cognition on transitivity has developed or not by asking them to fill in the blank. The study shows that from 26 students, there were 11 who could answer the question correctly.

The third test item of transitivity given to the students is a test to draw an inference based on previous statements and a picture as follows:

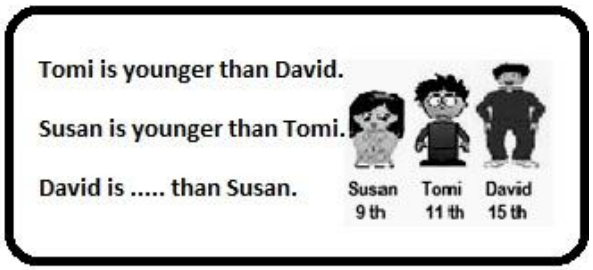

Figure 7. Third Transitivity Task

Figure 7 shows comparisons of ones' ages in words and a related picture. The task is given to determine whether the students' cognition on transitivity has developed or not by asking them to fill in the blank. The study

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shows that from 26 students, there were 11 of them could answer the question correctly.

On the whole, based on the results of the transitivity tests, it found that the highest result students could gain is in the Poor level (46.15%). This number is quite different from the level of good (30.76%). This number is also different from the level of very poor (15.38%). Unfortunately, only 2 students fell into excellent level (7.69%).

Classification itself is the ability to name and identify objects according to appearance, size or other characteristic, including the idea that one set of objects can include another. The first test item of classification given to the student is a test to name an object as follows:

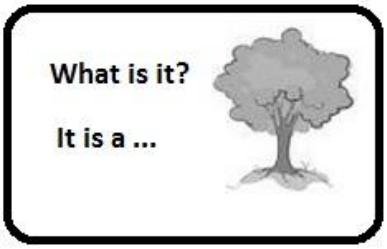

Figure 8. First Classification Task

Figure 8 shows a picture of "a tree" and a question to name it. The task is given to determine whether the students' cognition on classification has developed or not by asking them to fill in the blank. The study shows that from 26 students, there were 12 who could answer the question correctly.

The second test item of classification given to the student is a test to name an object as follows:

Figure 9. Second Transitivity Task

Figure 9 shows a picture of "a cloud" and a question to identify its color. The task is given to determine whether the students' cognition on classification has developed or not by asking them to fill in the blank. The study shows that from 26 students, 23 could answer the question correctly.

The third test item of classification given to the students was a test to identify an object according to its categorization as follows:

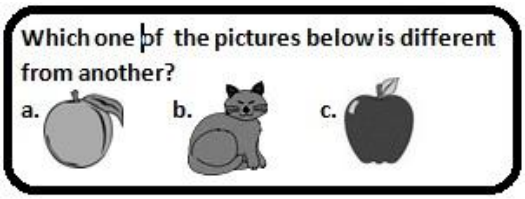

Figure 10. Third Transitivity Task

Figure 10 shows a question to identify the dissimilarity and three pictures of "an orange, a cat and an apple". The task is given to determine whether the students' cognition on classification has developed or not by asking them to choose which one of these pictures is not involved in the same category. The study shows that from 26 students, 16 could answer the question correctly.

On the whole, based on the results of the classification tests, the highest result that students could gain was in the good level (46.15%). This number is not really different from the level of excellent (26.92%) and the level of poor (23.07%). Only one student falls into the very poor level (3.84%).

Decentering is cognitive ability where the child takes into account multiple aspects of a problem to solve it. The first test item of decentering given to the student is a test to take into account multiple aspects and solve it as follows:

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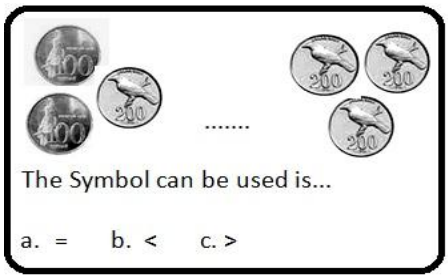

Figure 11. First Decentering Task

Figure 11 shows some pictures of coins and a question to identify the most appropriate symbol. The task is given to determine whether the students' cognition on decentering has developed or not by asking them to choose which one of the symbols is correct. The study shows that from 26 students, 21 could answer the question correctly.

