

CHAPTER II

REVIEW OF THE RELATED LITERATURE

This chapter covers two main discussions related to the study, they are the behaviorism learning theory, and English for computer.

A. Behaviorism Learning Theory

Learning is the activity of obtaining knowledge.³ It is usually defined as a change in an individual caused by experience (Mazur, 1990; Rocklin, 1987).⁴ Learning is a characteristic of the human life because human beings do learning since the day they was born. They learn to walk and talk when they was child, and when they grew up they learn to ride a bicycle, learn how to operate a computer, and many others.

All sorts of learning are going on all the time, and it takes place in many ways. Sometimes it is intentional, sometimes it is unintentional.⁵ Learning is intentional when students acquire information presented in a classroom or when they look something up in the encyclopedia. However, it is unintentional, as in case of the children's reaction to the needle when they see a doctor. They have learned to associate the needle with pain. This reaction may be unconscious, but it is definitely learned behavior.

³ Cambridge Advence Learner's Dictionary, Third Edition. (USA: Cambridge University Press, 2008).

⁴ Robert E. Slavin, *Educational Psychology: Theory and Practice 4th Edition*, (USA: Paramount Publishing, 1994), 125.

⁵ *Ibid.*, 153.

In the teaching and learning process, the theories of learning are particularly needed. Hence theory and practice in learning are closely related. This is important to be emphasized as a basic understanding to the learners in learning much deeper and complex subjects. There are some learning theories found by researchers. However, there is only one learning theory which is compatible to the objective of this research, it is behaviorism learning theory.

1. The definition of behaviorism learning theory

Behaviorism learning theory is an explanation of learning that emphasizes observable changes in behavior.⁶ The dominant explanation about behaviorism learning theory said that behaviorism learning is a kind of learning that involves habit formation.

“Habits are formed when learners responds to stimuli in the environment and subsequently have their responses reinforced so they are remembered. Thus, a habit is stimulus-response connection.”⁷

Behaviorism also called as stimulus and response theory, because it has basic sight that behavior, begins with the stimulus (action) which immedietly causes a response (reaction).

Behaviorists account for learning in term of imitation, practice, reinforcement, and habit formation. According to the behaviorists, all learning, whether verbal or non-verbal take place through the same underlying processes. Learners receive input from sources in their environment and they form

⁶ Ibid., 152.

⁷ Rod Ellis, *Second Language Aquisition*, (New York: Oxford University Press, 1997), 31.

understandings. These understandings become stronger as experiences and repeated.⁸

Behaviorism theory was introduced by an american psychologist John B. Waston (1878-1958). Waston conducted a study which made some principles in learning based on *Stimuli-Respons Bond (S-R)* theory.⁹ According to his theory, a learning process is organized by a respons which made by a stimuli, and this process does not need any consciousness. Therefore, consciousness is not a significant thing in behaviorism, but the significant one is continuous. The corelation between S and R can be a behavior when it happens continuously. Waston argued, that in the behaviorism theory repetition and conditioning are needed in learning. Response should be strengthen by repetition from the first or previous response.¹⁰

2. The various theories of behaviorism learning theory.

In the study of behaviorism learning, there are some behaviorists who conducted researches about it. Some of the results of their researches became theories which support the theory of behaviorism. They are classical conditioning, operant conditioning, connectionism theory, and social learning.

⁸ Patsy M. Lightbown, Nina Spada, *How Language are Learned Second Edition*, (Nwe York: Oxford University Press, 1999), 35.

⁹ Abdul Chaer, *Psikolingustik Kajian Teoretik*, (Jakarta: Rineka Cipta, 2009) 87.

¹⁰ Purwa Atmaja Prawira, *Psikologi Pendidikan: Dalam Prespektif Baru*, (Yogyakarta: Ar-Ruzz Media, 2012) 262.

a. Classical conditioning by Pavlov

The classical conditioning was a theory found by Ivan P. Pavlov (1848-1936), a Russian physiologist.¹¹ Pavlov conducted a research related to the salivation of a dog.

