Needs of English Teachers in Designing Instrument of Affective Assessment Based on Scientific Approach: A Challenge for Curriculum Development at 21\textsuperscript{st} Century

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Abstract—The 21\textsuperscript{st} century gives positive and negative impact to education. These impacts are caused by there are many products of technology that can be used by students at school, home, and their environment. In order to face the challenges of 21\textsuperscript{st} century, scientific approach is chosen as the way of teaching that is hoped can improve the competences of students in three domains, such as cognitive, affective, and psychomotor. Hence, it becomes the new challenge in the curriculum development, even in developing the evaluation, especially, in designing the instrument of affective assessment. In addition, the assessment of affective domain based on scientific approach in English language teaching as difficult as the implementation of scientific approach itself. Due to this problem, before designing the instrument of affective assessment, it is needed to know the needs of teachers related to the designing of instrument itself in order to answer the challenge of 21\textsuperscript{st} century. To gain the data, the descriptive study was used by distributing the open-ended questionnaires to six English teachers. So, needs of teachers is the base in designing the instrument of affective assessment. Based on the result, it was found that the English teachers need an observation sheet in assessing affective of students. Besides, there are five levels of taxonomy that can be designed in the instrument, i.e. receiving, responding, valuing, organizing, and characterizing. Then, there are 18 (eighteen) types of affective that can be assessed in each phases of scientific approach. Finally, by knowing the needs of teachers, it is expected that the appropriate instrument in assessing affective domain can be designed.

Keywords—Needs, Designing Instrument, Affective Assessment, Scientific Approach, Curriculum Development

I. INTRODUCTION

The 21\textsuperscript{st} century is signaled by many producing of technology products. The education in 21\textsuperscript{st} century is also suggested to use the products of technology in purpose to support the teaching and learning process whether in the classroom or outside the classroom. The products of technology that are commonly used to support the students to learn are mobile phones, computer or laptops, and tablet. Certainly the technologies have given students a greater access to information technologies (Cohen, 2002). Moreover, these are equipped with internet facility. So, by using such these three technologies, it is hoped that can motivate the students to learn more and improve their learning achievement.

The learners in 21\textsuperscript{st} century are hoped can add their own knowledge by searching information from mobile phones, computer or laptops, or tablet with internet access. Implicitly, it is hoped that technology can improve the students’ curiosity and love knowledge. Besides, the students can work independently and full of responsibility toward they got from. But, technology is not always giving positive effect to the learning process. Sometimes, the students who are busier with technology will have limited time to socialize in their environment. Because, they are really enjoy in interacting with mobile phones, computer or laptops, or tablet every day. They can spend more time to use mobile phones, computer or laptops, or tablet. In fact, they forgot to socialize with family, teachers, classmates, brothers and sisters. Furthermore, sometimes, the students who are busier with technology do not care to others. Most of them just giving short respond when someone called him/her such as saying ‘em’ without seeing the face of people who was calling him/her. Then, when the teacher explains the lesson in the classroom, these students cannot show their respectfulness to teachers.

In other words, it can be said that technology in 21\textsuperscript{st} century also affects the students’ affective. So, it becomes the new challenge in education, especially in the curriculum development. Curriculum itself can be defined as a plan, learning experiences, a system, a field of study, and subject matters (Ornstein & Hunkins, 2013). Then, related to this definition, the
stakeholder such as Ministry of Education has important role in designing the curriculum that is involving purpose, design, implementation and assessment (Brady & Kennedy, 2007). Finally, the curriculum 2013 is created as the solution to answer the challenge of education in 21st century.

Moreover, in order to form the students to have a good capability in three domains—intelligence, affective, and psychomotor—the Ministry of Education in Indonesia asked the teachers, included English teachers to use scientific approach as the learning experience. Scientific approach is believed can improve the students’ capability in these three domains, because it has six specific claims, i.e. better comprehension, greater adaptability, greater interest, more realism, better researchers, and better teachers (Gauch, 2003). Hosnan (2014) describes that the scientific approach has five stages that are observing, questioning, experimenting, associating, and communicating. First, observing phase, the students can do some activities such as look at the picture, reading, and listening. Second, questioning phase, the students can give some questions to teacher or classmate. Third, experimenting phase, the students try to find many sources of learning and do some practices. Fourth, associating phases, the students are categorizing and making connection between the data. The last, communicating phase, the students convey the concept orally or written.

