

## CHAPTER 2

### LITERATURE REVIEW

This chapter consists of two parts. The first part will discuss the definition of assessment itself, the principles of assessment, types of assessment which based on its purposes, time of implementation, methods and also techniques of assessment. The theory about cognitive process is also explained in the second part of this chapter.

#### 2.1 The Concept of Assessment

Assessment is an essential component of teaching. Assessment has been defined as “a process of collecting, synthesizing and interpreting information” (Airasian, 2012, p. 3), and ‘a process of judgment’ (Boud, 2007, p. 77). Teachers need the information obtained from assessment practices to support them in making decisions (Astin, 1991) (Airasian, 2012), and to establish and maintain a classroom environment that is supportive to student learning (Astin, 1991) (Biggs, 2007) (Bloxham, 2010).

Boud argues that assessment as informing judgment provides an educational foundation for assessment practice rather than focus on measurement alone (Boud, 2007, p. 10). So, good assessment is about *description* for teachers and students to recognize what is under discussion, *evaluation* for value judgments that can be available and meaningful to all concerned and also *remediation* for improvements

that can be made in performance where there are errors and deficiencies (Brown Jr, 1999, p. 7).

### **2.1.1 The Principles of Assessment**

According to Brown (2004), assessment in language teaching and learning has five principles. They are practicality, reliability, validity, authenticity, and washback (Brown, H.D., 2004, pp. 19-28). Practicality, the first principle, refers to evaluating the assessment according to cost, time needed, and usefulness. It requires the assessment to be easy to conduct in the class. Second, reliability means that the assessment is consistent and dependable, which means that the same score will be achieved from the same type of students no matter when it is scored or who scores it. Validity, the most important principle, requires the language assessment should be carefully and structurally designed according to the specific skill which is wanted to be assessed. Authenticity is the fourth principle which requires language as natural as possible. It means that the tasks used in the assessment should be based on real-world context, includes meaningful, relevant, and interesting topics. Washback, the last principle, refers to the impact of the tests. According to Fulcher (2010), he states that washback refers to the impact of the use of test had on individuals and institutions (Fulcher, 2010, p. 294). The five principles of assessment provide important guidance for designing and choosing assessment tools.

Based on National Higher Education Standard Policy No. 44/2015 paragraph 20, there are five principles in doing assessment. The first principle is educative

which means that assessment should be motivating students in order to improve planning and learning way and also to achieve the learning outcomes of graduates. The second principle is authentic. Assessment should be oriented to continuous learning process and the learning outcomes that reflect the ability of students during the ongoing learning process. The third principle is objective. Assessment should be based on the standard that had been made. Teachers are not allowed to become subjective in grading their students. The fourth principle is accountable. Teachers have responsibility on the result of the assessment to be reported, whether to the internal or the external people, such as school or parents. The last principle is transparency. The assessment should be transparent as it is aimed is to help learner improvement. The result and the reasons of the assessment should be accessible by all sides, especially students and their parents (KEMENDIKNAS, 2013).

Proposed by two experts, Earl and Katz (2006) to make the right decisions about students, it is necessary that teachers must adhere to the basic measurement principles. They believe that teachers need to be credible, fair, free from bias, and connected to their intended purposes (Earl, 2006, p. 9).

### **2.1.2 Types of Assessment**

There are four types of assessment which classification are based on four aspects: *purpose*, *time*, *method*, and *technique*.

### 2.1.2.1 Purposes of Assessment

Assessment purposes have been categorized as assessment *of* learning, assessment *for* learning and assessment *as* learning (Earl, 2006). Assessment *of* learning is characterized by how we traditionally view assessment. As Earl emphasizes that the assessment of learning is summative in nature that is used to confirm what students have known and to demonstrate how students have achieved the curriculum outcomes (Earl, 2006, p. 14). In addition to Boud and Falchikov, it involves making judgments about students' summative achievement for purposes of certification (Boud, 2007).

On the other hand, assessment *for* learning is formative and diagnostic which happen while learning is still underway. Black and William (1998) argued that all activities in classroom are essentially feedback to students about present understanding and it should focus on the task, given regularly, relevant and specific to the task in order to determine the way forward (Black, 1998, p. 2). They stressed the important of feedback as a key purpose. As for diagnostic purpose, Stiggins, R. J., *et al.* (2007) view assessment throughout teaching and learning to diagnose student needs, plan the next steps in instruction that also provide students with feedback they can use to improve the quality of their work, and help students to lead them to success (Stiggins R. J., 2007, p. 3). In addition, Russell and Airasian (2012) states that formative assessment is observation and feedback intended to improve students'

learning whereas grading final decisions about students' learning at the end of instruction is called summative assessment (Airasian, 2012, p. 7).