“Pavlov observed that if meat was placed near a hungry dog, the dog would salivate. Because the meat provoked this response automatically, without any prior training or conditioning, the meat is referred to as an unconditioning stimulus. Similarly, because salivation occurred automatically in the presence of meat, also without the need for any training or experience, this response of salivating is referred to as an unconditioned response. While the meat will produce salivation without any previous experience or training, other stimuli, such as bell, will not produce salivation.”¹²

His experiment showed that in classical conditioning, a neutral stimulus, such as a bell, that at first prompts no response becomes paired with an unconditioned stimulus (such as meat) and gains the power of that stimulus to cause a response (such as salivation). According to the description above, we can conclude that classical conditioning means associating a previously neutral stimulus with an unconditioned stimulus to evoke a conditioned stimulus.

Based on his experiment, Pavlov argued that learning is a long arrangement of conditioning response. This classical conditioning showed that one's ability to produce conditioning responses is closely related to the kind of system which is being used. This theory believes in the existence of nature differences in learning ability. The conditioning response can be strengthened by intensive and well regulated repetitions. Pavlov did not interested in the “meaning” or

¹¹ Abdul, *Psikolinguistik.*, 84.

¹² Robert, *Educational.*, 144-155.

“understanding” or even “insight”. Finally, Pavlov’s conditioning response is the best basic unit is learning.¹³

b. Operant conditioning by Skinner

Operant conditioning is a theory of behavior which is using consequences to control the occurrence of behavior. Operant conditioning theory was introduced by B. F. Skinner. He proposed another class of behavior, which he labeled “operant” behaviors because they operated on the environment in the apparent absence of any unconditioned stimuli, such as food.¹⁴ This theory was also popular as neobehaviorism, because it was a new form of behaviorism. Operant conditioning theory would be explained based on the Skinner’s experiment to rats and a box, called Skinner box.¹⁵

“A skinner box for rats would consist of a bar that is easy for the rats to press, a food dispenser that could give the rat a pellet of food, and a water dispenser. The rat cannot see or hear anything outside of the box, so all stimuli are controlled by experimenter. After a few accidental bar pressed, the rat would starts pressing the bar frequently, receiving a pellet each time. The rat’s behavior had been conditioned to strengthen bar pressing and weaken all other behaviors (such as wandering around the box).”¹⁶

One important advantage of the Skinner box is that it allows for careful scientific study of behavior in a controlled environment. Skinner’s contribution consists not only of what he discovered but also of the methods he used (Delprato

¹³ Abdul, *Psikolinguistik*, 85.

¹⁴ Robert, *Educational*, 157.

¹⁵ Abdul, *Psikolinguistik*, 89.

¹⁶ Robert, *Educational*, 157.

and Midgley, 1992). His experiment can be repeated by anyone with the same equipment.¹⁷

Skinner believed that learning process between human and animal is the same, it is through this operant conditioning. The most important thing in this theory is the relation between stimulus and response should be directly observable, without considering the mental relation among them, because mental relation is unobservable.¹⁸ Skinner's experiment took the conclusion that reinforcement always increases the possibility of behavior. Since that, he argued that reinforcement should be given quickly before the other behavior interferes, and in order to maximize the result.

c. Connectionism theory by Thorndike

Connectionism theory was introduced at the first time by Pavlov. Then, this theory was continuously explored by some researchers, such as E. L. Thorndike (1874-1949). He was the first researcher who conducted an experiment using a cat to investigate the relation between stimulus and response. His experiment was conducted by a systematic procedure.

“Thorndike placed a cat in a box from which the cat had to escape to get food. He observed that over time the cat learned how to get out of the box more and more quickly by repeating the behaviors that led to escape and by not repeating those behaviors that were ineffective.”¹⁹

According to Thorndike, the learning process of the cat could be explained by stimulus-response theory. At least there are two reasons from the cat's learning in

¹⁷ Ibid.

