**VOCABULARY ACHIEVEMENT AND TEAM-BASED LEARNING (TBL) OF INDONESIAN STUDENTS**

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Abstract

The objectives of this research were: (1) To find out whether or not the Team-Based Learning approach enriches the students’ vocabulary. (2) To find out whether or not the students are interested in studying English by using Team-Based Learning approach. This research employed quasi-experimental design. The population and sample of this research was the first graders of Computer and Network Department of SMKN 2 Jeneponto in school year 2013/2014. The sample of this research was consisting of 38 students. This research used purposive sampling technique. The research data were collected by using two kinds of instruments namely: English vocabulary test for the students’ vocabulary enriching and questionnaire for the students’ interest. Data on the students’ vocabulary enriching were analyzed by using SPSS 20, and data on the students’ interest were analyzed by using Likert Scale.

The result of the research were: (1) The used of Team-Based Learning approach in teaching vocabulary enriching the students vocabulary as there is difference vocabulary mean score of the experimental group in posttest was significantly higher than the control group (73.15 > 41.67). (2) The students’ level of interest in Team-Based Learning approach was categorized very high interest. It can be concluded that that (1) the used of Team-Based Learning method was more effective to enrich students’ vocabulary first graders of Computer and Network Department of SMKN 2 Jeneponto (2) the students have very high interest in learning English through Team-Based Learning.

Keywords: Vocabulary, English for specific purposes, and Team-based learning

1. **Introduction**

Nowadays, English is very important. English is taught and learn from Elementary to the University, of course, English exist as an important subject. English as a foreign language involves four skills, such as listening, speaking, reading and writing. These four language skills are developed from language components such as vocabulary, structure, spelling and pronunciation.

Vocabulary is one of the most important things and it should be given more priority and attention than the other skills, because the knowledge of vocabulary is a key to understand those skills. Students or others cannot convey their ideas in written and spoken form without having a sufficient number of vocabulary.

The teachers’ role in applying interesting teaching methods is one of the important factors in creating a good atmosphere in the classroom activities. They should know how to develop the students interesting during the classroom and how to design material so that learning vocabulary will not become such as boring and monotonous thing.

In fact, with the vast growing of technology followed by increasing demand for workforce, Vocational School (SMK) graduates are expected to be qualified either in their particular disciplines, especially English. The government’s program, in this respect the Department of National Education has conducted many important programs for Vocational School, so the graduates of Vocational School have been provide working skills and capabilities in their respective fields; Smart means the graduates of Vocational School are being smart not only intellectually, but also in spiritual, emotional, social and kinesthetic terms, Competitive means the graduates of Vocational School graduates being competitive in spirit, a desire to be an agent of change, so they can win the tight competition both locally and globally (Dikmenjur, 2013:4)

One of the techniques that can be adopted is Team Based Learning (TBL) as a part of communicative approach. Team Based Learning was developed in the 1970’s by Dr. Larry K. Michaelsen, a Professor of Management at the University of Oklahoma, who wanted to change the passive learning in his lectures into active learning by testing and assigning students to teams. The same or more material can be covered in TBL as in traditional lecture format. The most important element in Team-Based Learning are Team-Based Learning, Student Preparation, Readiness Assessment and Group Activities are the elements of Team-Based Learning and are equally important.

In addition, Larry K (2004) stated: Team Based Learning is a small learning group method where individual work is done outside the class and team work is completed in class. The four principles of TBL are (1) properly formed and managed groups, (2) student accountability, (3) team assignments that promote learning, group interaction and team development, and (4) frequent and immediate feedback to students. The rationale for using TBL is that it is a good interactive alternative to passive lectures, requires no extra facilities or faculty, develops interpersonal skills and assists “at risk” students. Implementation of TBL involves planning before the class, forming groups in the 1st class and reminding the students of the learning objectives, content application and team work near the end of the class.

Furthermore, Tom Hutchinson and Alan Waters (1987) stated that the language learning will reach the point whenever the learners get their needs. The assumption underlying this approach is that the clear relevance of the English course to their needs would improve the learners’ motivation and thereby make learning better and faster.