The last, assessment *as* learning emphasizes assessment as a process of metacognition for students. According to Earl and Katz (2006), it is not just transferring ideas from one to others but is an active process of cognitive restructuring that occurs when inquiring new ideas (Earl, 2006, p. 41). It also needs student involvement in assessment using feedback, participating in peer assessment, and self-monitoring during progress of learning, but it should have revision for better learning (Bloxham, 2010, p. 15). This implies that assessment serves not only to make judgments to grade students but also need feedback in order to improve students' learning.

#### **2.1.2.2 Time of Assessment**

According to Brown (2004) there are various ways to conduct assessment in language teaching and learning. They are commonly distinguished based on the time of its implementation (Brown, H.D., 2004, p. 6). Those ways are diagnostic, on-going learning or formative and in the end of unit or summative assessment. Diagnostic assessment is designed to discover what students know and what they are able to do before they learn (Goode, K., Kingston, T., Grant, J.M., & Munson, L., 2010, p. 22). It also provides teachers with information of students' prior knowledge and misconception before a learning activity begin (Slattery, William, 2016) but it should not be graded since the aim of diagnostic assessment is to obtain information of

students' readiness to essential content goals of unit (Tomlinson, C., & McTighe, J., 2006, p. 72).

Brown (2004) stated that the formative assessment is conducted during the learning process using various tools such as portfolio, journal, etc and feedback is offered in order to improve student's language ability while summative assessment is conducted in the end of unit or semester using test. It aims to measure or summarize of what students grasp and is usually held regularly and frequent basis to the ends of modules or programs (Brown, H.D., 2004, p. 6).

### **2.1.2.3 Methods of Assessment**

Assessment by methods categorized into formal and informal assessment. According to Brown, formal and informal assessment are distinguished based on methods of its implementation (Brown, H.D., 2004, p. 5). Formal assessment is the way to assess students systematically, planned and allowed with set of procedures. Not all formal assessments can be called tests, for example observation, portfolio, or journal. They can be called formal assessment as long they designed systematically to obtain students' information of knowledge. On the other hand, informal assessment is the way to assess students without conducting test or non-test and usually will be used to know students achievement during the course. It is started with incidental, unplanned comments and responses along with coaching and impromptu feedback to students' performance. The comments or feedbacks can be like "well done", or excellent" (p.5).

#### **2.1.2.4 Techniques in Assessment**

There are four techniques that can be used to obtain learning target, performance skills and ability to create product. Arter *et al.* (2007) used the term 'methods' instead of techniques. Since the writer has already used the term 'methods' in the assessment types by methods, to avoid the misconception, the writer decided to use the term of 'techniques' of predetermined scoring criteria by Arter *et al.* (Stiggins R. J., 2007, p. 91). In short, the four assessment techniques are:

1) *Selected Response Assessment.*

This category includes all of the objectively scored paper and pencil test formats. The respondent is asked a series of questions, each of which is accompanied by a range of alternative responses. The respondent's task is to select either the correct or the best answer. These might include multiple choice, true-false, matching, short answer, fill-in items.

2) *Extended Written Response Assessment.*

The respondent is provided with set of exercises that calls for the preparation of an extended written answer. Students might be asked to answer a question at least several sentences in length or to provide an explanation of the solution to a complex problem. The scores also take one of two forms: number or percentage of points attained, or rubric scores.

3) *Performance Assessment.*

The respondent carries out a specified activity under the watchful eye of the observer who observes performance and makes judgment as to the quality of achievement demonstrated. To evaluate, rubric or scoring guide might be used for judging quality that has several dimensions, such as ideas, organization, voice, word choice, fluency in speaking, presentation, and use of language in an oral presentation.

4) *Personal Communication Assessment.*

One of the most common ways teachers gather information about day-to-day student achievement in the classroom is to talk to them. This assessment is not as in the same sense as multiple choices or a performance assessment, but on reflection, it can become clear that certain forms of personal communication definitely do represent assessments of student achievement.

