**THE APPLICATION OF CHALLENGE BASED LEARNING MODEL FOR HIGHER INSTITUTION STUDENTS**

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**Abstract**

This research is preliminary study on the application of Model Challenge Based Learning, a method of teaching Englishwhile solving a real challenge. As a preliminary study, this study concentrates on improving students’ capability by giving challenges to students. The study implements educational research development paradigm. This preliminary research involved 38 students concentrating on the students’ competence and performance. The results showed that there is a significant influence of Challenge-based learning to the fluency and accuracy students.

1. Introduction

The need of mastering English in the future has become one big challenge for higher education institutions as producers of quality man power in Indonesia and other countries in the world. If we want to win the global competition, we must equip our graduates with adequate capability of English to our graduates. Furtermore, adequate capability in English will assist students accomplishing their undergaruate qualification. Therefore, it is necasssary to upgrade English aducation system directed toward overall training of English to undergraduate students. This can be done through upgrading of approaches, the planning and execution of program which can fufill the students’ learning needs.

The most obvious obstacle is the restricted time allocated for face to face meeting betewen students and the teacher in the class often makes the English lesson become less effective. This happens particularly involving classes with English ability disperse among students. In higher education system that demands *active learning*, English teacher often find difficulties to help weaker students to level with the more able students. In fact, the target of learning English for higher education students is high enough i.e to make students have adequate capability in English, to be able to write academically in English as an international language. One of the attempts to fulfill tne learning needs is by optimizing all potentials students have. For instance, by making use of information technology, optimizing the use of internet to gather learning materials specified to department and field of studies.

The proposed study is an attempt to assist higher education students to improve their ability in English with limited time of learning English in classroom athmosphere. The propoposed learning activities is called Challeged Based Learning a learning activitity which combines the learnig athmosphere and learning challenges to solve a learning situation problem.

1. **What is Challenge Based Learning**

Challenge based learning (CBL) is a frame of thinking of learning while solving a a real challenge. CBL is a frame of learning while solving a real challenge. CBL is a learning model invented by Apple company which promoted academic classes as a **tnink thang** which solve genuine problems. CBS is almost similar to place based aducation and project based learning as a tool and medium of learning.

Apple company defined CBL as a multi discipline approach to reaching and learning which support learners to make use of technology which they use in daily life to solve real problems in daily lifes. The frame work of the system is collaboraive work and ready work, asking all participants (students, teacher, family, and members of society) to identify great ideas, asking good questions, finding and solving challenges,obtaining subject area knowledge, developing 21 century, and share their knowledge to the world..

The framework of challenge-based learning was stated from the project of "Apple Classrooms of Tomorrow—Today" (ACOT2) initiated by Apple Inc company which identified environment design leaning principle for the 21 century. Started with the basic design of ACOT2, a team from Apple, Inc.work together with educational experts working together to develop dan implemented challenge-based learning

Challenge-based learning contain

1. A flexible framework and capable of customized applicable to as pedagogic guidance integrated to progressive learning approaches.
2. A model that can be scaled with multiple points of entry and is able start something big. ,
3. A free and open sytem without prpriety ideas, products and subcription. A process that places all Learners in charge, and responsible for the learning.
4. An authentic enviroment to fulfiil academic standard dan create a more deep and content
5. Focusing on global ideas, meaningful challenge and developing appropriate solutions.
6. A pure relationship between academic discipline and real world experience.
7. A framework to develop 21 century skills.
8. The use of precise technology in terms of research, analysis, organisation, collaboration, networks, communication, publication, and reflection.
9. A system to document and access both processes and products.
10. An environment which reflects deeply toward teaching and learning.

The framework of Challenge Based Learning begun from "Apple Classrooms of Tomorrow—Today" (ACOT2) project initited by Apple Inc.Project in 2008.. Started with the early draft of learning environment ACOT2 a team from Apple Inc work together wit educaators began to develop, working together with educators to develop and implement challenge-based learning.

Using the word challenge in arranging learning experience coming from from challenge and learning experience and reflection coming from inside and outside classroom. When faced challenge groups or individuals who are successfull to make use of individual experiences, make use of resources in order to develop plans, and move forward to find the best and move forward to find best solutions solutios on the problems faced. Along with the on going activities, there might be try outs, failures, and success as the products of what has been done. By adding challenge for educational environment, the outcome is superiority, wish, and ownership-the element the often missed fron school situation.