¹⁸ Abdul, *Psikolinguistik*, 90.

¹⁹ Robert, *Educational*, 156.

the experiment. First, the cat was hungry, and it motivated the cat's learning to open the box. The second reason, there is a factor, the cat's food that could satisfying the hungry cat. Then, he hypothesized that behavior was determined in a reflexive way by stimuli present in the environment rather than by conscious or unconscious thoughts. Based on the experiment, it was shown that the cat could not successfully open the box in one effort. The cat was failed in several times before it could open the box. Therefore, the cat's deed in opening the box called *trial and error learning*.²⁰

Thorndike also introduced The Law of Effect from this theory, which is more popular as "reinforcement" now.

"Thorndike's Law of Effect stated that if an act followed by a satisfying change in the environment, the likelihood that the act will be repeated in similar situations increase. However, if a behavior is followed by an unsatisfying change in the environment, the chances that the behavior will be repeated decrease."²¹

Therefore, this Law of Effect theory basically suggests three principles:²²

1. When an organism wants to do something, finishing what it wants to do will satisfying.
2. When a stimulus-response is followed by a satisfying condition, the stimulus-response relation is strengthening. However, when it is followed by unsatisfying condition, the repetition of the stimulus-response relation will be stopped.

²⁰ Purwa, *Psikologi pendidikan.*, 266.

²¹ Robert, *Educational .*, 156.

²² Abdul, *Psikolinguistik.*, 87.

3. The relation between stimulus and response can be strengthening through training.

d. Social learning theory by Bandura

Social learning theory is a theory that emphasizes learning through observation of others. Social learning theory is a major outgrowth of the behaviorism learning theory tradition. It was developed by Albert Bandura (1969). This theory accepts more of the principles of behaviorism theories, but focuses to a much greater degree on the effects of cues on behavior and on internal mental process, emphasizing the effects of thought on action, and action on thought (Bandura, 1986).

Social learning theory is based on recognition of the importance of observational learning and self-regulated learning. Observational learning is learning by observation and imitation of others, and self-regulated learning is a learning which is rewarding or pushing one's behavior. Bandura noted that learning through modeling, directly or vicariously, involves four phases: paying attention, retaining the modeled behavior, reproducing the behavior, and being motivated to repeat the behavior. Bandura proposed that students should be taught to have expectations for their own performances and to reinforce themselves.²³

3. Implication of Behaviorism for education

Behaviorism is the theory that the study of the human mind should be based on people's actions and behavior, and not on what they say that they think or

²³ Robert, *Educational* ., 174-175.

feel.²⁴ There are strengths and limitations of behaviorism learning theory. The basic principles of this theory are as strongly established as any in psychology and have been demonstrated under many different conditions. It is important to recognize that this theory is limited in scope. With the exception of social learning theorists, behaviorists in learning focus almost exclusively on observable behavior.²⁵

Behaviorism is the central to applying educational psychology in the classroom in classroom management, dicipline, motivation, instructional models, individualized instruction, and other areas. Behaviorism learning theory is limited in scope in that it describes only observable behavior that can be directly measured.²⁶ This theory is the main theory to educational psychology, and it has some contributions for education.²⁷

- a. Behaviorism has gave a significant contribution to educational development in term of learning and motivation.
- b. Behaviorism has successfully solved a controversial issue between mentalistics aproaches and mecanics toward human behavior.
- c. Behaviorism gives so much attentions for psychological fields, such as in term of the children's emotion and behavior.
- d. Behaviorism has gave a new method in learning which is well-know in many countries with the learning in programming and attaining the success.

²⁴ Cambridge Advance learner's Dictionary .

²⁵ Robert, *Educational* ., 179.

²⁶ Ibid. 181.

²⁷ Purwa, *Psikologi pendidikan* ., 63-64.

- e. Behaviorism makes a point of environment and the impact for its development.
- f. Behaviorism believes that all behaviors are learned in constant interaction process with the environment.
- g. Behaviorism has developed a new method in service techniques not only to the normal students but also to the disable and abnormal students.