## **2.2 Cognitive Processes in Assessment Tasks**

McTighe and Clemson in Costa's Book (1991) stated that thinking requires individuals to employ different strategies for organizing information and solving problems. Teachers not only directly require all students to memorize the correct answer, but they should take time to discuss the various ways in which students arrive at solutions (Costa, 1991, p. 307). Susan distinguishes level of thinking into two categories that are lower-order thinking (Remember, Understand, and Apply) and



higher-order thinking (Analyze, Evaluate and Create). She also stated that learning should begin from lower level of thinking to the higher level of thinking (Brookhart, 2010, p. 17).

#### **4.3.1 Lower-Order Thinking**

According to Anderson & Krathwohl (2002) before move to higher level of thinking, it is necessary to recall relevant information from long-term memory (Krathwohl, 2002, p. 215). Brookhart, however, views lower-order thinking as simply recall or factual response level (Brookhart, 2010, p. 2).

##### **2.2.1.1 Remember**

Recalling also called as *remember* level of thinking is the process of retrieving a relevant knowledge from long-term memory. It involves *recognizing* or *recalling* facts and concepts (Brookhart, 2010, p. 41). After recalling the previous knowledge of student, teacher will give explanations and reading in order to give more understanding about the topic (Krathwohl, 2002).

##### **2.2.1.2 Understand**

In *understanding* level, it requires students' ability to make their own meaning from the material. It involves the sub-skills for this process such as *interpreting, exemplifying, classifying, summarizing, inferring, comparing, and explaining*. This level of thinking involves basic comprehension to see whether

students comprehend a concept or story then ask them to construct it in their own meaning (Brookhart, 2010, p. 41).

#### **2.2.1.3 Apply**

Because learning at higher level is depend on knowledge and skills at lower levels, the third process, *applying*, refers to using a learned procedure either in a familiar or new situation (Airasian, 2012). This is a process of carrying out or using a procedure in situation given. Apply categories consist of two cognitive process; *executing* and *implementing* (Krathwohl, 2002, p. 215).

#### **4.3.2 Higher-Order Thinking**

Brookhart defines higher-order thinking level in terms of *transfer*, *critical thinking*, and *problem solving*. *Transfer* term by Anderson and Krathwohl (2001) in Brookhart (2010), means the ability of students not only to remember but also be able to apply what they have leant (Brookhart, 2010, p. 3). On the other hand, *critical thinking* is the ability to make logical inferences that reasonable to accept and also concerned about the accuracy and reliability of information in the premises of arguments and in the evidence offered in support of claims (Costa, 1991, p. 73) while *problem solving* requires students to demonstrate their knowledge and their ability to solve problems in various ways (Costa, 1991, p. 334). Some experts also put creative thinking as one of categories of higher-order thinking level. In Krathwohl, creative thinking is attached to *generating* which

based on cognitive processes it belongs to creating process. Creative thinking involves student to produce some alternative solutions when a description of a problem is given (Kratwohl, 2002, p. 231). In fact, Bransford and Stein cited in Susan Brookhart's book say that problem solving is necessary for critical thinking, creative thinking, and effective communication (Brookhart, 2010, p. 7). Based on Anderson & Kratwohl states in Brookhart Analyze, Evaluate, and Create in cognitive process are belonged to higher-order thinking (p.5).

#### **2.2.2.1 Analyze**

In *analysis* process, knowledge will break down into its constituent parts and thinking about how the parts are related to each other and to its overall structure and purpose. Students analyze by *differentiating, organizing, and attributing* (Kratwohl, 2002, p. 215). Brookhart also stated that multiple correct responses are still likely in analysis-level tasks (Brookhart, 2010, p. 41).

#### **2.2.2.2 Evaluate**

Before move to the top of Bloom's taxonomy, students must make *judgments* based on criteria and standards through *checking* and *critiquing* (Kratwohl, 2002, p. 215).

#### **2.2.2.3 Create**

Then the highest level, *create*, students will put elements together into a coherent form or functional whole. They may also reorganize elements into a

new pattern or structure through *generating, planning, or producing* (Krathwohl, 2002, p. 215).

### 4.3.3 Structure of the Cognitive Process

The cognitive process dimension represents a continuum of increasing cognitive complexity from remember to create. Anderson and Krathwohl identify 19 specific cognitive processes or called lists of active verbs that approximate the particular levels of student learning that further clarify the bounds of the six categories (Table 2.1).