The first framework was documented in the white book written in 2008 published by Apple Inc. (Nichols and Cator, 2009). Ever since teachers and schools all over the world began to adopt the framewrk to improve the learning and teaching while giving opportunity for students to make differences in their society.

In 2011, a follow up study was conducted to test if the framework works when appled to the public of k-20 which is larger and to test deeper the 21 century skills. This research involved 19 schools, 90 teachers and 1500 students from three countries. Once again this study shows that is an effective way to involve students fulfill curriculum standard, and to get 21 century skills. This research also concludes that CBL can be used to students from all ages.(Johnson and Adams, 2011).

In 2016 Apple Inc. was involved in [Digital Promise](https://en.wikipedia.org/wiki/Digital_Promise%22%20%5Co%20%22Digital%20Promise), and the team member who created to renew the content and managing website and created books (Nichols, et al., 2016).

The renewed framework was organized in three year planning phases

* Engage – Along the process, students’ essential questions move from abstract big ideas moving toward concrete challenges dan applicable.
* Investigate – All students are involved in planning and taking part inthe journey to build solution foundation and deveop academic qualification..
* Act – Solution based on proofs that are developed, iimplemented to real audience, and evaluated based on products.

Throghout all of the processes the participants are expeced to document all experiences, reflected in the practice and sharing experiences to all audiences. All CBL have been widened into new areas which involve strategic planning, working practice in situ, (O'Mahony, et al., 2012), and development of mobile software instruction (Santos, et al., 2015).

1. **The Method**

The study implements educational research development paradigm (Gravemeijer, 1999). The outcomes of the study are highly qualified products in terms of theoretical, procedures and methodologically.

Research and development is a strategy of developing effective educational products. Educational research and development is an industry based on model development in which research inventories are used to develop products and new procedures sytematically developed and periodically is tried out, evaluated, and revised until the standar crieria and quality achieve certain criteria or standard. (Gall, Gall and Borg, 2003).

The steps of development proces refer the research and development cycles consist of studying research inventories related to the on going developed products, developing products based on research inventories, field try outs witn designs similar to where the products are appled, revising the product to improve the deficiencies found in the field. This is done, because, according to Borg (1979), the intention of research and development is to bridge the gaps often encountered between educational research and educational field practices.

The main steps of research and developmental research are:

 (1). Literature study

(2). Planning

(3). Developing early models of productd theoritical model/hypothesis)

(4). Field try ours 0f early productsl

(5). Revision of early products to produce maind products

(6). Try out of main pruducts

(7) Revision of main product to produce empirical operational products

(8). Field try outs of operasional products

(9). Revision of opersional products to produce end products

(10). Diseminassion and distribution of end products (Gall and Borg, 2009).

After the first phase research finished, the second phase research started, i.e. the production of teaching learnig materials of English with Challenge based learning for higher education students based on Challenge based learning through the following steps:

* 1. Produing English learning materials Challenge based learning.
	2. Try out of Uji Challenge based learning materials
	3. Revision of learning materials
	4. Inplementing English learning materials Challenge based learning

In this report the application of Challenge based learning.was a preliminary research before the real research was implemented thoroughly.

1. **Results and Discussion**

Student's English competency is obtained through written test provided before and after the implementation of Challenge based learning. Table 1 below illustrates the students' descriptive statistics.

Tabel 1: Descriptive statistics of students’ English competence

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|  |
|  | N | Mean | Std. Deviation | Std. Error Mean |
| Pretst | 38 | 70,3750 | 6,26303 | ,66764 |
| Postst | 38 | 73,5455 | 5,99216 | ,63877 |

Tabel 1 shows the average score of the students on the pretest of 70.37 with the deviation stand of 8.25 and the mean of the postest 73.64 with the deviation of 5.95. To determine whether there is a significant difference between the mean score of pretest-posttest, a t- test was conducted with the following result

Tabel.2 The result of t-tes on pretest-postest

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|  |
|  | Test Value = 0 |
| T | Df | Sig. (2-tailed) | Mean Difference | 95% Confidence Interval of the Difference |
| Lower | Upper |
| Pretst | 105,408 | 37 | ,000 | 70,37500 | 69,0480 | 71,7020 |
| Postst | 115,137 | 37 | ,000 | 73,54545 | 72,2758 | 74,8151 |

Table 2 shows the comparison between the English students' ability to test students before and after the implementation of the Challenge based learning . T test shows the value of T at the pretest of 106.408 and the postda pda of 116.137. The difference between these values are significant at the 0.001 level. This means that there is a significant difference between the competence or competence of the students before and after Challenge Based Learning implementation.