B. English for Computer

People who have grown up with PCs and mobile phones are often called the digital generation. They do many things by their computer, such as they use it to access the internet, download musics and video, do research, prepare presentation, do calculation, playing games, take and edit photos, etc. However, many parts in this devices use English as their language interface. To help people in operating computer, English for computer is formed.

English for computer is one of English for Spesific Purposes branches which is the key to know and get the benefit of computer, also to learn how to communicate with another persons by IT (Information Technology). Here, we will discuss about recognizing a computer, English for computer itself.

1. Recognizing a computer

- a. The definition of computer

Computer is an electronic machine which is used for storing, organizing and finding words, numbers and pictures, for doing calculations and for controlling

other machines.²⁸ Computer can accept data in certain form, process the data, and give the results of the processing in a specified format as information. A computer system consists of two Components: Hardware and software.

b. The computers components

Hardware is any electronic or mechanical part you can see and touch. Software is a set instructions, called a program, which tells the computer what to do.²⁹ There are three basic hardware sections: the central processing unit (CPU), also called the processor, main memory, and peripherals. Central processing unit is the most influential component, because it is the 'brain' of the computer. It is built into a single chip which is a small piece of silicon with a complex electrical circuit. Its function is to execute program instructions and coordinate the activities of all the other units. The main memory holds the instructions and data which are being processed by the CPU. Peripherals are the physical units attached to the computers. They include storage devices and input-output devices. Input devices are the pieces of hardware which allow us to enter information into computer. The most common are the keyboard and the mouse. We can also interact with a computer by using a light pen, a scanner, a trackball, a graphics tablet, a game controller or a microphone.³⁰

Software is the computer programs. It is an electrical instruction which commands the computer's hardware to do something. Software makes computer's hardware lives. There are two kinds of software: System software and application

²⁸ Cambridge Advanced Learner's Dictionary.

²⁹ Santiago Remacha Esteras, *Infotech: English for Computer Users Fourth Edition*, (USA: Cambridge University Press, 2007), 08.

³⁰ *Ibid.*, 9-22.

software. System software should be installed first before another software. The function of system software is to help the computer in doing the main operational tasks which the other softwares running. The most important thing of system software is **operating system**. Operating system is the main control to run a computer. Some operating systems for PC are kinds of Microsoft products (e.g. Windows XP, Vista), Unix, and Linux. When we have finished installing an operating system we can continue installing the application softwares. It helps us to do some tasks or even only to seek for some entertainments, for example Microsoft Word.³¹

