Abstract: The Ministry of Education and Culture recommends that the scientific method be applied in the teaching and learning process of all subjects, including English language, in the implementation of Curriculum 2013. Language learning takes place through the steps of observing texts, formulating questions, collecting data, analyzing data (and drawing conclusions), communicating findings, and creating texts. It is believed that such steps effectively facilitate students to attain knowledge about language, communication skills, and attitudes. Currently teachers have different views regarding the typical language learning activities, learning objectives of each of the steps, the roles of the teachers, and the classroom steps. This paper briefly proposes the learning activities and objectives of each step, the teacher’s roles, and the steps of a scientific-method-based language classroom.

Keywords: scientific method, classroom steps, language learning activities

Introduction
Based on the Basic Competences in the Minister of Education and Culture Regulation No. 68, 69, and 70/2013, English language teaching in Junior, Senior, and Vocational High Schools aim to develop the student’s ability to communicate in the target language orally and in writing accurately and appropriately in the four language skills in a variety of contexts for varied purposes using a range of text types and language functions. To support the ability to communicate, the English language teaching also aims to equip the students with adequate knowledge about texts, particularly social function, text structure, grammar, and vocabulary. In addition, English Curriculum 2013 intends to help students develop acceptable behaviour in personal, social, academic, and professional contexts.

To attain the above-mentioned aims, the ministry recommends that the scientific method to teaching and learning be applied (Minister of Education and Culture Regulation No. 65/2013).

My meetings with English language teachers from different parts of Indonesia in workshops on Curriculum 2013 and some articles on language classroom with the scientific method (for example Suharyadi, 2013; Direktorat Pembinaan SMP, 2013) suggest that teachers have different views regarding the typical language learning activities, learning objectives of each of the steps, the teacher roles in the learning process, and the classroom steps. For that reason, this paper proposes the learning activities and objectives of each step, the roles of the teacher in every step, and the steps of a scientific-method-based language classroom.

Language Classroom with the Scientific Method
1. The learning activities and objectives of each step
As stated above, the learning process applies the scientific method. Learning takes place through the steps of observing, questioning, experimenting, associating, and communicating. In the language learning process, another step is added, namely creating. Referring to Direktorat Pembinaan SMP (2013) and Priyana (2014), the learning activities and objectives of every step are as follows.

a. Observing (texts)
   In the language learning process, observing means reading and/or listening to texts. The students read and/or listen to texts in order to list items they need to know in order to comprehend and/or produce texts or communicate ideas. At the end of this step the students have a list of items they want to know that generally include the social function of the text, text structure, grammar, and vocabulary.

b. Questioning (asking questions)
   Having identified items they need to know in order to be able to comprehend and/or create texts, the students ask or formulate questions based on the identified items. The questions at least cover all the achievement indicators stated in the lesson plan. In this step of learning, students are encouraged to propose temporary answers based on their knowledge and/or limited information they have. Thus, the output of this step is a list of questions and preferably also a list of temporary answers.

c. Experimenting (collecting data/information)
   The next step is collecting data/information to answer their formulated questions. Students collect data/information relevant to the questions using one or more techniques such as observation (e.g.

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watching videos), interviewing resource persons, and reading books. By the end of this step the students will have enough data/information to answer their questions.

d. Associating (analyzing data/information)
In this step students analyze data/information to answer their questions and draw conclusions. With or without teacher’s support students sort out, classify, and identify patterns to answer their questions. At this step the students produce answers to their questions.

e. Communicating (answers/conclusions)
After answering questions (drawing conclusions) based on the (analysis of) data they gather, students communicate their answers or conclusions to the class in writing and/or orally. Their answers (conclusions) represent the knowledge they ‘construct’ or learn. At the end of this step the students are expected to have learned the necessary knowledge (especially about the social function of the text, structure of the text, grammar, and vocabulary) in order to comprehend and create texts.

f. Creating (texts)
Learning language does not end when the students already learn the features of the targeted text. Their knowledge about the text should be used to comprehend and create texts. Learners must be given a lot of opportunity to communicate thoughts using the newly-learned knowledge. The messages they obtain from texts and the texts they create can be further communicated to others orally and/or in writing.