**Student performance**

Student performance is the ability of students to express their ideas in English orally. The student's oral skills include aspects: pronuncition grammar, vocabulary, fluency, and comprehensibility. These five aspects are summarized into an overall verbal ability (overall.).

Table 3 describes the descriptive statistic of students' oral ability from the initial ability (pretest).

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| **Tabel 3 Descriptive Statistics students’ performance at pretest** |
|  | N | Minimum | Maximum | Mean | Std. Deviation |
| Vocab | 38 | 2,00 | 4,00 | 2,8864 | ,56082 |
| Pronun | 38 | 2,00 | 4,00 | 2,7557 | ,56728 |
| Gramr | 38 | 2,00 | 4,00 | 2,8466 | ,57913 |
| Fluency | 38 | 2,00 | 4,00 | 2,8466 | ,59383 |
| Compreh | 38 | 2,00 | 4,00 | 3,0909 | ,58006 |
| Overal | 38 | 55,00 | 100,00 | 72,1307 | 10,14648 |
| Valid N (listwise) | 38 |  |  |  |  |

From the result of oral performance test of English, it was found out that for pronunciation aspect, the lowest value was 2 and the highest score was 4. While the average value 2,76 (sd = 0,55). For the vocabulary aspect, the lowest score was 2 and the highest score was 4. The mean value of are 2,88 ( sd = 0,55). For grammar aspect the lowest value was 2 and the highest value was 4 with an average value of 2.84. For the fluency aspect, the highest value was and the highest was 4 with an average value of 2.84 sd = 0.59. For aspects of comprehensibility (comprehensibility), the lowest score was 2 and the highest score 4 with an average 3.08 ( sd = 0.58).

In total, the average oral ability obtained by studets is 72,1307, sd = 12,14. This means that the average oral ability of the students before being given a challenge-based learning is quite high.

Table 4 describes the descriptive statistic of students' oral ability of the final ability (postest)

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| **Tabel 4 Descriptive Statistics of student performance post test**  |
|  | N | Minimum | Maximum | Mean | Std. Deviation |
| vocab2 | 38 | 2,00 | 4,00 | 3,0511 | ,55211 |
| comp2 | 38 | 2,00 | 4,00 | 3,0006 | ,49772 |
| flu2 | 38 | 2,00 | 4,00 | 2,9261 | ,53358 |
| pron2 | 38 | 2,00 | 4,00 | 2,9310 | ,50677 |
| gram2 | 38 | 2,00 | 4,00 | 2,9489 | ,46757 |
| overal2 | 38 | 57,50 | 90,25 | 74,3707 | 6,85023 |
| Valid N (listwise) | 38 |  |  |  |  |

From the result of oral competence test of English students it is known that for the pronunciation aspect the lowest value was 2 and the highest value was 4, with the average score was 2.93 (sd=0,50). For the vocabulary aspect, the lowest score was 2 and the highest score was 4, the mean score was 3.05 (sd = 0,55). For the grammar aspect the lowest score was 2 and the highest score was 4 with a mean score of 2.94. For the fluency aspect, the lowest score was 2, th highest score was 4 with an average value of 2.92 (sd=0.53). For the aspects of comprehensibility, the lowest score was 2 and the highest score 4 with a mean score of 03.00 (sd = 0.49).

In total, the average oral ability obtained by the students was 74.37 (sd = 6.85). This means that the average oral competence of students before being given a challenge based learning was quite high.

1. **Conclusion**

From the results and discussion, it can be concluded that:

a) There is a significant influence of Challenge-based learning to the fluency and accuracy of English students in the University of Lampung. This is evident from the significant differences between the ability of students before and after following the English language learning through Challenge-based learning

b). Students' responses to English learning before and after Challenge-based learning are very positive. This is evident from the responses of students to the questionnaire given or written responses of students in the form of essays.

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