The teaching vocabulary of computer and network department has important role in succeed of teaching and learning. English for Computer and Networking is also branch of English for Scientific and Technology (EST) which is a branch of English for Specific Purpose (ESP).

Based on the explanation above, the researcher is interested in focusing the research The Effectiveness of Team-Based Learning (TBL) to enrich the Vocabulary for First Graders of Computer and Network Department of SMK Negeri 2 Jeneponto.

1. **Literature Review**
   1. Definition of Team Based Learning

Michaelsen (2004) said that a team-based learning is an approach for teaching in the classroom. The tremendous power of team-based learning is derived from a single factor: the high level of cohesiveness that can be developed within student learning groups. In other words, the effectiveness of team-based learning as an instructional strategy is based on the fact that it nurtures the development of high levels of group cohesiveness which, in turn, results in a wide variety of other positive outcomes. It clearly takes a transformation process to evolve a small group into a powerful, cohesive learning team.

In addition, From Michaelsen, L., Watson, W. and Black, R. (1989) explain the difference between a team and group. Group has two or more people who interact on a common activity and Individual commitment to group is casual, temporary or permanent while Team has two or more people who interact on a common activity, individual commitment to the welfare of the group, high level of trust among members of team and 98% of teams will outperform the best member on learning-related tasks.

* 1. The Implementation of Team-Based Learning

Brame (2012) stated that the implementing of Team-Based Learning by using the following five steps:

* + - 1. Permanent and instructor-assigned groups, [Students are organized strategically](http://www.teambasedlearning.org/Default.aspx?pageId=1032336) into diverse teams of 5-7 students that work together throughout the class.  Before each unit or module of the course, students prepare by reading prior to class.
      2. In the first class of the module, students participate in a “Readiness Assurance Process,” or RAP. Specifically, students complete a test individually (the “Individual Readiness Assurance Test,” or iRAT); and then complete the test with their group members (the “group Readiness Assurance Test,” or gRAT). Both the individual scores and the group scores contribute to the students’ grades. The tests are typically multiple choice, and students often complete the group test using a “scratch-off” sheet and score themselves, reducing grading time and promoting student discussion of correct answers.
      3. After the students complete the group test, the instructor encourages teams to appeal questions that they got incorrect. The appeals process encourages students to review the material, evaluate their understanding, and defend the choice they made.
      4. To conclude the Readiness Assurance Process, the instructor gives a mini-lecture that focuses on concepts with which students struggled the most. Importantly, this work serves as preparation for the in-class application activities that complete the module. These application activities require the teams to make a specific choice about a significant problem.
      5. Importantly, all teams work on the same problem and report their decisions simultaneously. This structure requires teams to articulate their thinking, and gives teams an opportunity to evaluate their own reasoning when confronted with different decisions that other teams may make. Peer evaluation is an important part of team-based learning; it is essential for keeping students accountable to their teammates.