2. The teacher’s roles in the classroom with the scientific method

   English Curriculum 2013 intends to make the students learn. They are expected to do the learning. However, it does not mean that the teacher has no roles in the language classroom. An English teacher needs to provide the students with some support in every learning step. The less experienced the students are with the scientific method classroom, the more support they need. Some of the roles of an English teacher are listed below.

   a. Observing (texts)
The teacher assists students to list items to know in order to comprehend and create the targeted texts. The teacher may provide a list of items from which the students can select some. The teacher may also make some items in the input (model of language) salient.

   b. Questioning (asking questions)
The teacher helps students to ask or formulate questions with reference to the items they want to know in order to comprehend and create texts. As asking or formulating questions is not an easy task (particularly for beginners), the teacher may need to come to the classroom with a number of questions the students can start with.

   c. Experimenting (collecting data/information)
Collecting relevant data/information to answer questions is demanding for inexperienced students. For that reason, teachers are required to provide the students with worksheets and learning resources.

   d. Associating (analyzing data/information)
In this step, the teacher helps the students see patterns to answer questions and help draw conclusions.

   e. Communicating (answers/conclusions)
The teacher provides feedback in this step. The answers or conclusions the students report to the class may be wrong or inadequate. It is time for the teacher to correct and/or enrich the knowledge that the students ‘construct’.

   f. Creating (texts)
It is time for the students to use the newly-learned knowledge to comprehend and create texts. This opportunity is for them to convert their declarative knowledge into procedural knowledge (Kumaravadivelu, 2006). The role of the teacher is to design guided, semi-guided and free language production tasks. In addition, the teacher provides the students with strategy, idea, and language support.

3. The language classroom steps with the scientific method

   In the actual teaching-learning process, students commonly ask a number of questions. To answer all the questions, they need to collect and analyze data. To collect and analyze data to answer all the questions at once is usually not feasible.
1. Observing texts and 
2. Questioning (asking questions) 

(With the teacher’s support) students read and/or listen to text to list items they need to know in order to comprehend and create texts and formulate questions. 

- Question 1 (vocabulary) 
- Question 2 (comprehension) 
- Question 3 (social function) 
- Question 4 (text structure) 
- Question 5 (grammar) 
- …

The questions at least cover all the achievement indicators.

3. Experimenting (collecting data/information) 
   Associating (analyzing data/information) 
   Communicating (answers or conclusions) 

Questions 1 and 2 through one or two tasks.

4. Experimenting (collecting data/information) 
   Associating (analyzing data/information) 
   Communicating (answers or conclusions) 

Questions 3 and 4 through one or two tasks.

5. Experimenting (collecting data/information) 
   Associating (analyzing data/information) 
   Communicating (answers or conclusions) 

Question 5 and so on through one or two tasks.

6. Creating texts 
   - Guided production task(s) 
   - Semi-guided production task(s) 
   - Free production task(s)

Figure 1. Language classroom steps with the scientific method

For that reason, one or two learning tasks that require the students to collect and analyze data as well as communicate answers may be designed for every two related questions. Thus, some of the learning steps are repeated. The repeated steps are the experimenting (collecting data/information), associating (analyzing data/information), and communicating (reporting answers/conclusions) steps. Figure 1 presents the classroom steps.

Steps 1 to 5 are for the students to get knowledge about texts (e.g.: social function, text structure, grammar, vocabulary) and step 6 is for the students to use the knowledge they learn to comprehend and create texts or communicate ideas/thoughts. Students should spend much more time to create texts (step 6) than they do to get knowledge about texts (steps 1 to 5). That the scientific method classroom steps facilitate students to obtain knowledge about language and get a lot opportunity to produce language is in line with current views in language teaching and learning (see for example Kumaravadivelu, 2006).

Conclusion
To conclude this paper, a number of points are presented.

1. The curriculum recommends that the scientific method be applied. Language learning takes place through the steps of observing texts, questioning (asking questions), experimenting (collecting data), associating (analyzing data and drawing conclusions), communicating (findings or knowledge), and creating texts.

2. An English teacher plays a number of roles in the teaching and learning process. The teacher should provide support in every step, particularly assistance in listing items to understand, formulating questions, collecting data, associating data (and drawing conclusions), communicating answers (knowledge), and creating (and comprehending) texts.
3. A model of classroom steps has been proposed. Observing (texts) and questioning steps are combined. The three following steps – data collection, data analysis, and communicating steps can be repeated for different questions. When all questions have been answered and communicated, the final step, creating (texts) is done. In this final step, first, students are provided with every necessary support in order to produce language. Next, less support is given and finally minimum or no support is made available.

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