

CHAPTER II

LITERATURE REVIEW

This chapter reviews scholars' point of views on instructions, thinking skills in the learning objectives and learning experiences, instructions to promote thinking skills, previous related studies, and conceptual framework of this study.

2.1 The Nature of Instructions

In the educational context, instructions are known to have two major meanings. They can be defined as the act of imparting knowledge or the “teaching” itself (Gredler, 2009; Parsons, 2008; Shulman, 1987); and it can also be referred as the teacher's means to give purposeful directions for student learning (Degraff & Housein, 2009; Huiit, 2003; Ur, 1991).

When the word *instruction* is broadly addressed as the general “teaching”, it will include a number of events starting from gaining students' attention, presenting materials and supplying learning directions, drawing out performances, until assessing the performance and giving informative feedback on it (Gredler, 2009, p. 165). Shulman (1987, p. 7) described this by defining instruction as the transformation of teacher's content knowledge into pedagogical representations and actions aimed to make those who do not know to become aware and transform the inept to be an adept. Supporting Shulman, Parsons (2008, p. 22) even extensively regarded “any time the teacher is teaching, the teacher is helping students, or the students are completing a task” as the instruction itself.

However, instructions that will be focused in the present study are not the “broad version” as such but instructions in the literal meaning which are “statement that describes how to do something” (Merriam-Webster dictionary, 2015). This will include the instances when teachers direct the students into the learning activities or tasks by explaining what they are expected to perform, what they are to do in the activity, what the procedures and strategies in completing the task are, and others which are all related with the instructional events designed to enable students to achieve the learning outcomes. Due the nature of such instances, instructions are most likely to consist of directions and orders. This is in line with Huiit (2003) who claimed that instructions in learning process are given to provide *purposeful directions* for the students. Ur (1991, p. 26) also emphasized the guiding nature of instructions as "the directions that are given to introduce a learning task which entails some measure of independent student activity". Even more strongly than simply directing, Degraff and Housen (2009, p. 726) further described instructions as well thought-out attempts to control over learning mechanisms and conditions to promote acquisition in learning. In summary, instructions in this sense of meaning are *directions* provided for students to enable them to get the most from the designed learning activities and tasks. Harmer (2008, p. 58) added that without instructions, students will not be facilitated to understand what they are supposed to do thus “they may well not get full advantage from an activity” regardless how promising and engaging it should be.

Instructions are significant in teaching and learning process because they can help teacher to engage students in three kinds of activities (Hyland, 2002, p. 217). They are textual act (instructing students to refer to texts– related to the learning materials), physical act (getting students into "a research process or real world action"), and cognitive act (guiding students to "understand a point in a particular way"). Instructions can also help students to realize what they are expected to perform and how to meet the expectation (Childs and Ryan, 2013, p. 1). The teacher's instructions are likely to be followed due to the asymmetrical role in classroom context which places teachers in a more powerful position with authority (Walsh, 2011, p. 3) and the nature of students that is having strong desire to please the teachers (Willes, cited in Holmes, 1983, p. 113), to avoid punishment, or to execute the learning tasks properly (Tapper, in Amalsaleh, 2010, p. 20). This capability of instruction is what leads to its frequent use by most of the teachers. Studies on teacher's talk showed that most utterances produced by instructors are those which function to guide and get students to do something (Merdana et al., 2013; Suparno, 2013; Majid Wajdi, n.d.). This is in line with Holmes (1993, p. 97) clarifying that "to regard a great many of teacher's utterances are directive in function". It is no wonder that instructions are even regarded as the single greatest factor that affects student achievement (Wipper, 2014, p. 1).

Several characteristics of instructions that students can tell apart from another teacher's talk have been discussed by a number of scholars. Besides from its functions that are directing and informing what to do, Walsh (2011, p. 111)

included instructions and directions as *enabling* mode of teacher's talk with some features like the use of transitional markers, confirmation checks, and an absence of learner contributions. In addition, Amalsaleh (2010, p. 21) summarized from the perspective of speech act theory that instructions are commonly given in the form of imperative, interrogative, and declarative through order, warning, request, and advice— depending on how much the teacher intends to “save the student face”. Scrivener (2012, p. 129) also mentioned some “recognizing elements of an instruction” including a frame (that signals the activity transition), a short overview of the task and its purpose, the organization (if any grouping is needed), the procedure (what they will be doing), the outcome (what result they are supposed to acquire) or the expectation, a strategy (given to be adopted as assistance in doing the task), the timing, and a cue.