However, it does not enough if the teachers only be able to teach by using scientific approach. They must also be able to assess the students’ cognitive, affective, and psychomotor in order to know the students’ progress in these three domains. According to Djiwandono (2016) there are many people included teachers are trying to form the students’ affective. But, the difficult part in forming the students’ affective is in assessing the affective itself. It’s caused by the assessment for affective is still separated from the learning process. Besides, there is no appropriate instrument that can used to assess the students’ affective. In result, the assessment of students’ affective is irrelevant with the reality.

In addition, Bloom (1982) argues that the entry of affective characteristics during the teaching and learning process will give affect toward the students’ learning outcomes. It means that if the students have good characters in learning English, their learning outcomes will increase. In contrast, if the students have bad attitude in learning English, their learning outcomes will decrease. So, it is needed an instrument that can be used to assess the students’ affective in each phase of scientific approach. But, the assessment will be more difficult if the teachers assess the students’ affective in each phase of scientific approach. Then, it will be more complicated if the teachers must assess all types of affective that are appeared in each phase. In this case, what and how the instrument of affective assessment can be designed?

These questions are the bases of this research. So, before designing the instrument for affective assessment, the needs of English teachers must be analyzed. Gupta (2007) describes that by finding the needs of teachers, the gap between current and desired condition can be solved. That's why this research was conducted in order to analyze the teachers’ needs related to the designing an appropriate instrument for assessing the students’ affective during the teaching and learning process.

II. METHOD

The method used in this research was descriptive. To gain the data, the researcher used an open-ended questionnaire that is consist of 58 (fifty eight) questions. The open-ended questionnaire is developed based on five indicators, i.e. aspect of affective concept, scientific approach, affective assessment techniques, English language learning, and types of affective. This questionnaire was also used to measure the teachers’ knowledge related the affective assessment and their needs in accordance with the designing of instrument for affective assessment itself.

The open-ended questionnaire was distributed to six English teachers who were taught English subject in the classroom by using scientific approach at Junior High Schools in Merangin District. The chosen of respondent was based on purposeful sampling that is suggested by Gall and Borg (2003). They describe that the purposeful sampling can help a researcher to develop deeper understanding of the phenomenon being studied.

To validate the open-ended questionnaire, the researcher used experts’ validation. In this case, there are five experts who were validating the questionnaire. These experts were come from different field of study such as expert in English education, psychological of education, assessment of education, linguistics, and designing of learning. Then, there were two indicators in validating the questionnaire, i.e. aspect of language and content. Furthermore, the result of validation was based on the criteria from invalid up to very valid. So, based on the experts’ validation, it can be concluded that the questionnaire was directly can be used without any revision.

Moreover, due to the analysis of the answer given by English teachers in open-ended questionnaire, the researcher referred to some theories that were used in this research. Its purpose was to check the appropriateness and the correctness answers in those questionnaire. In order to know the total of teachers who gave the true or false answers, or the same and the different answers, the researcher also used percentage as formulated:

\[ P = \frac{F}{N} \times 100\% \]

- \( P \) = Percentage
- \( F \) = Frequency
- \( N \) = Total of Respondents
III. FINDING AND DISCUSSION

Finding and discussion of this research is focused on the needs of teachers related to the designing instrument for affective assessment. Designing instrument for assessing affective is the main point in making decision to rank the students’ score at the end of semester. Suppose there is a student who has higher scores in cognitive, but lower score in affective, he/she cannot be the best in the classroom. It means that the affective domain will be the core in evaluating the students’ learning outcome. Why? Because, the students who have good affective will always respect to the teachers, parents, friends, and others. They won’t be arrogant even they are very clever. These students will always showing the good attitude in socializing with somebody else.

In addition, analyzing the teachers’ needs is an important part in designing instrument for assessing students’ affective (Branch, 2009). Why it is so important? The English teachers are the user of this instrument. Then, they know much about the current condition at school, especially in the classroom. Besides, they know much which is appropriate and inappropriate with their students and themselves. Moreover, they also have many expectations for the future of the students. To simplify, Gupta (2007) describes that need analysis is discuss about a gap between the current condition and a desired condition. After knowing the teachers’ need, the suitable instrument for affective assessment will be known such as whether they need a form of journal, observation sheet, peer-assessment, or self-assessment.

