

Teaching Materials Based on Local Wisdom to Create Meaningful Learning in Aceh Province

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Abstract-Culture cannot be separated in transferring a knowledge to create the character of the concern and love of regional culture for students. Creating materials based on local wisdom is able to challenge students to reconstruct knowledge and build conceptual understanding. Local-oriented learning is meaningful learning. Meaningful learning indicator that emphasizes on student involvement in learning, students are able to learn with things close to everyday students and teachers can design learning that allows students to learn more actively, one of them with the application of teaching materials based on local wisdom of Aceh. Teaching materials that have been developed are tested to test the effectiveness by applying to different schools using experimental methods. The results show that students taught with teaching materials based on local wisdom of Aceh get a better value than students taught with conventional teaching materials.

Keywords-teaching materials based on local wisdom, teaching materials, Aceh, meaningful learning

I. INTRODUCTION

Meaningful learning is a process of linking new information to relevant concepts in one's cognitive structure [1]. Meaningful learning can be obtained when a teacher has the competence to design the learning well, one of which is that the teacher must be able to design teaching materials based on local wisdom. Teaching materials provide instructional guidelines for educators, which enable them to teach without having to look at the syllabus since they were designed in accordance with the syllabus and the current curriculum. In addition, teaching materials should be planned in accordance with the learning objectives to ensure the learning process runs well [2]

Local wisdom-based education is a platform that teaches students to experience real life situations they face in their daily life. Local wisdom-based education is similar to contextual learning since students deal directly to the environment where they learn. Contextual learning and teaching involve students to relate academic learning to the real life they face. Furthermore, it is a process that helps students to understand learning materials by

connecting them to the daily life matters such as personal, social and cultural contexts [3]

Acehnese local wisdom is the results of creations, feelings, intentions and works in term of 4 aspects, namely: (1) Cultural facts: concrete objects and the cultural environment of Aceh that can be used as an inspiration and abstraction for various concepts and principles in learning; (2) Social systems: patterns of social interaction, open attitudes and mindsets, courageous and uncomplicated in expressing opinions, mutual cooperation and tolerance, dialogue and community kinship; (3) Cultural system: the principles contained in the dialogue interaction pattern are to work together to solve problems, where each individual has the same rights to express opinions, to discuss, to help each other, to debate in a democratic atmosphere, and mutual respect; (4) Value system: the value of ancestral education in the form of advice and mindset to act, to work, to adapt to the environment and other people. For example, parents or teachers must encourage children to be independent through communicating with other people and their surrounding environment.

The Aceh's main sources of livelihood are agricultural, plantation and fisheries. Those themes and work demands are inspiration in formulating learning competencies. Adopted teaching materials are not necessarily applicable, since the way of thinking, perceiving, and acting a person is strongly influenced by his or her culture, environment, and other people around him or her [4]. In general, this fact can be seen from the low quality of education, especially in Aceh.

Various research results show that teacher is the center of learning process while students are objects, where they do not have enough time to construct their knowledge in learning through observing, asking, reasoning, trying, communicating, and building connections. Concepts and principles in learning are conveyed from teacher to student without abstraction and generalization. Better result is expected to be achieved if the new paradigm of teaching English is applied through meaningful learning

of local context. This is based on Vygotsky's statement that,

Higher mental functions (individuals are unique) contain social elements (influenced by culture) and apparent social nature. Higher mental functions can be achieved through social interactions involving facts and symbols. Facts and symbols from the cultural environment influence the development of individual understanding [4].

This indicates that the use of cultural aspects in learning can stimulate higher mental functions. The concepts and principles of constructivist-based learning can be understood through cultural approaches. Competence is defined as a combination of skills, abilities, and knowledge needed to complete a particular task [5]. In *Kepmendiknas* (national education ministry resolution) No.045/U / 2002, competence is a set of intelligent actions that bears full responsibility in which a person is considered capable by the community to accomplish tasks in a particular field of work.

Based on the above definition, competency is about how a graduate obtains/completes a particular job compared to the process/time of study, how big the opportunity to implement their abilities, knowledge and skills possessed in new situation and environment. The successfulness of English learning at school can be seen through how much English is transferred and the ability to contribute to answer life problems in society in general, and cultural environment in particular. An educational institution (school) should raise the problems or issues from the cultural environment where students live in learning English. It may be done through the formulation of basic competencies and indicators of a learning program that is carried out. Standards can be defined as something established (by the authorities) to measure quality. Competency standards must reflect the established quality standards. Another competent is then elaborated in the elements of competence or basic competencies set for certain subjects (English).

