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Application of Cybernetetic Learning Theory Using Visual Illustration Media to Develop Students' English Speaking Skills

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Abstract

The ability to speak English is a must to survive in global competition. As education people always try and want to explore to improve the quality of graduates who are better with a variety of methods, but the results are still not satisfactory as expected. Various attempts to improve English learning outcomes have been carried out through suitable and fun learning models using in-service and on-service training systems, but after completing the training many teachers returned to the old teaching method (teacher centered). Communicative approach methods / approaches have not been implemented so that the results achieved have not been improved. Of the four English language skills, the lowest score is speaking skills. The main cause is the low student interest in learning and the use of media that is less interesting, coupled with teaching and learning activities in the classroom that are boring. Seeing this kind of teacher creativity is needed, for example by conducting teaching and learning activities based on visual illustration media according to the tastes of the child but so that it can meet the demands of the curriculum and keep abreast of technological developments. The research method used is to use the concept of Action Research Class which consists of 2 cycles, where each cycle consists of several stages, namely planning, action implementation, observation and evaluation and reflection. Classroom action research on improving speaking English by applying cybernetic learning theory and visual illustration media carried out over two cycles is able to be an alternative learning reference for teachers and students who are fun.

INTRODUCTION

English plays a role as a scientific and artistic language. The ability to speak English is a must to survive in global competition. As a human being, education always tries and wants to explore to improve the quality of graduates who are better with a variety of methods complete with source books, but the results are still not satisfactory as expected. Various efforts to improve the quality of education, especially in improving the learning outcomes of English have been carried out either by the government or other educational institutions for example, in training teachers to use methods, strategies or models of learning that are suitable and fun in Teacher Job Training using the In-system service and on-service training. After completing the training many teachers returned to the old teaching method (teacher centered) and no longer used the techniques / methods / approaches that had been trained in the training, such as communicative approaches so that the results achieved were still not improved.

English learning at the high school level is divided into four groups of skills, including listening skills, speaking skills, reading skills and writing skills. Of the four language skills it turns out the lowest value is the value of speaking skills. The main cause is the low student interest in learning and the use of media that is less interesting, coupled with teaching and learning activities in the classroom that are boring. Seeing this kind of teacher creativity is needed, for example by conducting teaching and learning activities based on visual illustration media according to the tastes of the child but so that it can meet the demands of the curriculum and keep abreast of technological developments.

Based on the above background, this research formulates the problem to be studied and analyzed as follows :

1. How to make alternative learning reference models for teachers and students fun?
2. What is the classroom management model that can improve the quality of graduates, especially in speaking skills so they can survive in global competence ?
3. How to make students feel more comfortable and not depressed by fear so that they can express information received optimally ?
4. How to spur varied opinion competition between students so the class is not boring ?

LITERATURE REVIEW

A. English Speaking Skills

English has different characteristics from the exact lessons or other social sciences. This difference lies in the function of language as a communication tool. English is not only a communication tool of a country but has been international as a language of science and technology. In learning English there are two skills that must be developed, namely receptive skills which include listening, reading and productive skills which include speaking and writing. Speaking is a language skill that develops in a child's life which is preceded by a listening skill, which then forms the ability to speak and learn (Tarigen, 1981).

Humans are social creatures, so the main actions that are most important are social actions such as exchanging experiences, thoughts, expressing feelings. Communication unites individuals into groups, so speaking skills must be taught by the family early on. English is a language of science and technology, which means that if you want to follow the development of science and technology, you must be able to speak in English.

From the discussion that has been explained, it can be concluded that English speaking skills are the ability to speak / communicate in English to follow the development of science and technology.

B. Class Management

According to Syaiful Bahri Djamarah and Aswan Zain, classroom management is a teacher's task that is never left behind, namely creating a conducive learning environment so that goals are achieved effectively and efficiently (Djamarah, 2006). Classroom management is a complex behavior problem and the main task that is most difficult for teachers to create and maintain optimal conditions in the teaching and learning process, which includes termination of student behavior that distracts attention, giving gifts or setting productive group norms .

This is consistent with what was stated by Dennis (2001) that classroom management is a broad term covering all kinds of work done by teachers to determine and maintain an effective learning environment (Fatah, 2003). According to Gunawan (2003), class management is any effort that conditions the classroom for the creation of an effective learning process. Class management

focuses on two things, namely:

1. Conditioning the class, arranging student seats and desks, arranging and arranging teaching aids.
2. Creating an effective learning atmosphere, meaning that in the teaching and learning process there is a positive interaction between students and students, between teacher and student, so that it will slightly reduce student dependence on the teacher.