Due to analyze the needs of English teachers, it is needed to analyze the teachers’ background knowledge toward five aspects as mentioned before i.e. aspect of affective concept, scientific approach, affective assessment techniques, English language learning, and types of affective. By knowing the teachers’ background knowledge related to the concept of affective assessment, so the capability of the English teachers toward the affective assessment itself can be concluded later on. In order to analyze the answers given by English teachers, the researcher used percentage (%) with five criteria as seen in table 1 as follow:

<table>
<thead>
<tr>
<th>Criteria</th>
<th>Score (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Very Good</td>
<td>81 - 100</td>
</tr>
<tr>
<td>Good</td>
<td>61 - 80</td>
</tr>
<tr>
<td>Enough</td>
<td>41 - 60</td>
</tr>
<tr>
<td>Bad</td>
<td>21 - 40</td>
</tr>
<tr>
<td>Very Bad</td>
<td>0 - 20</td>
</tr>
</tbody>
</table>

In table 1., the interval score between the criteria is 20 (twenty). Therefore, there are five criteria in deciding the English teachers’ background knowledge related to designing the instrument for assessing affective, that are very bad, bad, enough, good, and very good. That’s why, the lowest criterion is positioned in range 0-20 (%), and the highest criterion is positioned in range 81-100 (%). Then, after analyzing the answers given by English teachers in open-ended questionnaire, to simplify the result can be seen in table 2 as follow:

<table>
<thead>
<tr>
<th>Aspects</th>
<th>Total Score (%)</th>
<th>Criteria</th>
</tr>
</thead>
<tbody>
<tr>
<td>Affective Concept</td>
<td>77.3%</td>
<td>Good</td>
</tr>
<tr>
<td>Scientific Approach</td>
<td>76.2%</td>
<td>Good</td>
</tr>
<tr>
<td>Affective Assessment Techniques</td>
<td>78.6%</td>
<td>Good</td>
</tr>
<tr>
<td>English Language Learning</td>
<td>100%</td>
<td>Very Good</td>
</tr>
<tr>
<td>Types of Affective</td>
<td>100%</td>
<td>Very Good</td>
</tr>
<tr>
<td>Average</td>
<td>86.42%</td>
<td>Very Good</td>
</tr>
</tbody>
</table>

Based on table 2, English teachers have good background knowledge in three aspects i.e. aspect of affective concept, scientific approach, and affective assessment technique. Then, they have very good background knowledge in two aspects i.e. English language learning and types of affective. So, considering the average score that is 86.42%, it can be concluded that English teachers’ background knowledge related to these five aspects are very good. It is also can be concluded that the English teachers have the same understanding related the affective assessment concept. Moreover, it is also hoped that the English teachers will have the same ideas about their needs related to the designing instrument for affective assessment in the English classroom.

Next, based on the answers given by English teachers in open-ended questionnaire, it can be concluded that the English teachers need an instrument for assessing affective which able to cover the teachers’ wishes. This instrument is hoped can be used in the classroom during the teaching and learning process by using scientific approach. Why is it so? As noted that the affective that will be assessed are different in each phase of scientific approach. It is caused by the different of substantial in every phase. For example, in observing phase, it is hoped that the students can show the curiosity, respectfulness to teachers, work hard, and have logical thinking. In other phases, i.e. questioning, experimenting, associating, and communicating phases, the different attitudes will appear.

In this case, when the English teacher asks the students to observe the picture in a text book, so the English teachers will assess whether the students accept the instruction that is asked by the teacher or not. In this step, the affective that will be assessed is respectful. Then, during the student observes the picture, is the student wants to know much about it or not. So, the affective...
that can be assessed in this phase is love knowledge, curiosity, and work hard. The last, if the student gives argument related to the picture that he/she has observed, therefore the teacher can assess the logical thinking that is showed by the student.

Because of the complexity in assessing affective during the teaching and learning process by using scientific approach, so it is impossible for the English teachers to assess affective without using the appropriate instrument. Besides, it is not easy to assess and judge the students’ affective only once during one semester. Moreover, the assessment of affective nowadays is focused on one types of affective, even the total of the students in one class is around 30 students. That is why, the simple, easy, detail, and comprehensive instrument for assessing affective is much needed. This instrument is also hoped can cover the English teachers’ wishes.