Competence relates to relevance, effectiveness and efficiency. It means that someone can be said to be competent if the work he or she does is relevant to their knowledge and expertise and resolve it in an effective and efficient way. If the work is not completed efficiently, then the executor of the work cannot be said to be competent. Competence can be obtained through integrative learning experiences after gaining knowledge, skills and abilities. However it should be noted that to master knowledge does not reflect the competence. Correspondingly, there are 4 competencies that should be considered in the assessment, namely: (1) technical competence, mastering technical expertise and knowledge of technology, (2) mastery of relevant knowledge, (3) attitude competency, which the reaction of graduates under certain conditions, (4) interpersonal expertise, how cooperative or collaborative interactions between graduates and others.

English Teaching Materials Based on Aceh Besar Local Wisdom adheres to learning theories that adopt constructivism (especially social constructivist theory), top-down learning (students try to solve complex problems by completing simpler problem and finding basic skills needed so that the whole problem is solved). The application of the characteristics of this teaching material is by involving the four aspects of Aceh Besar culture in each component and through the implementation of the learning process in the classroom.

Innovation in education is often associated with innovation derived from the results of creative thinking, findings and modifications that contain ideas and methods used to overcome an educational problem [6]. . Meanwhile learning model is a plan or pattern to form a curriculum and to design instructional materials which play as a guide for learning activities inside and outside the classroom. The learning model must be able to perform as a communication tool in delivering material. In order to obtain the optimum result of successful learning model innovation, several things need to be considered. They are theoretical rationale, learning rationale and learning environment. Learning model innovation should be flexible so that the delivery of the material becomes more-centered.

Learning model innovation cannot be separated from instructional materials such as knowledge, skills, and attitudes that students must learn in order to achieve predetermined competency standards [7]. Based on the above issues, some efforts need to be conducted to improve the quality of learning to help teachers implement a new paradigm in teaching English in the classroom. Teachers and students need guidance in the form of interactive learning instructional materials which are in line with local conditions and student culture by using a scientific approach.

II. MATERIALS AND METHOD

This study employs a quasi-experimental method. It aims to find out whether there is a consequence of something imposed to students. This study involved two classes, namely the experimental and the control class. This study includes a quasi-experimental study of two schools, to find out the effect of the treatment given to these schools. This study uses Control Group Pre-test and Post-test as its design. All junior high schools in Aceh Besar are the population of this study. Besides, purposive sampling was employed to choose the sample. First grade of SMP darussalam was taken as experiment class while first grade of SMP baitussalam as the control ones. 35 students of each class involved in this study. Furthermore, the research was conducted from February until august 2018. It tooks 4 meeting for each class or it was equal to 8×35 minutes/session.

III. FINDINGS AND DISCUSSION

a. *Post-test students data*

Table below shows the pre-test and post-test of students before treatment in both experiment and control groups.

TABLE I POST TEST STUDENTS DATA

Control Class			Experiment Class		
Value	f_i	Completeness	Value	f_i	Completeness
0,0	4	-	6,7	2	-
6,7	2	-	13,3	3	-
13,3	2	-	20,0	8	-
20,0	9	-	26,7	8	-
26,7	8	-	33,3	6	-
33,3	7	-	40,0	4	-
40,0	1	-	46,7	4	-
46,7	2	-			
Total	35	0%	Total	35	0%

The table above shows that the average pretest for the control class is 22.9 and the standard deviation is 12.3 with the highest score of 46.7 and the lowest value of 0. For the pretest of the experimental class, the average value is 27.8 with a standard deviation of 11, 1 with the highest score is 46.7 and the lowest value is 6.7. The pre-test data above shows that no students who reach the Minimum Completeness Criteria (KKM) in English subjects of 60. Thus, it can be concluded that 0% of students meet the KKM.

b. *Students' post-test data*

After pre-test results obtained, researchers conducted implement the English materials based on Aceh local wisdom to experiment class, while the regular text book material was given to control class. Post-test result of both classes is shown in the table below:

TABLE II. STUDENTS' POST-TEST DATA

Control class			Experiment class		
Value	f_i	Completeness	Value	f_i	Completeness
46,7	3	-	46,7	1	-
53,3	5	-	53,3	2	-
60,0	7	20%	60,0	4	11%
66,7	8	23%	66,7	7	20%
73,3	7	20%	73,3	7	20%
80,0	2	5%	80,0	8	23%
86,7	3	9%	86,7	4	11%
			93,3	2	5%
Total	35	77%	Total	35	90%

The data in the table above shows that the average post-test for the control class is 65.5 and the standard deviation is 11.1 with the highest score of 86.7 and the lowest value of 46.7. For post-test, the experimental class obtained an average value of 72.8 with a standard deviation of 11.4 while the highest value was 93.3 and the

lowest value was 46.7. Based on the data that has been obtained, 27 out of 35 students in control class were achieving KKM grades so that classical completeness reached 77%. However, this classical completeness is still under 85% (successful). Therefore, it can be concluded that regular textbook teaching material in the control class fails to provide classical completeness.