Students also have innovations to learn by building knowledge starting from the experience of themselves in a comfortable atmosphere, so that the knowledge obtained by students will be more long-held in the minds of students. Several factors support, including curriculum, facilities and infrastructure, student potential, class dynamics, time management, environment and class administration. According to Sudirman (1991), class management is an effort to utilize class potential. Nawawi (1989) also said that class management can be interpreted as the ability of a teacher or class guardian to utilize class potential in the form of providing the broadest opportunities for each person to carry out creative and directed activities so that time and funds can be used efficiently to do classroom activities related to the curriculum and student development.

From the description above it can be concluded that class management (class management) is a process starting from planning, implementation which includes the management of material, class settings, determining methods, media and learning scenarios for the creation of good classes to achieve the expected results effectively and efficient.

C. Cybernetic Learning Theory

Learning theory according to Thorndike (1977) is a process of interaction between stimulus and response. Stimulus is anything that can stimulate learning activities such as thoughts, feelings or other things that can be captured through the senses. Response is the reaction that is raised by students when learning which can also be thoughts, feelings from the definition of learning, then according to Thorndike the behavior changes resulting from this learning activity can be realized concrete that is observable or non-concrete which cannot be observed. (Budiningsih, 2005)

The word cybernetics, comes from greek which means controller. Cybernetetic learning theory, which is a control and communication system that allows feedback. The term was first popularized by Norbert Wiener (1948), a scientist from the Massachusetts Institute of Technology to describe the way in which feedback enables the process of communication. Cybernetetic learning theory is a theory of learning that is relatively new and develops in line with developments in technology and information science. According to cybernetics theory, learning is the management of information (information processing theory) as if this theory has similarities with cognitive theory that is concerned with the learning process rather than learning outcomes.

The learning process is indeed important in cybernetic theory, but even more important is the processed information system that students will learn. This information will determine the process. Arendes (2004) argues that this information processing theory explains the processing, delivery and recall of knowledge from the brain. Mental events are broken down from input (stimulus) to output (response):

1. Initial knowledge, this is very important why someone often has difficulty in understanding a particular knowledge, one of the causes is because the newly received knowledge does not occur in relation to previous knowledge or prior knowledge not yet possessed.
2. Register / Recording Sensing, receives a number of information from the five human senses to be stored in a very short time (no more than 2 seconds). If there is no process of the information stored, then the information will be lost quickly.
3. Short Term Memory, a short-term memory storage system, in a limited amount and in a limited time and has a capacity of 5-9 bits of information (memont Miller). The process of maintaining information in short-term memory by repeating and memorizing because the longer an information stays in short-term memory, the greater the chance the item will be transferred to long-term memory.
4. Long Term Memory, is a place where knowledge is stored permanently to be called later if you want to use it. This memory has a very large capacity to store a number of information.

A number of theories and information processing models have been developed by experts such as Biehler and Snowman (1986), Baine (1986) and Tennyson (1989). These theories are generally on three assumptions (Lusiana, 2012), namely :

1. That between stimulus and response there is a theory of information processing stages where at each stage a certain amount of time is required.
2. The stimulus that is processed through these stages will experience a change in form or content.
3. One of the stages has limited capacity.

From the three assumptions developed about the structural components and regulators of information processing flow as a control process. The information processing component is divided into three based on the different functions of capacity, form of information and the process of "forgetting" as shown in Figure 1 as follows :

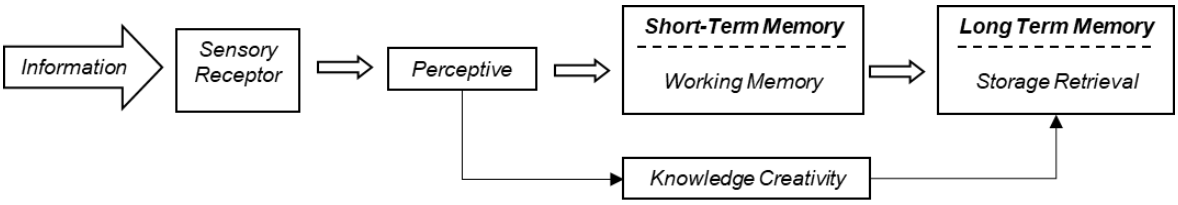

Figure 1 Information Processing Flowchart

The three components of the information processing flowchart can be explained as follows:

1. Sensory Receptors are cells where information is first received from outside. In the Sensory Receptor, information is received in its original form. Information can only last for a very short time and the information is easily interrupted or changed.
2. Working Memory is able to capture information given attention by individuals. Paying attention is influenced by the perceptive role. Characteristics of Working Memory, among others, have a limited capacity, approximately 7 slots of information in it can last approximately 15 seconds, if without repetition and information can be replaced in a different form from the original stimulus.
3. Long Term Memory, contains the amount of knowledge that is owned by individuals, has unlimited capacity, once information is stored, it will never be erased or lost. If the information is arranged properly it will facilitate the process of searching and reappearing information.

One adherent of Cybernetics, distinguishes there are two kinds of thinking processes, namely the algorithmic learning process (systematic thinking process, step by step, linear, converging, straight to a certain goal) and the process of heuristic thinking (how to think divergent, leading to several destination at once). Cybernetetic learning theory in learning activities suggests that learning is an internal process that cannot be directly observed and is a change in ability that is bound to a particular situation. There are nine stages in learning as external ways that have the potential to process internally in learning activities namely attracting attention, informing the learning objectives to students, stimulating memories in learning prescriptions, providing stimulant material, providing tutoring, encouraging work, giving informative feedback, evaluating performance work, improve review and transfer learning.

The superiority of this cybernetic learning theory is the way of thinking that is oriented to the process is more prominent, the presentation of knowledge meets economic aspects, learning capabilities can be presented more fully, all learning activities are directed to the objectives to be achieved, the transfer of learning in the real life environment, learning control, in accordance with the rhythm of each individual, the feedback gives clear signs of the level of performance achieved compared to the expected performance.

From the description above it can be concluded that according to the theory of Cybernetics is a learning theory that is more concerned with the learning process and states that learning is information processing. The process of processing information in memory begins with the presentation of information, followed by storing information and ending with revealing information that has been stored in memory.

D. Visual Illustration Media

Media comes from Latin which means intermediary. In the process of teaching and learning the presence of the media has significant significance to simplify the complexity of teaching materials that are not able to be spoken through certain words or sentences. The media can be used as a conduit of messages to achieve teaching objectives (Arendes, 2004).

Visual illustrations come from the word illustration which means picture, while visual is the sharpness of the eye. Visual illustration means the sharpness of the

eye to see the picture and the extent to which they can capture and read the meaning contained in the picture. There are six special functions of the Illustration listed, namely:

1. Give a shadow of each character in the story.
2. Give shadows, shapes, tools used in scientific writing.
3. Give a shadow of work figures.
4. Communicate the story.
5. Develop writing with each individual's creativity.
6. Provide certain humor to reduce boredom.

John Rising states that people can remember about 20% of what they hear and 50% of what they see and 75% of what they do. Based on this statement it can be concluded that learning by doing will be more beneficial than listening. Through visual illustrations will be able to communicate and use real language. Visual communication is an ongoing process. Visual thinking involves images, eyes, brain and hands. The involvement of images, eyes, brain, and hands is related to the importance of information held. From this description it can be concluded that the visual illustration media is a learning medium that demands and stimulates the nerves of the brain so that it creatively captures information transmitted through images.

RESEARCH METHODOLOGY

This research was conducted at various Public Schools in Cimahi City collaboratively between teachers, supervisors and students. The characteristics in the class belong to the ordinary class, meaning that it is not a superior class. Qualitative data between students and teachers, students and students will be carried out through observation, with sociogram chart aids, while student activity in learning is also carried out through observation with structured and systematic observation sheet aids. Quantitative data that records students' absorption of learning will be done through written evaluations with the help of multiple-choice questions and fields.

