

Problematic Implementation of High Order Thinking and Innovative Instructional Design in Teaching Language: A Study from Inservice Training for English Teachers

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Abstract

The in-service training delivered in Pendidikan Profesi Guru (PPG) aims at increasing teacher's knowledge and skills in teaching English. Language Teaching is dependent on philosophical assumption on the nature of language and language learning. Language teaching is terminated at using language skillfully in various communicative events. The in-service training is based on a general theory that is implemented through the application of high order thinking (HOT), the innovative instructional design, namely: Problem Based Learning (PBL), and Project Based Learning (PjBL). This study intended to find out the application of HOT, PBL and PjBL. The data of this study were taken from lesson plans (RPP) and its implementation in classroom interaction. The data were analyzed by using the related theory as temporary category of identification, classification and interpretation. The results show that (1) the teachers are constrained by the use of operational verbs of HOT in formulating its indicators in KD 3 (knowledge competence), and in KD4 (skills) which resulted in the improper way of teaching English, (2) the teachers are compelled by the syntax of PBL and PjBL into improper steps of teaching English, (3) the teachers unconsciously made technology as media as the objective rather than as facilitation to language learning and consequently it turned the teaching of English into teaching about language, like teaching content knowledge such as Biology, Physics, etc, rather than enabling the students to use English communicatively. These findings lead to the conclusion that the teaching of English should be mainly

based on the theory of language and the theory of language learning. Other theories imported from other disciplines or from educational psychology should be adapted to the theory of language and language learning.

Key Words: *Media, Competence, High order thinking, Innovative instruction.*

Introduction

In-service training for English teachers is intended to better their ability to implement theories related to the nature of language and how to teach language they learn during the in-service training. Enabling the students to use English as a means of communication is the ultimate goal of teaching English. To improve the teachers' teaching performance, the English teachers should master linguistics and pedagogical theories and how they are realized in real classroom interaction. In facts, the in-service training is provided for all teachers of all disciplines; not specifically designed for English teachers. Consequently, the in-service training is adapted to accommodate the general needs of all teachers. A theory of learning is adopted from general theory of learning such that adopted by the Problem Based Learning (PBL) and Project Based Learning (PjBL), while the learning objectives formulation is based on the revised taxonomy Bloom. The teaching is emphasized on developing the students to be critical, and therefore the formulation of learning objective is limited to higher order thinking as represented by the last three levels in taxonomy Bloom. Instructional design is organized based the context of 21st century, in which the critical thinking, creativity, communication and collaboration skills are badly required (Kraus, 2013). When the theoretical assumption of the in-service training is compared to that in approaches of English language teaching proposed by Richards (2014), three main differences are obviously seen: difference in the nature of learning, absence of the nature of the discipline to be taught in the in-service training, and the ultimate purpose of teaching. These differences are predicted to cause problematic implementation of teaching English.

High Order Thinking

High order thinking (HOT) is a phrase in which *thinking* is the head of the phrase. This means that the phrase is about *thinking*; it is about action of *thinking*. It is not merely about operational words, like those used in taxonomy bloom. In the taxonomy, the thinking is divided into low and high order thinking. Categories of *remember* or *recall*, *comprehension* and *application* are classified as *low order thinking* (LOT). While the others, namely *analysis*, *synthesis*, and *evaluation* are considered as *high order thinking* (HOT). The operational words considered as the indicators of each category of the taxonomy may not always tell whether a task represents a LOT or HOT. In Mathematics, for example, the operational word of *apply* (*menerapkan*), cannot automatically be taken as the indicator of LOT or HOT. It does not always depend on the use of the word *apply* itself but it may depend on the task for which a principle to apply. As an illustration, see Box 1.