The second test item of decentering given to the student is a test to take into account the amount of an liquid in multiple containers as follows:

Figure 12. Second Decentering Task

Figure 12 shows three pictures A, B, C consisting of water containers. Picture A shows two wide containers consisting of same amount of water. Picture B shows the water in the wide container is being poured into a skinnier container. Picture C shows one skinny container and one wide container containing water. The task is given to determine whether the students' cognition on decentering has developed or not by asking them todetermine whether the glasses have same amount of water or not. The study shows that from 26 students, 16 could answer the question correctly.

The third test item of decentering given to the students is a test to take into account area of the same objects with a little manipulation as follows:

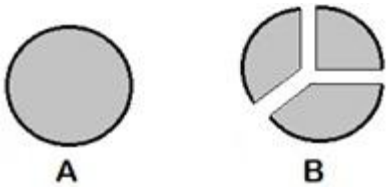

Figure 13. Third Decentering Task

Figure 13 shows two pictures (pictures A and picture B) which consist of the same area. But, the area of picture B is divided into 3 parts. The task is given to determine whether the students' cognition on decentering has developed or not by asking them to determine whether the pictures have same area or not. The study shows that from 26 students, there were 2 who could answer the question correctly.

On the whole, based on the results of the decentering tests, it found that the highest result students could gain in the good level (57.69%). This number is quite different from the level of poor (34.61%). There was only one student who could not answer any of the questions about decentring, it means only two students in level of very poor (7.69%). Unfortunately, no one ccould answer all questions in decentring. It means no student is in the excellent level (0%).

Reversibility is the child understanding that numbers or objects can be changed and then returned to their original state. The first test item of reversibility given to the students was a test to understand that numbers can be changed and returned to their original state as follows:

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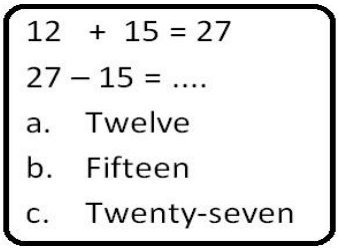

Figure 14. First Reversibility Task

The figure 14 shows a number line addition, a number line substraction and its multiple choice. The task is given to determine whether the students' cognition on reversibility has developed or not by asking them to choose which one of the multiple choices is correct. The study shows that from 26 students, 12 could answer the question correctly.

The second test item of reversibility given to the student was a test to understand that numbers (in words) can be changed and returned to their original state as follows:

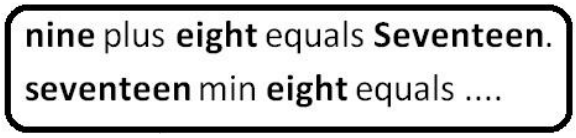

Figure 15. Second Reversibility Task

The figure 15 shows a number addition and a number substraction are in words, but the number substraction is not completed.The task is given to determine whether the students' cognition on reversibility has developed or not by asking them to fill in the blank by reversing numbers in maths operations through addition to the original state through subtraction. The study shows that from 26 students, 13 could answer the question correctly.

The third test item of reversibility given to the students was a test to understand that the value of an object can be changed and then returned to its original state as follows:

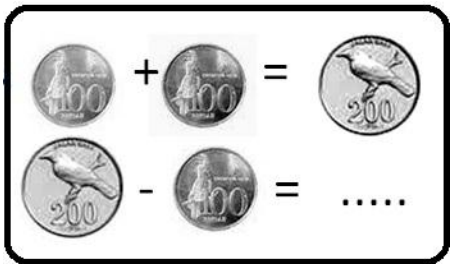

Figure 16. Third Reversibility Task

The figure 16 shows five pictures of coins (the values of coins are 100 rupiahs and 200 rupiahs). The coins are shown in forms of maths operation of addition and subtraction. The task is given to determine whether the students' cognition on reversibility has developed or not by asking them to fill in the blanks by reversing numbers in maths operation through addition to the original state through subtraction.The study shows that from 26 students, 16 could answer the question correctly.

On the whole, based on the results of the reversibility tests, the highest result students could gain is in good level (34.61%). This number is not really different from the level of poor (30.76%). There were 3 students who had answered all reversibility questions corectly, they fall into excellent level (19.23%). Unfortunately, there were 4 students cannot answer all question of reversibility process. It means they fall into very poor level (15.38%).