Meanwhile, 33 out of 35 students in experimental class achieved KKM grades so that classical completeness reached 90%. This classical completeness has reached more than 85%, which means it is successful to obtain classical completeness. Thus, by implementing English interactive teaching materials based on Acehese local wisdom in the experimental class managed to provide classical completeness

c. *Calculation of the Effectiveness of Interactive Teaching Materials based on Local Wisdom*

The effectiveness of teaching materials tested in the experimental and control classes was calculated using the percentage of N gain reinforcement with its interpretation. The results are shown in the following table:

TABLE III N GAIN CALCULATION OF SAMPLE CLASS

Class	Average Pre-test	Average post-test	Ideal Value	N gain	Conclusion
Control	22,9	65,5	100,0	55%	Less Effective
Experiment	27,9	72,8	100,0	62%	Effective

Based on the table above, it can be concluded that English-language interactive teaching materials based on Aceh's local wisdom tested in the experimental class get 62% effectiveness, and meaningful instructional materials have an effective effect in improving student English learning outcomes. While the teaching materials in the form of textbooks that were tested in the control class had 55% effectiveness, this means it has an ineffective effect on improving students' English learning outcomes

Inferential Test

1. *data normality test*

Data normality testing was conducted by using Liliefors test. Before hypothesis was tested, the data must fulfill several requirements such as data normality. The result is shown in the following table:

TABLE IV. DATA NORMALITY SUMMARY

Class	Data	L_{count}			L_{table}	Note
Control	Pre-test	0,1065			0,1498	Normal
	Post-test	0,1201				
Experiment	Pre-test	0,1398	0,1498	Normal		
	Post-test	0,1123	0,1498	Normal		

Based on Table above, $L_{count} < L_{table}$ so that it can be concluded that the data obtained from both classes are derived from normally distributed population.

2. Homogeneity data test

Homogeneity testing is done to find out whether the sample used in this study is homogeneous or not. In other words, the sample used in this study can represent the entire population. Data homogeneity testing is done by F test. The calculation results for pretest and posttest data from both groups can be seen in the following table:

TABLE V HOMOGENEITY DATA SUMMARY

Data	Class	Varians	F _{count}	F _{table}	Note
Pretest	Experiment	124,21	1,23	1,76	Homogen
	Control	152,36			
Posttest	Experiment	129,04	1,04	1,76	Homogen
	Control	124,19			

Based on the table above the value of $F_{hitung} < F_{tabel}$ which means that the sample used in this study expressed homogeneous population variance.

d. Hypothesis testing

The test results about the initial ability (pretest) of students before given a different treatment, obtained the price of $t_{count} = 0.175$. At the significance level $\alpha = 0.05$ and $dk = 35 + 35 - 2 = 68$ obtained the price of $t_{table} = 1.997$ (complete calculation can be seen in appendix 20). By comparing t_{count} and t_{table} obtained $t_{count} < t_{table}$ or $0.175 < 1.997$, which means that H_0 is accepted or H_a is rejected. Thus, there is no significant difference between the initial ability of students before given a different treatment.

Further step is conducting posttest testing by using a different t test to distinguish the average posttest of the experimental and control class. It aims to find out whether there is a difference in the effect of the use of interactive English teaching materials based on Acehese local wisdom with conventional learning on student learning outcomes. The results of testing hypotheses obtained by the price of $t_{count} = 2.664$. At significant levels $\alpha = 0.05$ and $dk = 35 + 35 - 2 = 68$ obtained the price of $t_{table} = 1.669$ (complete calculation can be seen in appendix 21). By comparing t_{count} and t_{table} , it is obtained that $t_{count} > t_{table}$ or $2.664 > 1.669$ means that H_a is accepted and H_0 is rejected. Therefore, there is a significant difference between the use of interactive English teaching materials based on Acehese local wisdom and conventional learning on English learning outcomes in the first grade of SMP (junior high school students).