Box 1: Classification of LOT or HOT Based Operational Verbs Used

<p>Rumusan Indikator A Siswa mampu <u>menerapkan</u> prinsip perbandingan pada soal cerita</p> <p>Soal cerita: Si Ali dapat mencangkol sebidang sawah sebanyak sepertiga bagian dalam satu hari</p> <p>Pertanyaan: Berapa lama si Ali dapat menyelesaikan pekerjaan tersebut?</p>	<p>Rumusan Indikator B Siswa mampu <u>menerapkan</u> prinsip perbandingan pada soal cerita</p> <p>Soal cerita: Si Ali dapat mencangkol sebidang sawah sebanyak sepertiga bagian dalam satu hari Sedangkan si Badu dapat menyelesaikannya seperempat dalam satu hari.</p> <p>Pertanyaan: Berapa lama sawah tersebut dapat diselesaikan jika si Ali dan si Badu Bersama-sama mengerjakannya?</p>
<p>Indicator Formulation A The students are able to <u>apply</u> proportional principle to solve a problem</p> <p>Task: Ali can plough a paddy field as much as one third of it in one day</p> <p>Problem: How long will Ali finish the ploughing the field?</p>	<p>Indicator Formulation B The students are able to <u>apply</u> proportional principle to solve a problem</p> <p>Task: Ali can plough a paddy field as much as one third of it in one day, while Badu one fourth</p> <p>Problem: How long will they finish the ploughing the field?</p>

The use of operational verbs *applied* in the A and B indicator formulation does not automatically tell that the tasks belong to LOT or HOT. The nature of the task, whether it requires thinking of high or low cognitive activities also determines the operational word as LOT or HOT. The level of LOT or HOT can not be decided just by looking at the operational verbs used.

Accurate judgement of teaching activity as LOT or HOT depends on not only the operational verbs used but also on the comprehensive understanding of the nature of HOT itself. According to Brookhart (2010) high order thinking is a cognitive ability to apply interrelated skills to solve a problem that one or a student has never heard of or has never been taught of before to achieve a desired solution or outcome. To decide what outcome or what solution is desired and how to achieve the solution or outcomes requires the interrelated skills which build the high order thinking. High order thinking involves the engagement of cognitive skills classified as **transfer**, **critical thinking** and **problem solving**. **Retention**, that is the ability to remember what is learned and the ability **to use his knowledge (what he remember)** in a new situation, which is not necessarily for the purpose of solving the problem, are two components that comprise *transfer*. *Critical thinking* is a cognitive process of **making sound decision of what to do or what to believe**. What *to do* means what action to perform and how to perform it while what *to believe* means what is good or bad; what is right or wrong. The decision of *what to believe* leads to the decision of **what goal or what outcome is desired**, while the decision of *what to do* leads to the decision of **what ways to apply to achieve the desired goal or outcome**. The critical thinking comprises thinking happening during **reasoning, reflecting, observing, describing, comparing, connecting**, etc. The ultimate goal of this thinking is to decide what to believe, what goal or outcome to achieve, what action and what ways to perform to achieve the desired goal or outcome. *Problem solving* is a cognitive process of finding what to perform and how to perform in order to achieve the desired goal or outcome. What cognitive action and how to perform the action are not yet known or have not been learned before. This implicitly states that **a problem is said to**

be a problem if the ways how to achieve the desired goal/outcome are not known or have not been learned before. Problems can be of two types depending on kinds of answers or solutions required, they are **closed and open ended problems**. Closed problem requires limited correct answer/solution while open ended problems can be answered with many correct answers/solutions or many ways of reaching correct answer/solution. Based on the source of the problem, it can also be divided into two types, namely problem **set by others and problem identified by oneself**. In school, problems are set by teachers while in life, problems are identified by oneself.

Innovative Instructional Design

Innovative instructional design refers to planning the teaching of a language starting from deciding the learning objective, organizing the instructional materials to achieve the objectives, deciding the teaching method by which the instructional materials implemented in real classroom interaction to achieve the predetermined objectives and deciding the assessment technique to measure to which extent the learning objectives have been achieved. Instructional design mainly consists of four aspects: (1) objective formulation, (2) material development, (3) teaching (4) implementation, and learning achievement evaluation. Teaching implementation deals with teaching approach, method or technique of how the materials are presented in order that the learning objectives are achieved effectively and efficiently. The four aspects are organized coherently, meaningfully, and strategically based certain theoretical assumptions. Instructional design develops dynamically to respond change of understanding or assumption on the situation. In the 21st century, it is believed that to be survival or competitive a student students should have skills dealing with critical thinking, creativity, communication and collaboration. These are known as 4C skills. The 4C skills are taken to be the base for designing the four aspects: (1) objective formulation, (2) material development, (3) teaching (4) implementation, and learning achievement evaluation. In designing the implementation, for example, two teaching methods or approaches, namely Problem