The instruments designed in this class action research consisted of Learning Preparation Plans, Student Worksheets and CDs (Pictures) according to themes, observation guidelines and field note aids, grids and test results for learning outcomes that were equipped with instrument calibration. The research method

used is the concept of Class Action Research visualization as shown in the following figure 2:

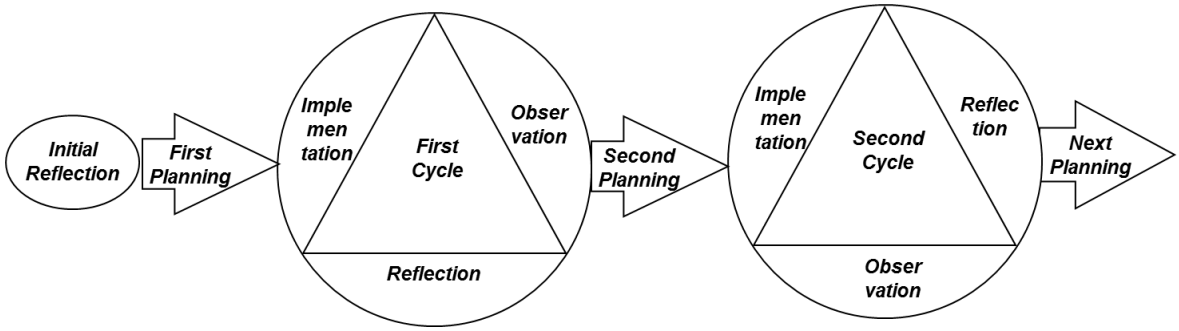

Figure 2 Cycle Model for Class Action Research

(Source : Mc. Tagart, 1992)

Explanation of each stage in the Class Action Research visualization model :

1. Action Planning Phase In Cycle I, the activities carried out in planning CAR in the first cycle are to prepare a learning implementation plan with a predetermined theme, for example the Flora-Fauna theme using the PPP (Presentation, Practice, Production) method, coordinating class in the classical form and divided into nine groups, each group with an assignment using the media images (visual illustrations) from a CD or comic drawing and is equipped with a Student Worksheet.
2. Action Implementation Stage, carrying out learning with the media Visual illustrations that vary according to the plan of action implementation above.
3. Observation and Evaluation Phase, the observation is carried out simultaneously with the learning process. Observations were made by observers in an effort to collect data. The evaluation will be carried out in an effort to collect quantitative data and will be carried out at the end of the learning for each cycle and carried out in writing.
4. Analysis and Reflection Phase, carried out after the last learning process. The results of the reflection will answer the problems that become obstacles to improving the quality of the process as well as learning outcomes & solutions.

The research conducted can be illustrated in the following chart:

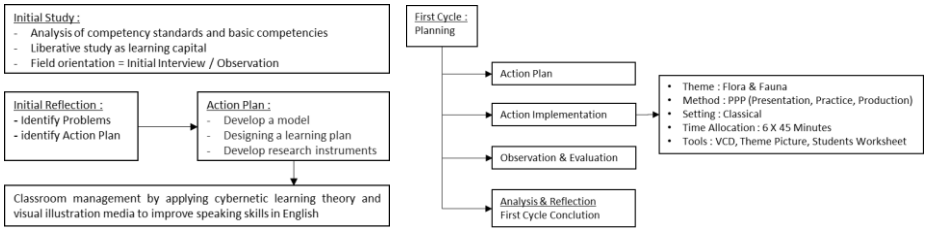

Figure 3 Research Plan Flowchart

DISCUSSION

A. Application of Cybernetetic Learning Theory with Visual Illustration Media in English.

It has been explained above that the application of Cybernetetic learning theory is information management and this theory is included in the scope of cognitive theory because it has in common that is concerned with the learning process rather than learning outcomes. The more sophisticated the information found, it will require a wider and more varied thinking creativity which will be expressed in language, specifically speaking. Cybernetetic learning theory is information management. This theory is included in cognitive theory because it has something in common that is concerned with the learning process rather than learning outcomes. The more sophisticated the information determined, it will require a wider and more varied thinking creativity. From this extraordinary ability to process information and learning capacity, one's mind map becomes a manifestation in the form of language skills, specifically speaking.

According to Suciati and Prasetya (2001) Sibernetic theory in learning activities is well applied in the following steps (Budiningsih, 2005):

1. Determine learning objectives.
2. Determine learning material.
3. Reviewing the information system contained in the subject matter.
4. Determine learning approaches that are appropriate with the information system (whether algorithmic or heoristic).
5. Arrange the subject matter in an order that is appropriate to the information system.
6. Serve material and guide students to learn in patterns that correspond to the sequence of learning materials.