Further, the needs of English teachers related to the designing of instrument for assessing affective can be seen from the gap between the real condition of assessing affective at school and English teachers’ expectation in the future. For some reasons, the English teachers were only using a piece of paper to assess the students’ affective. Then, the assessment was only focused on one types of affective i.e. honesty. Besides, the assessment could not be done in each phase of scientific approach. The assessment was not based on affective taxonomy. The last, the assessment was only for once of basic competency.

In English teachers’ expectation, they need an observation sheet that is completed by indicator and scoring rubric for assessing the students’ affective. Then, the assessment must be done in each phases of scientific approach and follow the level of affective taxonomy. Its purpose is to see the progress of affective changing which is showed by the students. Furthermore, the assessment must be done for each material in one basic competence. Moreover, there are 18 (eighteen) types of affective that must be assessed i.e. religious, honesty, responsible, discipline, hard work, self confidence, logical thinking, critical thinking, creative, innovative, independent, curiosity, love knowledge, respect, polite, democracy, emotional intelligence, and pluralist.

It can be concluded that the English teachers need an instrument that can be used while the teaching process is going on. The instrument must simple and easy to use. This instrument is also include the material that will be taught, phases in scientific approach, affective level, process of learning that commonly done by English teachers, focus of English language skills, indicators of scoring, and name of students. More simply, the instrument of affective assessment that will be designed must complete and comprehensive. In other words, the observation sheet must include the detail description that is spread out in a table. So, the English teachers directly can fill it.

Due to the research findings in the previous explanation related to the English teachers’ need in designing the instrument for affective assessment, there are some items that can be discussed as follows:

First, the English teachers needs an observation sheet for assessing students’ affective. McCoach, Gable, & Madura (2013) view that many researchers use observation as the way to collect the data, especially for educational and social research. They view that observation is also suitable for teachers to assess the students’ affective, because the observation that is done by teachers is believed will be more objective than peer or self-assessment. Giovanni and Synnove (2007) ever have done the assessment toward their students’ affective during the learning process. They found that it was effective to assess the students’ affective in order to form the attitude of the students.

According to Henerson, Morris, & Fitz-Gibbon (1978), even affective is something that cannot be judged directly, but it can be assessed by seeing action and utterance by people. In this case, the English teachers can see the students’ action during the teaching and learning process. Besides, the English teachers can also hear what the students are saying about something when they give comments, ideas, or arguments toward instruction, exercise, and discussion that are engaged in the classroom. So, the English teachers must pay attention to what action done by the students and what respond given by the students.

Second, the affective assessment is better done in each phase of scientific approach. Hosnan (2014) explains that there are five phases of teaching in scientific approach i.e. observing, questioning, experimenting, associating, and communicating. Thus, these phases have different orientation for affective types. Hosnan is also argue that the types of affective will be various in each phases. Therefore, it is also appropriate with the needs of teachers which are noted that they want to assess many kinds of affective in one phase of learning. For instance, in observing phase, the English teachers want to assess religious, respect to others, curiosity, hard work, and logical thinking; in questioning phase, the English teachers want to assess curiosity, love science, logical thinking, critical thinking, emotional intelligence, and responsible; in experimenting phase, the English teachers want to assess politeness, honesty, hard-work, creative thinking, innovative thinking, independent, and self-confidence; in associating phase, the English teachers want to assess honesty, hard-work, creative thinking, innovative thinking, independent, and self-confidence; and in communicating phase, the English teachers want to assess honesty, democracy, logical thinking, critical thinking, politeness, self-confidence, respect to others, responsible, and pluralist. So, it can be concluded that, more than one type of affective which are interested to be assessed by English teachers in each phases of learning based on scientific approach.

Third, the assessment is started from the lowest to highest level of affective taxonomy that is from receiving up to characterization. Allen and Friedman (2010) viewed that it is not enough for teachers to form the students only for their cognitive domain, but the teachers must also build the domain of affective such as ethics, aesthetics, and emotion. The affective components are spread in the affective taxonomy as described by Krathwohl, Bloom, & Masia (1964). They describe that in receiving level, the students are hoped can accept the learning. They are also hoped can fully attention to the teachers and listen well. In responding level, the students are hoped can give respond toward be learned such as answer the question, do assignment, make
some activities, etc. Then, in valuing and organizing level, the students have the consistency for what they are thinking, doing, and saying. Consistence means no changing. So, the students who have had a good affective won’t change their affective day by day. This consistency will bring them to have characterization. Characterization is very needed in protecting the students from bad damage in 21st century such as pornography, bullying, truant, engage in a gang fight, drugs, and many others bad effect that come across.