Based Learning (PBL) and Project Based Learning (PjBL) are recommended to enable the students to develop the 4C skills.

Problem Based Learning

Problem based learning (PBL) is not a method, it is an approach (Baden, 2004). Approach is defined as philosophical assumption of what a subject to be taught is and how the subject is learned (Richard, 2014). In language teaching method, the philosophical assumption deals with two aspects, they are (1) the nature of language and (2) the nature of learning a language. The first aspect deals with the question of what language is while the second deals with how learning a language happens. Approach is translated into method which is defined as over all plan of teaching while method is realized in teaching technique. When you observe a classroom interaction, what you can see and listen is the real action or observable actions of a teacher and students. These observable actions of both a teacher and the students in real classroom interaction is called teaching technique. Approach and a method are realized in teaching technique (Richard, 2014). In PBL learning is believed to occur through the using of and managing the reasoning skills and ability to solve a complex problem (Baden, 2004). This is the nature of how learning happens, while what the nature of a subject matter to learned is not specified. PBL is originated in Medical Schools (Baden, 2004). This approach is imported to the teaching of other subjects, including the teaching of English. The problem is that this approach does not specify the nature of language and the nature of learning a language. In English language teaching, the only aspect of PBL that can be adopted is the use of *problem* in learning English. The nature of *problem* in PBL is not explained in details and none is specific either. Problem does not relate to what a problem is but to what we want the students to learn. Problem is also identified by the ways the students are expected to solve the problem. One way or limited ways are expected to be *answered closed problems*, while unlimited ways are required to answer the *open-ended problem*. PBL, therefore, believes that learning can happen only when reasoning skills or reasoning ability is employed to solve a problem ether with limited or unlimited ways. Comparing to

the meaning of approach in language learning, the one in PBL does not match exactly. More differences are found when the comparisons between the nature of learning in language learning and PBL is made.

Project Based Learning

Project based learning (PjBL) is also an approach-not a teaching method (Krause, 2013). It is a belief on how learning takes place. The concept of *approach* in PjBL is different from that proposed by Richards (2014) in language teaching. In Richards' concept (2014), *approach* consists of two sides: the belief on what language is and the belief on how language learning a language takes place. While in PjBL, (Kraus, 2013) the belief is only on how learning of knowledge is happening. In PjBL, learning is believed to happen through getting the students engaged in real life experiences. These experiences make the students develop curiosity in themselves and raise a lot of inquiries. This learning experience is more memorable than that resulted from the traditional approaches. *Curiosity* is considered as the engine of learning and it can only be developed through real life experiences. In PjBL, project is believed to be effective in getting the students to involve in real life and authentic experiences. Through the project, inquiry as the engine of learning can be developed. In PjBL, the *project* is perceived as an activity conducted in real life with authentic matters. The activity in *project* is about doing investigation or research that is designed by the students based on the inquires they themselves raised, that is resulted from the curiosity they have towards the real life problem they identify themselves. Real life problem is known as *open-ended problem*, of which answers are unlimited. Project is also perceived as producing a product to respond to or to solve the open-ended problems (Kraus, 2013).