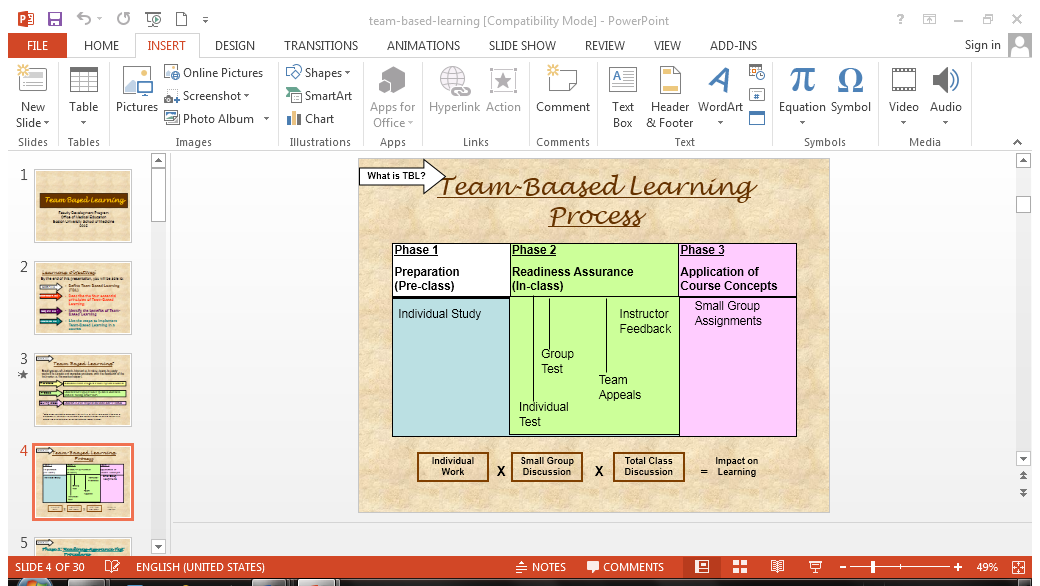


Figure. 2.1 Team-Based Learning (TBL) Process

* 1. Definition of Vocabulary

Language is the primary vehicle of though, expression, and communication and vocabulary is the basic unit of language. If language is consider as a body, vocabulary will provide the vital organs and the flesh (Harmer in Alimuddin, 2013:20). Vocabulary can be defined as the words we produce in speaking, the words we listen, and the words we write and also read on a text. Vocabulary may be more than a single word but express a single idea. In order to make our understanding more clearly about what actually the vocabulary is, let’s look at definitions states by some experts below:

1. Hornby (1974) in the oxford Advanced Learners Dictionary of current English issues that vocabulary is book containing a list of words, list of words used in a book, etc., use with the definition or translation.
2. Oxford learner’s Thesaurus online, (2013) defines vocabulary as all the words that a person knows or uses; all the words in a particular language; the words that people use when they are talking about a particular subject.
3. Harmer, (in Alimuddin 2013: 20) stated that vocabulary is the vital organ and flesh to the language. It is the thing that language activity can hardly do without vocabulary.
4. Broardly in Junaid (2007: 13) defined, vocabulary is knowledge of words and word meaning. However, vocabulary is more complex than this definition suggest. First, words come in two forms: oral and print. Oral vocabulary includes those words that we recognize and use in listening and speaking. Print vocabulary includes those words that we recognize and use in reading and writing. Second, word knowledge also comes in two forms, receptive and productive. Receptive vocabulary includes words that we use when we hear or see them. Productive vocabulary includes words that we use when we speak or write. Receptive vocabulary is typically larger that productive vocabulary, and may include many words to which we assign some meaning, even if we don’t know their full definitions and connotations—or ever use them ourselves as we speak and write (Kamil & Hiebert, in Alimuddin: 2013:14).

According to the definitions above, the researcher conclude that the vocabulary is the part of making sentences orally or written. Without vocabulary, someone cannot use the language as a tool of communication. So, we need much vocabulary to make the people understand what we will use in communication.

* 1. Types of vocabulary

Harmer in Alimuddin (2013) points out two kinds of vocabulary namely active vocabulary and passive vocabulary. Active vocabulary refers to which has been learned by the students and they are expected to be able to used it. And passive vocabulary refers to words which the students will recognize when they meet them but will not probably be able to use or produce them. Page and Thomas in Erni (2008:10) divided vocabulary into four types as follows:

1. Oral vocabulary, consist of words actively used in speech. They are the words that can readily to the tongue of one’s conversation. The more often a person utters words the more readily it will come to this tongue.
2. Listening vocabulary is stock of words to which one responds and understood in the speaking of other.
3. Writing vocabulary is the words that readily to one finger vocabulary.
4. Reading vocabulary is the words that one responds in writing other.

All types of vocabulary are needed to increase the pupils’ fundamental skills require in any language.