But, seeing the consistency of affective that is showed by the students is not an easy one. The students’ affective might be changed day after day depend on the situation of their emotional movement. The students can be a good boy/girl at a moment, and can be a bad boy/girl in other moment. It is also caused by the influence of their environment. So, what is expected from the affective assessment itself? The answer is control. The affective assessment is hoped can be the way to control the increasing and decreasing of students’ affective in English classroom. By giving good control toward the students’ affective during the teaching and learning process, so the students will be good human being outside the classroom and in the future.

Fourth, the English teachers want to assess in every meeting. It means the affective assessment will be done for each material during the teaching and learning process. In addition, at Junior High School, there are 20 (twenty) materials that must be taught by English teachers to students. So, at least, there are 20 times to assess the students’ affective in order to see its progress. In each material, the affective assessment will be divided into five phases based on scientific approach. By having long opportunity for the English teachers in assessing the students’ affective, it is hoped that the English teachers can give best evaluation related to students’ affective.

The last, there are 18 (eighteen) types of affective that must be assessed during the teaching and learning process i.e. religious, honesty, responsible, discipline, hard work, self confidence, logical thinking, critical thinking, creative, innovative, independent, curiosity, love knowledge, respect, polite, democracy, emotional intelligence, and pluralist. Elfindri (2012), Lickona (2012), Koessoema (2012), and Mustari (2014) explain that: (1) religious is feel grateful for the opportunity given by God to be able to learn; (2) honesty is an attempt to establish himself as a person who is always trustworthy in words, actions, and works; (3) responsible is dare to bear all risks due to action that is done; (4) discipline is orderly and obedient to various rules and regulation; (5) hard-work is serious effort in overcoming obstacles to complete the task; (6) self-confidence is the belief that people have the ability to do something to achieve a certain goal; (7) logical thinking is give ideas that can accepted by thought; (8) critical thinking is giving critics toward they are learned; (9) creative is making some creativity in learning; (10) innovative is making something new in learning; (11) independent is doing something by self not other; (12) curiosity is an attempt to know more deeply from what is being learned, seen, and heard; (13) love knowledge is perseverance, openness, massiveness, and believes in learning; (14) respect is the ability to see people as they really are, aware of their uniqueness as an individual; (15) polite is good manners in both language and behaviour; (16) democracy is a willing to not impose the will; (17) emotional intelligence is the ability of expertise and skill to identify, posses and control emotions; and (18) pluralist is tolerance for differences. Actually, there 25 (twenty five) types of affective that must be assessed by teachers included English teachers, but only 18 (eighteen) types of affective that can be assessed during the teaching and learning process. These types of affective directly have correlation with the learning process. In other words, 7 (seven) types of affective can be assessed in outside of the classroom.

Moreover, the eighteen types of affective are spread in the phases of scientific approach. Some of types of affective can be appeared in different phases. For example, respect to other can be appeared in questioning and communicating phases. According to research that has done by Hambali (2015), it is needed for teachers to assess the students’ affective continuously and frequently. Based on his research, it was found that the affective showed by students are different in each types of affective. In this case, the affective score for diligent and work-hard are lower than score for other types of affective. So, consequently, this condition will affect the students’ learning outcome at the end of semester. That’s why in designing the instrument of affective assessment, the indicators and scoring rubric are the main items in order to make decision about the students’ affective.

IV. CONCLUSION AND RECOMMENDATION

Education in 21st century opens much advancement. The curriculum itself is a bridge to reach the goals of educations. Then, education expects the students to have good intelligence, affective, and psychomotor. Education hopes learners are being aware to themselves. Education is also force students to be able to fight in any bad condition of their real life. Therefore, the assessment is needed to find out whether the learning outcome can be reached or not.

In addition, the changing of curriculum, recondition of some educational regulation, and make some innovations in assessment field are the way to take opportunities for education in 21st century. Besides, learning process is also the main point in facing education at 21st century. That’s why by giving the new learning experience to the students such as scientific approach is very appropriate. Finally, the comprehensive assessment for assessing affective of the students is the way to answer the challenge of education in 21st century.

References