Speaking English (foreign language) in addition to speech must also learn vocabulary. Putra (2008) suggested that there are two main components that must be considered, namely the vocabulary of the language itself and the meaning of the two components need to be made a mental representation beforehand with the method of remembering abstract and then made associations. If the vocabulary is remembered is relatively long (more than two syllables) can be cut such as "junkcetereeng" which means "to go around".

To make a mental representation can be done cutting / grouping such as "junkee and teering" Mental representation of the word "junkee" is "jakett" and mental representation of the word "teering" is "plate". As for the meaning of the word "to go around" mental representation in the form of circular movements like a whirlwind. After that created an association that connects the jacket, plate and get around. The association contact is that you put your jacket on a magic plate and then fly around. Whatever contact the association is created, make sure the contact has a high level of uniqueness and detail. Thus, an increase in foreign vocabulary will always be inherent in memory.

The following Diagram for Increasing Foreign Vocabulary is shown in Figure 4 below.

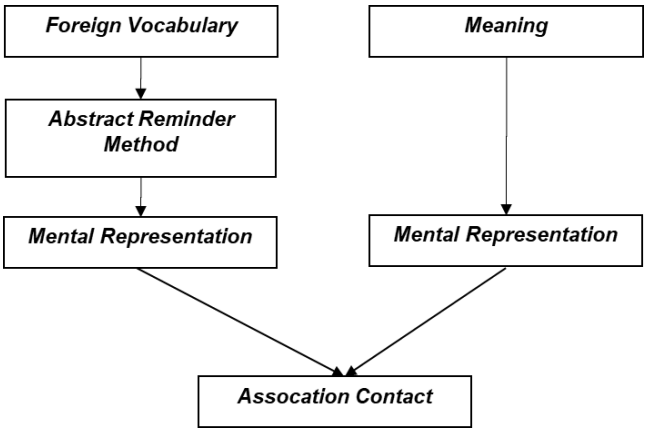

Figure 4 Foreign Vocabulary Enhancement Chart

To be more interesting in learning the system, it is necessary to apply it with an appropriate media, visual illustrations (images) are more dominant. With pictures students will be happier and feel happy so they don't feel tired and boring. Thus, Cybernetetic learning theory applied to learning media Visual illustration is very helpful for students to create learning situations that are more relaxed and comfortable, so that it can lead students to be more creative in interpreting the meaning contained in pictures by realizing it in the form of language, specifically speaking. With creative images, the learning process will be more interesting.

B. Research Finding

The following findings were obtained during the study using the conceptualization of Class - Action Research concept :

1. First Cycle

a. Planning, making lesson plans that apply cybernetic learning theory with visual illustration media with classical classroom settings. The facilities used are TV, VCD and Student Worksheet.
b. Implementation, in every action always begins with greetings / greetings, observations passed and apperception to link the material to be given. Furthermore, displaying pictures of animals (fauna) in accordance with the planning with the theme Flora-Fauna. They must identify the type, place of residence and food, then each group representative must report their work in front of the class through speaking skills. This cycle ends with an assessment / evaluation.
c. Observation / Evaluation, each group is ready with the results / reports that will be reported in front of the class in turn. From the results of this evaluation produced several summaries of various types of animals. Students conduct short transactional conversations of various types of animals in pairs, then end with the making of a summary of the animals that are around us. To measure the achievement of indicators, an assessment / evaluation is carried out. Conclusions from observations relating to students in the first cycle are as follows:
    1) Students do not seem to fully understand what will be done. Most of them still make sentences carelessly to discuss their respective tasks.
    2) Most of the group members are still inactive.
    3) Each group representative does not dare to come forward (waiting for orders) to deliver / report the results of the discussion in the form of a picture of an animal.
    4) By the time the reporting was finished there was no response from the other groups, they seemed to be still rigid.
d. Reflection, based on the findings above from the first action to the third action in the first cycle and the results of the analysis between researchers and collaborators, the planning of learning in the second cycle will be changed in class settings to form the letter U and the division of groups is determined by the teacher for equalization / balance. Each individual in the group must be actively involved, for example making sentences identified from the pictures provided. The subject matter / information source is colorful and interesting pictures.