Conservation is the ability in understanding that quantity, length or number of items is unrelated to the arrangement or appearance of the object or items.The first test item of conservation given to the student is a test to understand that quantity of items is unrelated to the arrangement or appearance of those items as follows:

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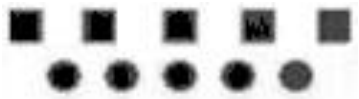

Figure 17. First Conservation Task

Figure 17 shows some pictures of squares and circles the sum of each of which is 5 (five), but the squares are arranged further apart from each other than are the circles. The task is given to determine whether the students' cognition on conservation has developed or not by asking them to identify whether the circles and the squares have the same value or not. The study shows that from 26 students, 16 could answer the question correctly.

The second test item of conservation given to the student is a test to understand that the number of items is unrelated to the arrangement of those items as follows:

Figure 18. Second Conservation Task

Figure 18 shows two big squares (square A and square B) consisting of a picture of a cow and 8 (eight) small squares in each of the big squares. But, the small squares in square A are not arranged as same as the small squares in square B. The task is given to determine whether the students' cognition on conservation has developed or not by asking them to identify whether the small squares in square A and square B have the same quantity or not. The study shows that from 26 students, 15 could answer the question correctly.

The third test item of conservation given to the student is a test to understand that length of items is unrelated to the arrangement or appearance of those items as follows:

Figure 19. Third Conservation Task

The figure 19 shows four pictures of pencils which have the same length, but one of the pencils on the right (or pencil A) lies to the right. The task is given to determine whether the students' cognition on conservation has developed or not by asking them to identify whether the pencil A and the pencil B have the same length or not.The study shows that from 26 students, 17 could answer the question correctly.

On the whole, based on the results of the conservation tests, the highest result the students could gain is in the level of good (38.46%). This number is quite different from the level of excellent (26.92%) and the level of poor (26.92%). The data shows that there are 2 students are in very poor level (7.69%).

Elimination of Egocentrism itself is the ability to view things from another's perspective (even if they think incorrectly). The first test item of elimination of egocentrism given to the student is a test to view things from another's perspectiveas follows:

Figure 20. First Elimination of Egocentrism Task

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The figure 20 shows comic images of two scenes. The first scene shows a conversation between a thief and a boy. The thief says, " If police come to find me, don't tell them I am here." The boy says, "Okay! I will not tell the police. Then, the second scene shows a conversation between the policemen and the boy. One of the policemen asks, "We want to catch a thief! Did you see him before?". The boy says, "No, I did not."The task is given to determine whether the students' cognition on elimination of egocentrism has developed or not by asking them to guess what the policemen's perspective will be after the boy answer their question. The study shows that from 26 students, 12 could answer the question correctly.

The second test item of elimination of egocentrism given to the student is a test toview things from another's perspectiveas follows:

Figure 21. SecondElimination of Egocentrism Task

The figure 21 shows comic images of two scenes. The first scene shows a picture of two boys are fighting and there is an explanation below. The explanation clarifies, "One day, Andi fought with Riki. They fought until their clothes were very dirty." Then, the second scene shows a conversation between Andi and his mother. His mother says, "Andi, why are you so dirty? Did you fight with your friend?". Andi replies, "No, mom. I fell down." The task is given to determine whether the students' cognition on elimination of egocentrism has developed or not by asking them to guess what Andi's mother will think after Andi answers her question. The study shows that from 26 students, there were 5 of them could answer the question correctly.

The third test item of elimination of egocentrism given to the student is a test to view things from another's perspectiveas follows:

Figure 22. Third Elimination of Egocentrism Task

Figure 22 shows comic images of two scenes. The first scene shows a picture of Sponge Bob playing with a group of jellyfish. The second scene shows a conversation between Pattrick and Sponge Bob. Pattrick asks, "What did you do last night, Sponge Bob?". Sponge Bob replies, "Hmmm... well, I just stayed at home." The task is given to determine whether the students' cognition on elimination of egocentrism has developed or not by asking them to guess what Pattrick will think after Sponge Bob answers his question. The study shows that from 26 students, 2 could answer the question correctly.