**Table 0-1 Bloom's Revised Taxonomy**  
adapted from Anderson and Krathwohl, 2002, pp. 67–68.

Cognitive Processes	Examples
<b>Remember</b> – Retrieving relevant knowledge from long-term memory.	
<b>Recognize</b>	<i>Identify frogs in a diagram of different kinds of amphibians.</i> <i>Answer any true-false or multiple-choice questions.</i>
<b>Recall</b>	<i>Name three 19th-century women English authors.</i> <i>Write the multiplication facts.</i>
<b>Understand</b> - Determining the meaning of instructional messages, including oral, written, and graphic communication.	
<b>Interpret</b>	<i>Draw a diagram of the digestive system.</i> <i>Paraphrase Jawaharlal Nehru's tryst with destiny speech.</i>
<b>Exemplify</b>	<i>Draw a parallelogram.</i> <i>Name a mammal that lives in our area.</i>
<b>Classify</b>	<i>Label numbers odd or even.</i> <i>List the events of the Sepoy Mutiny of 1857.</i>
<b>Summarize</b>	<i>Make up a title for a short passage.</i> <i>List the key points related to capital punishment that</i>

Cognitive Processes	Examples
	<i>the Website promotes.</i>
<b>Infer</b>	<i>Read a passage of dialogue between two characters and make conclusions about their past relationship. Figure out the meaning of an unfamiliar term from the context.</i>
<b>Compare</b>	<i>Compare Mahatma Gandhi to a present day leader. Use a Venn diagram to demonstrate how two books by Charles Dickens are similar and different.</i>
<b>Explain</b>	<i>Draw a diagram explaining how air pressure affects the weather. Describe how interest rates affect the economy.</i>
Apply – Carrying out or using a procedure in a given situation.	
<b>Execute</b>	<i>Add a column of two-digit numbers. Orally read a passage in a foreign language.</i>
<b>Implement</b>	<i>Design an experiment to see how plants grow in different kinds of soil. Proofread a piece of writing.</i>
Analyze - Breaking material into its constituent parts and detecting how the parts relate to one another and to an overall structure or purpose.	
<b>Differentiate</b>	<i>List the important information in a mathematical word problem and cross out the unimportant information. Draw a diagram showing the major and minor characters in a novel.</i>
<b>Organize</b>	<i>Make a chart of often-used figurative devices and explain their effect. Make a diagram showing the ways plants and animals in your neighborhood interact with each other.</i>
<b>Attribute</b>	<i>Determine a character's motivation in a novel or short story. Look at brochures of political candidates and hypothesize about their perspectives on issues.</i>
Evaluate – Making judgments based on criteria and standards.	
<b>Check</b>	<i>Participate in a writing group, giving peers feedback on organization and logic of arguments. Review a project plan to see if all the necessary steps are included.</i>
<b>Critique</b>	<i>Judge how well a project meets the criteria of a rubric. Choose the best method for solving a complex mathematical problem.</i>

Cognitive Processes	Examples
	<i>Judge the validity of arguments for and against astrology.</i>
Create – Putting elements together to form a coherent or functional whole or make an original product.	
<b>Generate</b>	<i>Propose a set of alternatives for reducing dependence on fossil fuels that address both economic and environmental concerns. Come up with alternative hypotheses based on criteria.</i>
<b>Plan</b>	<i>Make a storyboard for a multimedia presentation on insects. Design a scientific study to test the effect of different kinds of music on hens' egg production.</i>
<b>Produce</b>	<i>Write a journal from the point of view of mountaineer. Build a habitat for pigeons.</i>

### 2.3 ELE-SP UNJ Academic Presentation Course

Teacher assesses in order to make many decisions throughout the school day. The purpose of assessment is, of course, to measure students' abilities after gaining new skills and knowledge. It also provides opportunities for students to develop knowledge and skills. Rowntree in Ramsden (2003) defined assessment is about getting to know students and the quality of their learning (Ramsden, 2003, p. 176). As in RPKPS of Academic Presentation stated that in order to complete the course, students are supposed be able to demonstrate their competence in delivering academic presentation effectively.

*On completion of the course, students are able to:*

- 1) *Explain the importance of academic presentation*

- 2) *Differentiate an effective presentation from a poor one*
- 3) *Design an effective academic presentation*
- 4) *Design and use of proper visual aids*
- 5) *Speak confidently*
- 6) *Deliver an academic presentation fluently and accurately*
- 7) *Apply academic register*
- 8) *Respond to the questions appropriately*
- 9) *Use proper body language*

As stated on course assignments, the lecturer ask students to work and deliver a presentation individually and in group for assignment or exam. Airasian (2012) pointed that classroom assessment encompasses much more than giving tests and quizzes. Peer assessment often takes place in the context of group work. The teacher use kind of assessments in collaborative small groups. The reasons of group work is to measure performance after learning in group setting, to measure group productivity and effectiveness and to measure students' abilities to work collaboratively (Airasian, 2012, p. 7; 15).