2. The second cycle
    a. Planning, choosing material and determining learning objectives, making learning plans (RPP) with cybernetics theory and visual illustration media (pictures), PPP (Presentation, Practice, Production) methods with class settings forming an U Shape. Learning is carried out inside and outside the classroom for refreshment. As a supporting facility equipped with VCDs, suitable drawings and student worksheets.
    b. Implementation, the initial learning activities carried out as usual with greetings, class attendance and material apperception. As a core activity students were given pictures about the botanical garden per group in a sitting position forming a U. Each group collected a minimum of five sentences from the pictures contained therein. After that it is discussed and arranged together into a narration / discourse about the botanical garden which is read in front of the class as the end of the activity.
    c. Observations, with class settings forming the letter U. Each group formulates the sentences written in front, then arranged into a walima / text about botanical.
    d. The action of learning outside the classroom (in the flower garden) in the school environment. All activities in the study were carried out in English and the results of the study were reported in the form of worksheets.
    e. Observation / Evaluation, a brief observation as follows :
        1) Students can follow the teacher's instructions well.
        2) Concentration of students' attention is increased.
        3) Children's enthusiasm is increased at every action / meeting.
        4) The child's understanding of vocabulary and sentences is better.
        5) Broader grammar mastery.
        6) Student creativity increases in groups.
        7) The teacher is easier to direct students to take action, so that the classroom situation appears alive.
        8) Students are more confident in applying English to communicate during learning.
        9) The ability of students to answer questions from the teacher is more daring.

10) Learning time ends without feeling

f. Reflection, the result of collaboration decided that this research was sufficient to be carried out with two cycles, because students were in accordance with what was expected, both observing the images and environmental interactions.

Based on the results of the research described above, it will be rewritten by combining a cybernetic learning theory from one to two cycles. In the first cycle the implementation of learning applies Cybernetetic learning theory with visual illustrations carried out with the theme Flora - Fauna. In establishing cybernetics learning theory and visual illustration media, the information packaged through the pictures arranged (according to Algorithmic or Heuristic mindset) is quite interesting for students to be more happy with bright colors. This will encourage students to take part in fun learning.

Implementation of learning in the second cycle, arranged based on the results of reflection in the first cycle. The deficiencies in the first cycle are corrected in the second cycle, for example the classical classroom settings (in the first cycle) attract less attention, because students only face one direction. Weaknesses in this kind of classroom setting include detrimental to students sitting behind. They feel they don't pay attention so they get bored quickly. Therefore, in the second cycle, the class settings are changed to form the letter U. This model tends to facilitate the control of students who are not active. The use of theory and media are still the same as those applied in the first cycle. In this second cycle students seem more enthusiastic, especially when they go down to the flower garden (around the school) to examine directly the types of plants that are there. This is consistent with stated by Thorndike, that learning is the process of interaction between stimulus and response. Stimulus is anything that can stimulate learning activities such as thoughts, feelings or other things that can be captured through the senses, while the response is the reaction that is raised by students when learning, can be in the form of thoughts, feelings or movements / actions.

These results prove that classroom management is very good for improving quality, both in speaking skills and the other three skills namely listening, reading and writing. Even more dominant, classroom management will produce a pleasant learning atmosphere and create a conducive learning environment so that goals are reached. This is in line with the opinion of Djamarah (2006) that

classroom management is a teacher's task that is never left behind, namely to create a conducive learning environment so that goals are achieved effectively and efficiently. Conversely, the brain cannot work optimally if the feeling is depressed.

CONCLUSION AND SUGGESTION

A. Conclusion

Classroom action research on improving speaking English by applying cybernetic learning theory and visual illustration media conducted over two cycles produces the following conclusions:

1. The application of the Action Research - Class (PTK) visualization model has proven to be an alternative learning reference for teachers and students who are fun.
2. Class settings form the letter U tend to facilitate the control of students who are not active so that it can improve the quality of graduates better, especially in speaking skills.
3. The application of cybernetic learning theory and visual illustration media as innovations in learning makes students feel more comfortable and not depressed by fear so that they can express information received optimally.
4. Learning methods conducted by the teacher can improve English speaking skills towards students well. Teachers become more creative and innovative in carrying out learning, the relationship between teacher and students feels more intimate and positive, so students are not bored in participating in learning, able to stimulate a diverse opinion competition between students so that the class is not boring

B. Suggestion

The following suggestions are useful for future research:

1. To improve English speaking ability applying Cybernetetic learning theory and visual illustration media, it is deemed necessary to be followed up in the Subject Teachers' Consultation as innovations in learning.
2. As a teacher must be able to create a pleasant learning environment, both media users and locations / places, including rewards are needed to increase the spirit of learning.

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