* 1. The problem faced by the students in learning English vocabulary

Generally, the students have many problems in studying English, related of the learning of vocabulary as a fundamental element of studying English. Akram (2003) states that some problem faced are as follows:

1. Motivation. Highly motivated students will learn easier and memorize words longer than one who has low motivation. It is obvious that motivation is a considerable factor in learning a target language. For experience tells that some vocabulary items are easily to learn and to memorize for a long period of time while others leave the brain quickly although they have tried to remember them.
2. The provision of good textbook or language materials. The students need to read various topics for vocabulary expansion. It is obviously not enough to read just one or two passage in class. What they need to enlarge their vocabulary building is to practice reading as much as possible outside classroom.
3. The syllabus and time table. There is no place for the teaching of vocabulary in the English syllabus and consequently, no particular time allocate for vocabulary through other aspect of the English language. Vocabulary cannot be well taught without a special time-allocation given. Therefore, the best solution to this problem is to allocate time for teaching vocabulary.
4. Methods of instruction. It is obvious that methodology is a considerable factor in teaching vocabulary. How well vocabulary is learned depends a great deal on the techniques employed by the teacher.
   1. Definition of ESP (English for Specific Purposes)

English for Specific Purposes (ESP) is a learner-centered approach to teaching English as an additional language (Hutchinson and Waters, 1991:11), which focuses on developing communicative competence in a specific discipline such as academics, accounting, agrology, business, Information and Technology (IT), teaching, and engineering.  From ESP, it should be remind that Special English is different from General English in terms of preference of some grammatical structures to others, stylistic characteristics, and field-specific vocabulary, has nevertheless inherited the patterns of word formation, syntactic and discourse organization from the larger system of language.

Dudley-Evans, T. & St. John, M.J. (1998) in Valeria, 2010: 49, offer a modified definition and express their revised view on the essence of ESP from two perspectives: absolute characteristics and variable characteristics. According to them the absolute characteristics are:

* 1. ESP meets the learner’s specific needs;
  2. ESP makes use of the underlying methodology and activities of the disciplines it serves;
  3. ESP is centered on the language (grammar, lexis, and register), skills, discourse, and genres appropriate for these activities

They consider as variable characteristics the following:

1. ESP may be related or designed for specific disciplines;
2. ESP may use, in specific teaching situations, a different methodology;
3. ESP is likely to be designed for adult learners;
4. ESP is generally designed for intermediate and advanced learners.

Dudley-Evans and St. John (1998) in Valeria (2010:49) have removed the absolute characteristic that “ESP is in contrast with General English” and added more variable characteristics. They assert that ESP is not necessarily related to a specific discipline. Furthermore, ESP is likely to be used with adult learners although it could be used with young adults in a secondary school setting. The range of ESP has been extended and become more flexible in the modified

From the definition, we can see that ESP can but is not necessarily concerned with a specific discipline, nor does it have to be aimed at a certain age group or ability range. ESP should be seen simple as an 'approach' to teaching, or what Dudley-Evans describes as an 'attitude of mind'. This is a similar conclusion to that made by Hutchinson et al. (1987:19) who state, "ESP is an approach to language teaching in which all decisions as to content and method are based on the learner's reason for learning".

1. **Methodology**

This research is a quantitative study applied quasi-experimental design. Two groups were experimental group and control group. It is to find out the vocabulary of the first graders of Computer and Network Department of SMKN 2 Jeneponto. Both of groups was given pretest and posttest. The pretest was administrated to find out the students’ prior knowledge whereas the posttest used to find out the students’ achievement after receiving treatment through teaching vocabulary using Team-Based Learning in experiment group by the researcher and teaching vocabulary through conventional technique in control group by other teacher.

* 1. Subjects

The population of the research was the first graders of SMKN 2 Jeneponto in the 2013/2014 academic year. In SMKN 2 Jeneponto consist of five classes, such as: Computer and Network Department consist of 36 students, Electrical Department consist of 40 students, Fashion Department consist of 35 students, and two classes of Agricultural Department consist of 79 students. The total numbers of population is 190 students.

The sample was selected by using purposive sampling technique. The researcher’s reason using purposive sampling technique in selecting sample is that the school because 1) the class of Computer and Network Department are heterogeneous, 2) the motivation and attitude in learning English is better than other class. The researcher selected 36 students from class of Computer and Network Department.