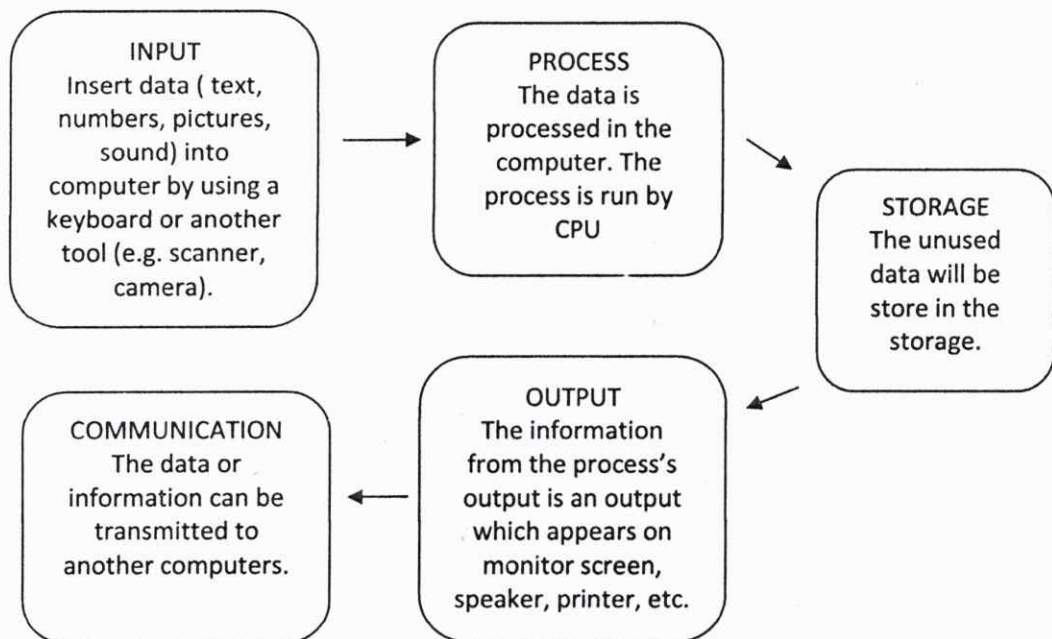
c. The works of computer

Basically, before we learn and understand more about how does the computer work, it is important for us to know three basic concepts:³²

- 1) The objective of computer: To change data into information form.
- 2) Differences between hardware and software (programs).
- 3) Basic operations of computer, they are: input, process, storage, output, and communication.

³¹ Brian K. William, Stacey C. Sawyer, *Using Information Technology 7th Edition: Pengenalan Praktis Dunia Komputer dan Komunikasi*, (Yogyakarta: ANDI, 2007), 33.

³² Ibid., 25.



*The illustration of basic operation system

2. Windows-Based Computer

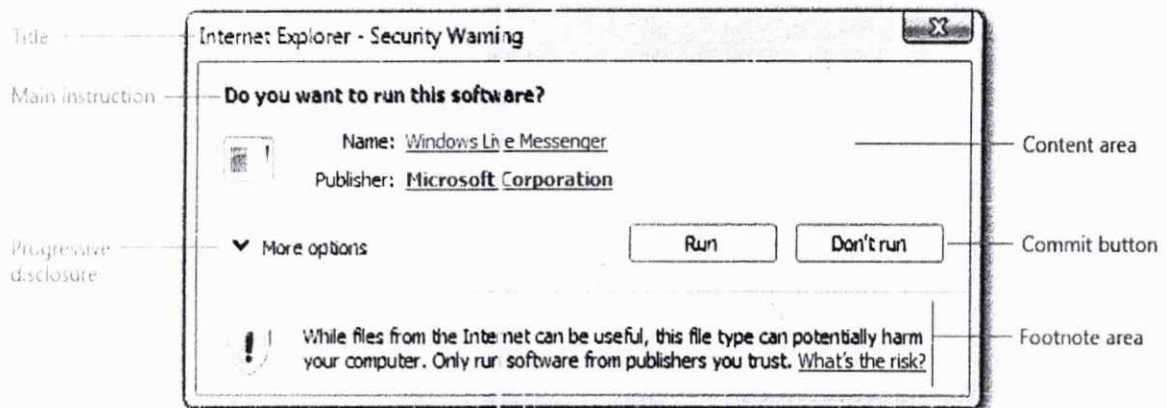
a. Recognizing Windows-based computer.

Windows is an operating system that dominates computer's world. It is an operating system which is produced by Microsoft, and generally being used on PC desktop and portable. It is an evolution product of DOS (Disk Operating System) which had been renewed. Since the first time Windows was published at 1800, Windows has changed into some versions whereby significance improvement happened in each version's changing. The Windows' versions which commonly used are Windows 7, Windows XP, and Windows Vista.³³

³³ Ibid., 140.

b. Dialog Boxes

According to the library of Microsoft Corp.,³⁴ A dialog box is a temporary window an application creates to retrieve user input. An application typically uses dialog boxes to prompt the user for additional information for menu items. A dialog box usually contains one or more controls (child windows) with which the user enters text, chooses options, or directs the action. It consists of a title bar (to identify the command, feature, or program where a dialog box came from), an optional main instruction (to explain the user's objective with the dialog box), various controls in the content area (to present options), and commit buttons (to indicate how the user wants to commit to the task).