When compared to the concept of approach in English language teaching as proposed by Richards (2014), what can be adopted from the PjBL is the belief that the *curiosity* and *inquiries* are keys which makes learning a language happen. The concept of *project*, *product* and *real life* or *open ended problems* in PjBL are difficult to be adopted

in language teaching. According Richards (2014), the belief about how learning happens is not enough. The nature of what to be learned is also required because how to learn a language is partly affected by what is believed to be the nature of the language itself. Audio lingual method (ALM) in language teaching, for example, was developed based on the nature of language and the nature of language learning which are different from those on which communicative language teaching (CLT) was developed. The ALM believes that language is a system of system while CLT believes that language is a means of communication. Learning a language is believed to happen through repetition, imitation, stimulus and response. This belief is stemmed from the theory of first language acquisition of behaviorism perspective. In contrast, CLT believes that language is a means of communication and a child acquire a language through a cognitive process therefore CLT believes that learning a language as a means of communication happen not through the process of imitation, stimulus and response but through cognitive engagement.

Method

The Subjects of the Study

The subjects of this study were 15 English teachers who participated in in-service training program of the academic year of 2022. They came from different regions of North Sumatera Provinces and they taught junior and senior high school students.

Instruments

Instrument refers to way of getting the data. In this study, data are the English teachers' performance in planning the teaching of English in their lessons plans and the implementation of the plan in classroom interaction. Four components of the performance were included: learning objective formulation, instructional materials, teaching methods used in the implementation of the plan, and assessment of learning achievement. Documentary was conducted to collect the teachers' lesson plans and observations were done to record the implementation of the plan.

Data Analysis and Procedures

The data analysis used in this study includes identification, classification, display of data and interpretation of the analysis. The data were analyzed based on the theory of English language teaching and learning theory adopted in the in-service training. The differences between the two theories was taken as the base of drawing inferences for the causes of the problematic implementation of teaching English. The data from the lessons plans were obtained before the data of teachers' performances in the classroom interaction were collected.

Findings

Learning objective formulation

Learning objectives in the in-service training were labelled as both *Kompetensi Dasar 3* (KD3) which includes competence of linguistics knowledge and *Kompetensi Dasar 4* (KD4) which includes competence of putting the knowledges (the KD3) into practice which is realized in the four language skills. In the in-service training, the teachers must formulate the learning objectives at the last three levels of taxonomy Bloom. These levels were considered as high order thinking (HOT) in the in-service training. In formulating the learning objectives, the teachers are constrained by the use of operational verbs of HOT. The KD 3 (knowledge competence), and KD4 (skills) were formulated just to obey the in-service training without paying any attention to the approaches of English language teaching which resulted in the improper way of teaching English.

Materials Development

The in-service training assumes that learning begins by mastering the rules, principles, theories, etc. before being able to put them into practice. The rote of learning is from knowledge mastery to knowledge practice. This is the reasons why the KD3 (knowledge mastery) comes before performances or skills (KD4). No skills (KD4) can be performed if

the knowledge (KD30 has not yet been mastered. The teaching of English is based on genre of transactional and interactional text. In developing the instructional materials, knowledge of the genre, like generic structures, social functions, and linguistic features dominates the materials. The materials on the knowledge of text structure, social functions and linguistic features (KD3) outnumbered the materials on language skills (KD4). Text of a genre, like descriptive text, is exemplified. Parts of linguistic features are listed in terms of content and function words as well as tenses or sentence structures used in certain genres.

Implementation of the Plan

The instructional materials developed to achieve the predetermined learning objectives are taught to the students in classroom interaction by applying either PBL or PjBl. The approach chosen to implement the plan is tacitly stated in the lesson plans. When the PBL is chosen its implementation is not in accordance with the proper way of using the approach. The implementation of the PjBl is not in line with the proper way either. They are just stated in the lesson plan. What the teachers do in classroom interaction is just informing the students that a text has a generic structure and social function as well as linguistic features. The students were assigned to read the text provided in lesson plan and asked them to identify its social function, to tell its text structure and linguistic features, as in excerpt 1.

1. T. : Today we are going to study descriptive text. Here is an example of a descriptive text. Would you please read this text
LL : [read the text]
T. : Ok, now can you tell me the generic structure of this text?
LL : Classification.., appearances.., attributes..
T. : mm.. what about the social function? What is the social function of this text?
LL : to describe
T. : Good. Now what are the linguistic features of this text?
LL : simple present tense, adjectives, nouns, conjunctions....
T. : Ok, what about its social function? Do you know social function? What is the social function of this text?