The researcher selected 18 students for odd number of attendance list and 18 students for even number of attendance list. Group A was taken as experimental group consist of 18 students and group B was taken as control group consist of 18 students. The researcher took only one class as an object of the research, where as an experimental class, consist of 18 students and as a control group 18 students they were Computer and Network Department at SMKN 2 Jeneponto consists of 36 students.

* 1. Data collection Procedures

In collecting the data the researcher through the following procedure:

* + - * 1. Before presenting materials, the students was given the pretest to find out the students’ prior vocabulary achievement. This pretest done both experiment and control group in order to get data on students’ prior knowledge. In this test, the researcher gave the students test about naming of the picture of part of computer, making sentence using “Language Focus”, fill the blank, True or False and multiple choice. The tests were about 30 items. The pretest was given to two classes, experimental group and control group.
        2. The next step is treatment on the experimental group and control group. Firstly, the researcher determine which of the two groups such as an experimental group and control group. The experimental group tread by using Team-Based Learning as a technique of learning process while the control group followed the Non-TBL way. The students was given treatment by the application of Team-Based Learning in their English vocabulary class. In the treatment the teacher prepare some pieces of paper of the material.
  1. Method of Analysis

The data collecting in line with instrument and analyzed quantitatively.

* + - * 1. Scoring the students’ answer of pretest and posttest, with formula:
        2. Tabulating the score of the students test both experimental group and control group.
        3. Classifying the score of the students
        4. Analyze the students’ learning vocabulary the researcher analyzed and described the data measures and calculating the means score, standard deviation, and the t-test between vocabulary test of the experimental and control group by using SPSS 20.0 version (Gay, 2006:378)

1. **Result and Discussion**
   1. The students’ English vocabulary using Team-Based Learning

Table 1. Description statistic of students’ enriching English Vocabulary

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Kinds of Test | Experimental Group | | | Control Group | | |
| N | Mean | SD | N | Mean | SD |
| Pre-test | 18 | 35.92 | 20.59 | 18 | 31.48 | 18.44 |
| Post-test | 18 | 73.14 | 20.21 | 18 | 41.66 | 18.89 |

Based on the table above shows that the mean scores of experimental group was different from control group after treatment. The mean score of pretest of experimental group was 35.92 which were categorized as poor and while means score of students pretest of control group was 31.48. It was categorize poor. It means that score of both group was relatively the same. It is just a little higher in range of 4.44 points. Both experimental and control group had the same or relatively the same baseline knowledge in vocabulary before the treatment.

The mean score of posttest of experimental group was 73.14 which were categorized as good and while means score of students’ posttest of control group was 41.67. It was categorize average. It is indicated that the mean score of students’ experimental group was higher than the control group. It increases 31.47 points. Besides, in experimental group before and after the research (pretest and posttest) has a high improvement of achievement from mean 35.92 (poor) to 73.14 (good). In control group had a little improvement of achievement from 31.48 (poor) to 41.67 (average). It showed that the treatment with Team-Based Learning gave significant enriching the English vocabulary for the students.

As a result, the researcher applied independent samples test to confirm the hypothesis.

| **Independent Samples Test** | | | | | | | | | | |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | | Levene's Test for Equality of Variances | | t-test for Equality of Means | | | | | | |
| F | Sig. | t | df | Sig. (2-tailed) | Mean Difference | Std. Error Difference | 95% Confidence Interval of the Difference | |
| Lower | Upper |
| Pre test | Equal variances assumed | .868 | .358 | -.682 | 34 | .500 | -4.4428 | 6.5167 | -17.6863 | 8.8007 |
| Equal variances not assumed |  |  | -.682 | 33.593 | .500 | -4.4428 | 6.5167 | -17.6922 | 8.8066 |

Beside mean score, this research explored test of significance (t-test) to measure whether or not is a significant different between the results of the students’ mean score in pretest and posttest reached by experimental and control group. T-test was analyzed by using inferential analysis. The level of significance is (ɑ) = 0.05 and degree of freedom (df) = 36 got by using formula N1+N2. The number of students of both group 36. T-test value is illustrates in following the table:

The T-Test of the Students’ Vocabulary on Pretest and Posttest

|  |  |  |  |
| --- | --- | --- | --- |
| **Variables** | **Probability Value** | **(**ɑ**)** | **Remarks** |
| Pretest | 0.500 | 0.05 | Not significantly Different |
| Posttest | 0.000 | 0.05 | Significantly Different |

Based on table above, the researcher found that the P-value of pretest (0.500) was bigger that the level significance 0.05 (0.500>0.05). It means that the students’ score of both experimental and control group was significantly different. It indicated that both of experimental and control group had the same ability before treatment. Furthermore, the P-value of posttest (0.000) was lower that the level significance 0.05 (0.000<0.05). It means that alternative hypothesis (H1) is accepted and of course the null hypothesis (H0) is rejected. It means that the score of experimental group was bigger than control group after the treatment. It can be concluded that teaching by Team-Based Learning enriching the students’ English vocabulary.

1. **Conclusion**

Based on the research findings and discussions in the previous chapter, the researcher comes to the following conclusions that using TBL is effective to enriching vocabulary for the first graders of computer and networking department of SMKN 2 Jeneponto. It was indicated by the results of the students’ posttest of experimental group about 73.14 while control group only 41.67. Moreover, the mean score of experimental group was higher than a control group. The students were interested in learning vocabulary by using TBL. It was proved by the mean score of the students’ score using Likert-Scale. It was indicated by the fact that most students (15 students or 83.3%) felt into very high interest and high interest category (3 students or 16.7%). They enjoyed the class and were also enthusiastic in attending the class during the research.

**References**

Alimuddin, Andi Haeriati. 2013. *The effectiveness of Vocabulary-Based Integrated Activities in Improving the Students’ Vocabulary Command*. Unpublished Thesis. State University of Makassar.

Arikunto, Suharsimi. 2013. *Prosedur Penelitian: Suatu Pendekatan Praktik*. Jakarta: PT. Rineka Cipta.

AR, Syamsuddin., Damaianti, Vismaia S. 2011. *Metode Penelitian Pendidikan Bahasa*. Bandung: Kerjasama PPs UPI dan PT. Remaja Rosdakarya

Brame, Cyntia J. 2013. Team-Based Learning. Media Teach. Pg.1-5

Dikmenjur. 2013. *SMK: Siap Kerja, Cerdas dan Kompetitif*. Jakarta: Direktorat Pembinaan Sekolah Menengah Kejuruan.

Erni. 2008. *The Effectiveness of using Semantic Feature Analysis in Teaching English Vocabulary for Elementary School*. Unpublished Thesis of Muhammadyah University of Makassar

Febrinayanti 2004. *The Effectiveness of Spider Web Extension on Teaching Vocabulary* Unpublished Thesis of FKIP Universitas Muhammadiyah Makassar.

Gay, LR. Mills, Geofrey E. Airasian, P. 2006, *Educational Research Competencies for Analysis and Application.* New York; Eight Edition Columbus: Charles E. Merill Publishing Company.

Gillespie, Judy. 2012. Teaching Note: Enhancing Social Work Education Through Team-Based Learning. *Journal of Social Work Education*. Vol.48, No.2. Pg: 377-387

Harmer, J. 1991. *The Practice of English Language Teaching*. London: Longman

Hornby, AS. 1973. *Oxford Advanced Learner’s Dictionary of Current English*. Oxford: Oxford University Press Inc

Howland, Peter J. 2010. Team Based Creative learning in Bridging Education. *Journal Good Practice Publication*. Pg. 1-15

Indahyanti. Rr. 2010. *The Implementation of Cooperative Learning “Type Team Game Tournament” in Improving Students Vocabulary Achievement*. Unpublished Thesis. Makassar: Universitas Negeri Makassar.

Julianti. R. 2010. *The use of Contextualizing Technique in Improving Vocabulary Mastery of the First Year Students of SMAN 8 Makassar*. Unpublished Thesis. Makassar: Universitas Negeri Makassar.

Junaid, Syahruni. 2007. *Using Cartoon movies in improving the students’ vocabulary*. Unpublished Thesis. State University of Makassar.