Academic Presentation use formative and summative assessments. As Wiliam and Black on Falchikov stressed that feedback is a key component to formative assessment (Falchikov, 2013). In formative assessment, feedbacks are used as the results of assessment by teachers and students. It can be used by the

teacher to improve their teaching and by students to improve their learning. While summative assessment is at the end of each unit by presenting the four presentations. But in this study, the writer only focused on summative assessment.

The users of assessment are, of course, the lecturer and students in order to improve learning. University, policy maker, and administrator need the results of assessment in order to monitor the effectiveness of the assessment. Parents also need the results of their children to know their children's apparent achievement (Stiggins R. J., 1992, p. 36).

#### **2.4 Previous Related Study**

A number of studies on cognitive processes had been conducted in different methods by various researchers. Igbaria (2013) also conducted the study about cognitive process in the EFL textbook of *Horizons* for 9<sup>th</sup> grade students. The result showed that 244 questions emphasized lower level thinking skills, while only 137 questions emphasized high order thinking skills. *Horizons* textbook places emphases mainly on the lower thinking processes of knowledge, comprehension and application. The questions in the *Horizons* textbook place a great deal of emphasis upon comprehension, which is one of the lower order thinking. Igbaria recommends the questions in textbooks for English instruction that are intended for heterogeneous classes must be assessed carefully, and questions that encourage higher-thinking process among students (Igbaria, 2013).



Another study by Fitzpatrick *et al* (2015) analyzed the alignment of learning outcomes and assessment in Therapeutics course to foster higher order thinking. The study was aimed to determine whether national educational outcomes, course objectives, and classroom assessments for 2 therapeutics courses were aligned for curricular content and cognitive process, including higher-order thinking. By focusing on document analysis, he used Anderson and Krathwohl's taxonomy to define higher-order thinking and students group. The result showed that only 33.8% of the assessment tasks in pharmacy school required higher-order thinking and 66.3% of the assessment required lower-order thinking (FitzPatrick, 2015).

## **2.5 Theoretical Framework**

Based on the explanation above, this study is intended to investigate the level of thinking involved in assessment tasks given to students of Academic Presentation course. Assessment is an essential component of teaching for measurement and evaluation of student learning, motivating student learning and determining student learning process. Assessment relates to the cognitive process of students which required them to reach higher-order thinking in order to improve the quality of their graduates as the demand of career readiness.

To determine the assessment tasks, the writer used theory from Earl and Katz (2006) for assessment purposes (Assessment of Learning, Assessment for Learning, and Assessment as Learning). The theory of Arter *et al.* (2007) is used for assessment of its

techniques scoring criteria (Selected Response, Written Response, Performance Assessment, and Personal Communication). Meanwhile, Brown (2004) theory is used for assessment by methods (Formal and Informal) then mixed theories for assessment by time (Summative and Formative).

The writer was also intended to categorize the assessment practices based on the level of thinking in the revised Bloom's taxonomy by Anderson and Krathwohl (2001, p. 67-68). The level of cognitive processes used to figure out the assessment tasks used in Academic Presentation course are remember, understand, apply, analyze, evaluate, and create. Then, the cognitive process in taxonomy level is categorized into two levels; lower-order thinking (Remember, Understand, and Apply) and higher-order thinking (Analyze, Evaluate, and Create).

Types of Assessment				Cognitive Process	
(Brown, 2004)		(Earl and Katz, 2006)	(Stiggins, 2007)	(Anderson & Krathwohl, 2002)	
Method	Time	Purpose	Techniques	LOT	HOT
<ul style="list-style-type: none"> <li>• Formal</li> <li>• Informal</li> </ul>	<ul style="list-style-type: none"> <li>• Summative</li> <li>• Formative</li> </ul>	<ul style="list-style-type: none"> <li>• Assessment of Learning</li> <li>• Assessment for Learning</li> <li>• Assessment as Learning</li> </ul>	<ul style="list-style-type: none"> <li>• Selected Response</li> <li>• Written Response</li> <li>• Performance Assessment</li> <li>• Personal Communication</li> </ul>	<ul style="list-style-type: none"> <li>• Remember</li> <li>• Understand</li> <li>• Apply</li> </ul>	<ul style="list-style-type: none"> <li>• Analyze</li> <li>• Evaluate</li> <li>• Create</li> </ul>

Table 2.2 Theoretical Framework of the Study