In excerpt 1, the task given to students did not reflect any concept of *problem* as suggested by the PBL nor the concept of *project* as required in PjBL. No aspect of skills in using the genre in terms of comprehending descriptive text nor in terms of producing descriptive text. It simply enabled the students to memorize text structure, social function, and linguistic features of descriptive text. In excerpt 1, the students were able to mention the text structure, social function, and linguistic features may not be the results of being able to identify them but it might be resulted from their memory on what the teachers told them prior to this activity.

Assessment of Learning Achievement

To assess the extent to which the students have achieved the learning objectives both KD3 and KD4, the teachers administered essay tests asking for the text structure, social function and linguistic features of a text. The questions were aimed at measuring the students' knowledge of a text genre. Very few of the questions were devoted to the identification of linguistic feature used in a text. Some questions asked about comprehension of a text. In assessing the students' achievement on descriptive text, for example, the test items measure students' comprehension by asking the appearances, location, and size of an object described in the text. The way how the questions are developed is exactly the same as those used in reading comprehension.

Discussion

The implementation of high order thinking (HOT) and innovative design which is characterized with the use of PBL and PjBL in teaching English by the in-service training participants become problematic may be caused by different theoretical assumptions on learning adopted by the in-service training program and that by the English language teaching proposed by Richard (2014). The concept of *problem* and *project* in PBL and PjBL and how to develop them which are not very clearly defined might be the cause of difficulties for to the English teachers to translate *problem* and *project* as suggested in PBL and PjBL into the teaching of English (Kraus, 2014). Sufficient understanding of the

nature of what to teach, as claimed by Richard (2014), also affect how to teach, which is missing in PBL and PjBL is another reason why encounters problem in the implementation of PBL and PjBL in English language teaching. Norland (2006) stated that approaches in teaching English in EFL or ESL context can be divided into four types, they are: (1) habit formation approach, (2) communicative approach, (3) academic and professional approach, and (4) language arts approach. All of these approaches consider the nature of language and language learning and aims at enabling the students to use English as means of communication in various genres. These approaches are very different that adopted in innovative design characterized with HOT, PBL, and PjBL. Critical thinking, creativity, communication in terms of linguistic literacy and ICT literacy, and collaboration (Kraus, 2014). English language teaching may not be expected to contribute to the all of the 4C's skills as much as other discipline, like Mathematics, Physics, etc. contribute to these skills. What types of critical thinking and creativity and to what extent the teaching of English can contribute to the development of the 4C's skills should be identified and measured. Such identification and measurement may help the English teachers avoid problems in the implementation of the innovative design. Gate (2007) found out that any degree of explicitness in teaching of text structure of a text does not contribute to the students' skills in comprehending and writing a text of any genre types. Authentic experience of comprehending and writing text of any types of genres significantly contributed to the students' ability to comprehend and write text of different genre. This finding is supported by the approaches adopted in English language teaching proposed by Richards (2014) and Norland (2006) but not in line with the results of this study. This might be caused by the fact that the English teacher must adopt the theories proposed in the innovative design. It is additional burden for them because the two theoretical assumptions are different. Gibey (2012) found out that immersions of memoir texts to elementary students significantly affect the students' ability to write memoir. Immersion of memoir text to students means that the students are exposed naturally to the texts themselves without having prior knowledge of what a memoir text is, of what its

text structure, and of linguistics features usually used in memoir texts. Unlike the assumption hold by the innovative design, KD3 is a must before KD4. The difference in theoretical assumptions between approaches adopted in language teaching and those in innovative design makes the English teacher confused and cause them to perform English teaching improperly and make biased achievement in language learning. To conclude, adapting theoretical assumptions hold by approaches true to other subjects and developed for certain purposes which may be different from the purpose of language teaching may cause the language teaching to fail to achieve its purpose and also fail to achieve the goal of the adopted approach. It is suggested that the adoption of a learning approach of other disciplines should be modified to be in harmony to the language teaching approaches.

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