On the whole, based on the results of the conservation tests, the highest result the

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students could achieve is in the level of very poor (50%). This number is not really different from the level of poor (30.76%). The data shows that only 4 students fall into good level (15.38%) and only one student can answer all questions about elimination of egocentrism process. It means only one student is in excellent level (3.84%). These questions are identified as the most difficult cognitive process for the students at the third grade or it can be concluded that elimination of egocentrism process has not developed perfectly in the cognition of third grade students at MIN 3 Pekanbaru.

Table 2
The Average of Students' Cognitive Development

Cognitive Process	Percentage (%)	Level of Development
Seriation	57,69 %	Medicore
Transitivity	43,59 %	Medicore
Classification	65,38%	Good
Decentring	50,00%	Medicore
Reversibility	52,56%	Medicore
Conservation	61,54%	Medicore
Elimination of Egocentrism	24,36%	Poor
Average	**50,73%**	**Medicore**

From the table 2, it can be inferred that the students' cognitive development average at the third grade of MIN 3 Pekanbaru in answering English task is in Medicore level. The highest scores were reached by the students in answering cognitive questions in English task is about classification questions (65.38%). On the other hand, the lowest scores were reached by the students in questions about elimination of egocentrism (24.36%).

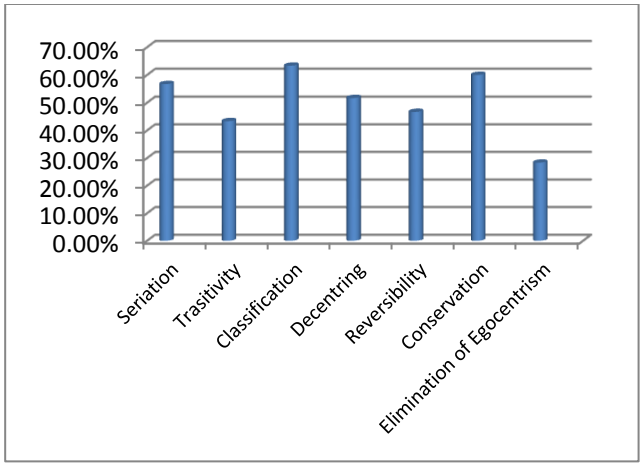
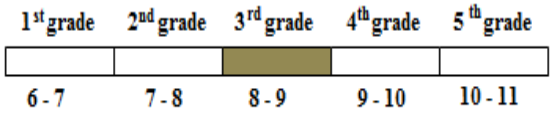


Figure 23. Students' Cognitive process at Concrete Operational stage

From the presentation of the data, the writer can make an interpretation about the data of this study. The mean score of the students' cognitive development in answering English task is 50 (see appendix 9). It means the students' cognitive development only develop 50% from overall concrete operational stage. Piaget states that concrete operational stage of cognitive development started at age 6 until 11 years old. Most of students at the third grade of MIN 3 Pekanbaru are in the age between 8 and 9 years old. It means the study took sample at the middle age of this stage.



So, there is the possibility that the result of students' cognitive development has not reached perfect level because they are in middle age of final concrete operational stage (11 years old). The study shows that elimination of egocentrism in the cognitive process that has not developed fully. However, it is also aproprite with another Piaget's theory that states that although

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children in concrete operational phase develop their cognitive ability from 6-11 years old, but their developments have difference in every age level (Bujuri, 2018: 37). Another study shows that children's cognitive abilities commonly have not yet developed in the part of complicated thinking and they can only solve the problem when the object of the problem is empirical (real) or captured by their senses, and it is not imaginary (Bujuri, 2018: 39-40). Moreover, the test instument of this study is written in English, whereas English is not native language for them. It also causes why the result of this study states that students' cognitive development are not in excellent level. The students' cognition will keep on developing in concrete operational stage until the age of 11. This statement supports Piaget's theory about concrete operational stage in cognitive theory, whereas this stage consist of several indicators, those are seriation, transitivity, classification, decentring, reversibility, conservation and elimination of egocentrism.

CONCLUSION

After doing this study, the writer found conclusions that students' cognitive development at the third grade of MIN 3 Pekanbaru are in various levels, namely seriation (57.69%), transitivity (43.59%), classification (65.38%), decentering (50.00%), reversibility (52.56%), conservation (61.54%) and elimination of egocentrism (24.36%). After calculation, the average of students' cognitive development is in medicore level (50.73%), whereas their ages were in the middle of concrete operational stage, that is between 8 and 9 years old.

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