Karim, Irkah Taswirah. 2013. *The implementation of Task- Based Language Teaching (TBLT) to improve students’ ability in writing Narrative text*. Unpublished Thesis. State University of Makassar.

Keeler, Carolyn M, & R. Kirk Steinhorst. 1995. Using Small Group to Promote Active Learning in the Introductory Statistics Course: A report from the Field. *Journal of Statistic Education*. Vol.3. No.2. Pg. 1-11

Marks, Jon. 2007. *E-Book. Check Your English Vocabulary for Computer and Information Technology: Third Edition*. Great Britain: A&C Black Published

Michaelsen, Larry K.,Knight, Arletta B.,Fink. L. Dee. 2004. *Team-Based Learning*. Stylus Publication.

Michaelsen, Larry. Michael Sweet. 2008. Team-Based Learning. *Journal National Education Association*. Vol. 25.No.6. Pg: 5-8

Permendikbud nomor 81A. 2 Juli 2013. Kurikulum 2013. Jakarta

PPS UNM. 2010. Pedoman Penyusunan Tesis dan Disertasi Program Pascasarjana Universitas Negeri Makassar. Makassar: Badan Penerbit UNM

Quinn, Courtney, Heath Harding, & Gina Matkin. 2011. Team-based Learning for Agricultural Ethics. *Nacta Journal*. Pg. 91-96

Rahman, M.Asfah. 2005. *Statistics: Course Material*. State University of Makassar: Faculty of Arts and Language.

Rezki Amalia *(2007).Teaching English Vocabulary through dialogue to the second year’s students of SMUN I Bajeng Gowa.* UnpublishedThesis of university of Muhammadiyah Makassar.

Rina (2005) *English song as teaching media for students' of the first year of SAP Frater Palopo.* Unpublished Thesis of State University of Makassar

Satriani, Yuni. 2010. *Enriching Students’ Vocabulary through Word Game (Scramble) at the first year students of SMK Negeri 3 Bau-Bau*. Unpublished Thesis. State University of Makassar.

Su, Allan Yen-Lun. 2007. The Impact of Individual ability, Favorable Team member scores, and Student perception of course importance on student preference of Team-Based Learning and grading Methods. *Journal Adolescence*, Vol.42, No.168. Pg: 805-826

Sugiyono, Prof. Dr. 2013. *Metode Penelitian Kuantitatif, Kualitatif, dan R&D*. Bandung. Alfabeta.

Taniredja, H. Tukiran., Faridli, Efi Miftha., Harmianto, Sri. 2013. *Model-Model Pembelajaran Inovatif dan Efektif*. Bandung: Alfabeta.

Tapi, Pius Lan. 2009. *The Effectiveness of word review in song in teaching vocabulary to the first year students of SMA Negeri 1 Palopo*. Unpublished Thesis. State University of Makassar.

Thompson, M.Britta, Virginia F Schneider, Paul Haidet, RuthE Levine, Kathryn K McMahon, Linda C Perkowski, & Boyd F Richards. 2007. Team-based learning at ten medical school: two year later. *Journal Medical Education*. Vol. 41. Pg: 250-257

Tirrell, Jane G. 2009. Team-Based Learning in Keck Graduate Institute’s professional Master of Boiscience programme. Journal of Commercial Biotechnology. Vol.15,No.2. Pg: 151-160.

Umble, Karl, DavidSteflen, Janet Porter, Deesha Miller, et al. 2005. The National Public Health Leadership Institute: Evaluation of a Team-Based Approach to Developing Collaborative Public Health Leaders. *American Journal of Public Health*. Vo. 95. No.2. Pg: 641-644.

***Searching in Internet:***

* Team Learning Collaborative, a public site developed as a team learning resource for medical educators, [www.tlcollaborative.org](http://www.tlcollaborative.org). 1 November 2013.
* Team-Based Learning, University of Oklahoma [www.ou.edu/idp/teamlearning. 1 November 2013](http://www.ou.edu/idp/teamlearning.%201%20November%202013).
* <http://teambasedlearning.apsc.ubc.ca/>
* [http://www.tlcollaborative.org](http://www.tlcollaborative.org/)