TABLE VI T TEST SUMMARY

Data	Kelas	Average	T _{count}	t _{table}	Note
Pretest	Experimen	27,8	0,175	1,997	Similarity in initial ability
	Control	22,9			
Posttest	Experiment	72,8	2,664	1,669	Difference in influence
	Control	65,5			

Interactive English teaching materials based on Aceh local wisdom encourage students to be more active in learning so they will get a better understanding and will be more interested to engage in the material presented. Active involvement of students is proven to improve student achievement and student activities in learning activities.

Interactive English teaching materials based on Aceh local wisdom seeks to instill the basics of scientific thinking in students. In the learning process, students learn more on their own so that it causes them to be more creative in solving problems. This materials that based on Acehese local wisdom are also able to make students work together through group discussions that require them to provide input to their peers. Hence it may help others to be more motivated to learn difficult materials.

The level of understanding gained by students is greater because they are directly involved to find answers of problems and apply them through data collection and analyze them. This makes learning process is more effective and efficient. This interactive English language teaching material based on Acehese local wisdom is very good for students who have high curiosity because this method makes them more active.

A teacher must be able to manage the classroom. Teachers who are creative in teaching may help students learn in an enthusiast way. It boost the success in teaching and learning and the objective goals of learning are greatly achieved.

e. Student learning outcomes using teaching materials based on aceh local wisdom

Pre-test results show that classical completeness (KKM) was not achieved by students in both classes. However, the posttest results in Table 4.2. Show that 27 out of 35 students achieved 77% of classical completeness (KKM) where it is still considered below standard of 85%.

Meanwhile 33 out of 35 students in the experimental class achieved 90% of classical completeness (KKM). It has reached more than its success standard of 85%, thus learning by applying English language interactive teaching materials based on Aceh local wisdom in the experimental class managed to provide classical completeness. Hence, this materials are considered to be more effective compared to conventional learning.

Learning by using interactive English teaching materials based on Acehese local wisdom emphasizes students to actively engage in finding materials they learn and connecting to their environment. Thus it encourages students to be able to apply it in their daily lives. The model not only makes students act as recipients of the material verbally, but also plays a role in discovering and formulating the core of the material that taught.

Interactive English teaching materials based on Aceh local wisdom encourage students to be more active in learning so that they will get a better understanding of the

material and will be more interested in the material presented. Active involvement of students is proved to boost their achievements and student activities in learning activities.

This material seeks to instill the basics of scientific thinking in students since students learn more on their own that tend to make them to be more creative in solving problems. Besides, it also encourages students to work together through group discussions, which require them to interact with their peers. Students will understand more when they directly involve in finding answers towards problems.

f. The different Influence of interactive English teaching materials based on Acehese local wisdom with the Conventional Learning Model on Student Mathematics Learning Outcomes.

Furthermore, based on N Gain calculation as shown in the table, it can be concluded that the interactive English teaching materials based on Acehese local wisdom imposed to experimental class had 62% effectiveness. This means that it is quite effective in improving students' mathematics learning outcomes. In contrast, conventional materials given to control class had 55% effectiveness. It is less effective in improving students' mathematics learning outcomes. In short, English teaching materials based on Acehese local wisdom have an influence on students' mathematics learning results.

Meanwhile, hypothesis testing is carried out to find out the influence of this interactive English material. The results of hypotheses testing $t_{\text{count}} = 2.664$, at a significant level $\alpha = 0.05$ and $dk = 35 + 35 - 2 = 68$ the $t_{\text{table}} = 1.669$. By comparing t_{count} and t_{table} , where $t_{\text{count}} > t_{\text{table}}$ or $2.664 > 1.669$. It means that H_a is accepted and H_0 is rejected. In conclusion, there is a significant difference between the use of interactive English teaching materials based on Acehese local wisdom and conventional learning on student learning outcomes in learning English in junior high school.

The results showed that there was a significant influence between the use of interactive English teaching materials based on Aceh's local wisdom on student learning outcomes. Moreover, students average pretest value in the control class was 22.9 and the posttest average score was 65.5. Meanwhile in the experimental class the average student pretest score was 27.8 and the posttest average score was 72.8. Learning outcomes of control class students was 42 and 45 in experimental class.

IV. CONCLUSION

According to this research results, it can be concluded that the use of interactive teaching materials based on Aceh local wisdom is very appropriate to be applied in learning English. In order to improve student learning outcomes, they may learn through interactive teaching materials based on local wisdom, where they can learn directly from the facts and phenomena around them.

Besides, by learning materials based on their local wisdom, students should love their culture.

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