In summary, instructions are statements purposefully given for the students to assist them in completing a task or carrying out a learning activity. Commonly students will recognize teacher's instructions from the reflected functions, included elements, or the used form of the utterances. After comprehending the instructions, the possibility for students to follow them is high since students are aware of the asymmetrical role with the teacher in the classroom and of their own needs to be assisted and directed in their learning. For this reason, instructions are important in teaching and learning process since the lack of its effectiveness could equally result in the failure of the task or activity being implemented as well.

2.2 Thinking Skills in the Learning Objectives and Learning Experience

Discussions on thinking skills or levels of thinking are found in the context of the learner-centered curriculum which has been started by John Dewey in the early twentieth century. Dewey viewed that reality is constantly changing, so education should placed heavy emphasis on how to think. In this case, students should practice the skills and tools necessary for democratic living such as problem-solving methods and scientific inquiry (Hunkins and Ornstein, 1998, p. 45-46). In this curriculum design, the teacher serves as a guide for the students in their problem solving and scientific project. In line with this view, Willis and Marsh defined curriculum as all the experiences learners have under the guidance of the school, curriculum is the sum of the meanings students experience as they engage in the activities of the school, including both the planned and unplanned experiences (2007, p. 11). In the learning processes, learning experiences and learning activities are intertwined. However, Hunkins and Ornstein (1998, p. 217) view that the two are not identical. Learning activities did not describe adequately the dynamic of teaching and learning situation, while learning experiences consists of teaching methods and learning activities that take place in the classroom for the purpose of attaining the objectives. In the learning experiences students are engaged in a concrete entity, students are invited to construct their

own meanings and to make their own sense of the program content, not just to receive the sense of others.

Teacher has an important role in the curriculum practice. Curriculum making or program development becomes the means of helping for teachers to connect their instructional activities with the program's contents and the students' needs and interests. The curriculum or the course program that has been developed by the teachers will be the guides or sources that the teacher use to plan their daily work. In this case the teachers combine three major curriculum or program components including content, teacher's instructions, and students' learning. For this reason scholars (Hunkins and Ornstein, 1998, p. 92) attempt to pinpoint the teachers that in the program development, they have to take care comprehensively in formulating objectives into grade levels and categorizing objectives to be related to each other. It is because the organization of learning outcomes, content, and assessments can be clearly structured within the objectives.

In this sense, therefore, learning experiences as promised in the planned objectives should stimulate students to develop intellectual capabilities or thinking skills as it is the key process of educating the students.

In developing the objectives that induce the thinking skills which simultaneously promotes the teaching of thinking, teachers need framework to help them "developing common knowledge base and a common language for teaching thinking". Nagappan (2001, p. 35) claimed that the most commonly used

framework is Bloom's Taxonomy that was created in 1956. In Bloom's Taxonomy, there are six levels including knowledge, comprehension, application, analysis, synthesis, and evaluation. The structure of original Bloom's taxonomy was "cumulative hierarchy: hierarchy because the classes of objectives were arranged in order of increasing complexity, and cumulative because each class of behaviors was presumed to include all the behaviors of the less complex classes" (Krieterin Amer, 2006, p. 215). The taxonomy that can help teachers inducing thinking process in their planned objectives, activities, and instructions can be shown in the following table.

Categories	Cognitive Process	Key verbs
Remember	taking from long-term memory the relevant knowledge needed	recognize; recall; identify; retrieve
Understand	establishing comprehension over information obtained either it is in the form of oral, written, and graphic.	interpret (clarify, paraphrase, represent, translate); exemplify (illustrate, instantiate); classify (categorize, subsume); summarize (abstract, generalize); conclude (conclude, extrapolate, interpolate, predict); compare (contrast, map, match); explain (construct models)
Apply	making use a learned procedure in particular situation that has been set	execute (carry out); implement (use)
Analyze	splitting up a construction into its parts and deciding "how the parts relate to one another and to an overall structure or purpose"	differentiate (discriminate, distinguish, focus, select); organize (find coherence, integrate, outline, parse, structure); attribute (deconstruct)
Evaluate	judging and making assessment by referring to relevant criteria and standards	check (coordinate, detect, monitor, test); critique (judge)
Create	forming "a coherent or functional whole" by assembling the learned isolated parts or elements;	generate (hypothesize); plan (design); produce (construct)

Table. 2.2. Cognitive Domain on Revised Bloom's Taxonomy by Anderson & Krathwohl, 2001

This taxonomy only has one dimension which is the cognitive process domain; and that the categories in the taxonomy are not presumed to overlap. It was formerly assumed that mastery of each simpler category was prerequisite to mastery of the next more complex ones (Krathwohl, 2002, p. 213). Whereas, "certain demands for knowledge are more complex than certain demands for analysis or evaluation, evaluation is not more complex than synthesis, and synthesis does involve evaluation" which in fact can cause overlap over each category. Therefore, many efforts were put to modify Bloom's taxonomy. Among other modifications, Anderson and Krathwohl's (2001) revision of the original Bloom's taxonomy is one that is widely recognized as it "redefines the cognitive domain as the intersection of the cognitive process dimension and the knowledge dimension" and it also reforms the cumulative nature of the taxonomy by allowing the categories to overlap "on a scale of judged complexity" (Anderson et al., 2001, p. 309).