³⁴ Windows Application Development: Dialog Boxes", (online), www.mdsn.microsoft.com/library/windows, accessed on April 24th 2013

The commit buttons based on the design pattern:

Pattern	Commit buttons
Question dialogs (using buttons)	One of the following sets of concise commands: Yes/No, Yes/No/Cancel, [Do it]/Cancel, [Do it]/[Don't do it], [Do it]/[Don't do it]/Cancel.
Question dialogs (using links)	Cancel.
Choice dialogs	<ul style="list-style-type: none"> • Modal dialogs: OK/Cancel or [Do it]/Cancel • Modeless dialogs: Close button on dialog box and title bar • Task pane: Close button on title bar
Progress dialogs	Use Cancel if returns the environment to its previous state (leaving no side effect); otherwise, use Stop.
Informational dialogs	Close.

Dialog boxes have two fundamental types:

- **Modal dialog boxes** require users to complete and close before continuing with the owner window. These dialog boxes are best used for critical or infrequent, one-off tasks that require completion before continuing.
- **Modeless dialog boxes** allow users to switch between the dialog box and the owner window as desired. These dialog boxes are best used for frequent, repetitive, on-going tasks.

When properly used, dialog boxes are a great way to give power and flexibility to your program. When misused, dialog boxes are an easy way to annoy users, interrupt their flow, and make the program feel indirect and tedious to use. **Modal dialog boxes demand users' attention.** Dialog boxes are often easier to implement than alternative UIs, so they tend to be overused. **A dialog box is most effective when its design characteristics match its usage.** A dialog box's design is

largely determined by its purpose (to offer options, ask questions, provide information or feedback), type (modal or modeless), and user interaction (required, optional response, or acknowledgement), whereas its usage is largely determined by its context (user or program initiated), probability of user action, and frequency of display.

Dialog boxes have several usage patterns:³⁵

- Question dialogs (using buttons) ask users a single question or to confirm a command, and use simple responses in horizontally arranged command buttons.
- Question dialogs (using command links) ask users a single question or to select a task to perform, and use detailed responses in vertically arranged command links.
- Choice dialogs present users with a set of choices, usually to specify a command more completely. Unlike question dialogs, choice dialogs can ask multiple questions.
- Progress dialogs present users with progress feedback during a lengthy operation (longer than five seconds), along with a command to cancel or stop the operation.
- Informational dialogs display information requested by the user.

³⁵ Ibid.

3. English for computer

a. English for computer users.

For various reasons English became an international language. The effect was to create a whole new mass of people wanting to learn English, not for the pleasure or prestige of knowing the language, but because English was the key to the international currencies of technology and commerce. Learning a language was its own justification. But as English became the accepted international language of technology and commerce, it created a new generation of learners who knew specifically why they were learning a language.³⁶

English for computer is a special form of the language. It is used for a specific purpose which helps people to work and study by using their computer properly. English for computer is just one branch of EST (English for Science and Technology). However, English for computer is not different kind from any other English for specific purposes. It is only an English material about computer usage, which is based on learners need.³⁷

Although English for computer is important in language teaching, there is not any specific materials discussed in this subject. English for computers is only discussing about any common vocabularies which is related to computer and some descriptions of computer's parts and components, also how its running.

³⁶ Tom Hutchinson, Alan Waters, *English for Specific Purposes: A Learning-centred Approach*, (USA: Cambridge University Press, 1987), 06.

³⁷ *Ibid.*, 18-19.

b. Computer languages

English is only one of language interfaces which is used in computer. Unfortunately, computer itself cannot be understood by English or any other natural languages. The only language it can understand directly is **machine code**, which consists of 1s and 0s (binary code). Machine code is too difficult to write. For this reason, we use symbolic languages to communicate instructions to computer.³⁸

³⁸ Santiago, *Infotech.*, 122.