2.3 Cognitive Development

Cognitive development means the rise in ability to "think and understand" (Schacter, 2009, p. 429). It is represented when one is able to process information in a more complex thinking process, as what has been developed by Bloom that cognitive domain lies in hierarchical manner. In the context of adulthood, cognitive development is reflected from capability to extract abstract principles and rules that underlie a reality (Schacter. 2009, p. 430). Instead of merely

accepting something as what it is, adults with developed cognitive are able to process the coming information in higher levels of processing to bring about transfer across situations.

In the context of childhood, cognitive development is signaled through the shift from children's dependency on actions and perceptions to a sense of awareness and understanding of the more noticeable aspects of reality.

“One of the essential aspects of development is the increasing ability of children to control and direct their own behavior, a mastery made possible by the development of new psychological forms and functions and by the use of signs and tools in this process. At a later age children extend the boundaries of their understanding by integrating socially elaborated symbols (such as social values and beliefs, the cumulative knowledge of their structure, and the scientifically expanded concepts of reality) into their own consciousness” (Vygotsky, 1978, p. 126).

Both cognitive development for adults and children can be achieved with the help or guidance from older people, collaboration with more capable peers, and other “contextual supports”. Especially for adults case in which their cognitive abilities are at multiple and varying levels; contextual support, prior experience, and joint action with other people are especially needed for it can influence the dynamics of how adults' multilevel performance can possibly vary (Fischer et al., 2003, p. 6). By multilevel cognitive performance it means that adults do have the capabilities to perform more flexible, dynamic, and contextual thinking than children do but at the same time they also tend to make even the most nonsensical mistakes and errors like the children. Research showed that “even very wise adults use simple skills when the situation requires simple action, and from time to time they may make unwise decisions when dealing with complex tasks without sufficient contextual support to them” (ibid.). Therefore,

every support needed are to be provided because more highly developed thinking skills are ensued due to support, while the lack of it does lead to low level of cognitive skills disadvantageous for individual performance. This also emphasizes the point that achieving cognitive development does not stop in childhood period only but also continues in adulthood to be enable them processing and retrieving information in more effective manner either during learning or on daily basis performance.

2.4 Instructions to Promote Thinking Skills

It has been discussed that enhancing students' thinking is needed in teaching and learning process. However, having students to memorize Bloom's taxonomy is insufficient because "if the nation's children are to learn how to think clearly and cogently, they must be provided with appropriate instruction" (Ivie, 1998, p. 35).

Teacher's instructions can promote students' thinking through generally two major ways. They are by: (1) setting up and maintaining the cognitive demand of a task or an activity (Meyer, 2003; Doyle, 1983); and (2) providing direction and guidance for students in doing such cognitively demanding learning task or activity (Huit, 2003; Ur, 1991; Vygotsky, 1978).

Studies show that instructions can either maintain or reduce the cognitive demand of a learning task or an activity. According to Henningsten and Stein

(1997, p. 528), tasks can be divided into three levels of existence including the task planned in curriculum or stated in a textbook, the task presented by teacher along with its instructions to support students' understanding of the task, and the task that is actually performed by students in the classroom. Doyle (in Benko, 2012, p. 8) claimed that tasks may begin with high level of cognitive demand but then is reduced due to the teacher's instructions – whether or not it is intentional. A study from Meyer (2003) revealed that even though a potential learning activity such as engaging students in online discussion could facilitate them into using their higher level of thinking better, it may not function as desired without effective instructions from the teacher. He then suggested that “faculty may need more directives in their assignments for threaded discussions, charging the participants to resolve a particular problem, and pressing the group to integrate their ideas or prepare a resolution of the matters under discussion” (p. 64). This proves the capability of instructions in encouraging students' thinking through cognitive demand maintenance or extension of an activity or task.

Instructions can also provide learning guidance in doing above processes by supplying specific situations along with necessary hints and prompts under condition that “the communications to the learner should stimulate a particular direction of thought and therefore prevent the learning from getting off the track” (Gagne & Briggs in Gredler, 2009, p. 166). The guidance is especially needed because “tasks which require students to construct rather than reproduce answers are high in both ambiguity and risk because the precise answer cannot be fully specified in advance and (the) constructive process can sometimes be unreliable”

(Doyle and Carter, 1984, p. 131). This emphasizes that teacher's responsibility goes beyond selecting the activities and tasks that students will work on to preparing assistance for students in completing the work (Benko, 2012, p. 17). The importance of learning guidance provided in the instructions as such is underpinned by ZPD theory of Vygotsky stating that meaningful interactions, collaborations with, or guidance provided by more capable people can facilitate learners to acquire new knowledge and reach the maximum of their potential development (Blake & Pope, 2008, p. 60). However, Ohta (2010, p. 166) claimed that providing assistance that is more than needed and instructions that has little challenge and stays within students' comfort zone will hardly lead to development. Therefore, the guidance in the instructions should be necessarily provided and gradually decreased according to the individual needs of the students themselves.

2.5 Previous Related Studies

Quite many are interested in revealing the way in which teacher's talk can engage students in a more complex cognitive process. Rosaningpekerti (2013), Alam (2012), and Jannati (2013) each concerns with classifying the teacher's questions, feedback, and instructions according to the revised Bloom's taxonomy (2001) respectively. In the first study, Rosaningpekerti conducted a case study in Critical Reading class to compare and discuss the level of questioning four lecturers use related to the stimulated cognitive level to reach students' critical thinking. It is found that "the quality of teachers' questions in critical reading subject in English Department is still on the low order thinking". It can be proved

by the findings in which the highest number of activated cognitive domain through is in the area of remember (C1: 1200, C2: 175, C3: 169, C4: 155, C5: 5, and C6: 229). Almost similar finding are also resulted from a study in the field of feedback conducted by Alam (2012) entitled Framing Teacher's Feedbacks in Bloom's Revised Taxonomy. By doing content analysis on classroom interaction transcriptions, it is found that 71% of teacher's feedbacks are on remembering level. The last study which has the closest relation to the present study was carried out by Arum Sekar Jannati (2013) entitled Teacher's Instructions to Enhance Students' High Order Thinking in English Classroom. By doing discourse analysis on teacher's utterances, it is found that only 21 from 111 instructions lead students to cognitive process and only 8 from those 21 are able to support students to do higher order of thinking. It means that only 8 from 111 teacher's instructions did lead to students' higher cognitive processes.

Unfortunately, none of the studies above provide evidences if students experience cognitive development as indicated by the rise in their performance quality. Most studies just focused on analyzing and categorizing the unit of analysis to find out the type and frequency; without analyzing students' responses to the teacher's stimulations. In line with those situations, studies on instructions that focus more on describing *what* the instructions are and what influence they have on students' performances were therefore be worth to be conducted. Providing information on those points will be more beneficial as it can reveal the relationship between stimulation from teacher to students' gains in learning. This

is to follow what has been generally established that enhanced thinking equals more meaningful and effective learning (Perkins, 1992, p. 8).

2.6 Conceptual Framework

The instructions coding in this study is based on two basic functions of instructions by Childs and Ryan (2013, p. 1) and a number of characteristics of instructions mentioned by Scrivener (2012), Walsh (2011), and Amalsaleh (2010). Instructions that signify the thinking level demanded in a learning activity or task will inform the overview of the task (ov) and the outcome or the result expected from the said activity or task (out). Instructions that help clarifying what it is that students are supposed to do in completing the task will consist of the procedure (pro), the strategies (strag), and also some directions (dir) that can be either in the form of direct orders and prohibitions or indirectly through advices and suggestions. The use of confirmation checks (cc) to ensure that students get what is expected from them is also said to be the inseparable element of instructions.

The coded instructions will then be described to portray the way in which the students are guided and assisted in their learning. Furthermore, they will also be categorized based on the revised Bloom's taxonomy (Anderson & Krathwohl, 2001) to see the cognitive levels activated by the instructions and whether or not the instructions maintain the cognitive demand of the activity or task as stated in the study guide or Semester Planning of Teaching and Learning Activities. It is because according to Doyle (1983), lecturer's instructions can either retain or reduce the cognitive demand of a task whether intentionally or not. Sample of students' performances and written works will also be analyzed by using the same

framework (revised Bloom's taxonomy) to get the evidence if students' thinking abilities are indeed promoted along with the given instructions. This is based on Vygotsky's view that "instructions can precede and lead to cognitive development".