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# The Effect of Challenge-Based Learning on the Mastery of Discourse Analysis Subject

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**Abstract:** The objectives of this study are to investigate whether Challenge-Based Learning can improve the mastery of Discourse Analysis subject at the English study Program of the University of Lampung, and to investigate the factors that significantly influence the mastery of Discourse Analysis subject taught through Challenge-Based Learning at the English study Program of the University of Lampung. This study used quasi-experimental research design. The subjects of this study were students enrolled as participants at 'Discourse Analysis' subject at the Universitas Lampung. In this case, the students served both as the population and sample of the study. The results show that there was a significant difference of students' achievement in three challenge-based learning activities. Challenge 1 (read, write, and present) got better result of learning compared to Challenge 2 (read, relate, present). There was no significant difference between Challenge 2 and Challenge 3 (read, illustrate, present, and argue), while there was a significant difference of achievement between Challenge 1 and Challenge 3.

**Key Words:** Challenge Based Learning, mastery, Discourse, EFL

## I. INTRODUCTION

The current study tried to analyze the mastery of discourse analysis in one semester program. The study applied a quasi-experimental research technique to analyze the students' mastery of the subject using three different learning blocks called challenge-based study program. This program was firstly introduced by Apple Company (Nichols and Cator, 2009). The framework of the system is collaborative 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 the 21<sup>st</sup> century, and sharing their knowledge to the world.

Discourse analysis is the examination of language use by members of a speech community. It involves looking at both language form and language function and includes the study of both spoken interaction and written texts. It identifies linguistic features that characterize different genres as well as social and cultural factors that aid in our interpretation and understanding of different texts and types (Demo, 2001). Discourse analysis is studied by higher education students majoring in language teaching including by the students of the English study program at the Universitas Lampung. This is a 3-credit subject offered by the institution.

The study aimed to:

- a. investigate which Challenge-Based Learning improve the mastery of Discourse Analysis subject at the English study Program.
- b. investigate the factors that significantly influence the mastery of Discourse Analysis subject taught through Challenge-Based Learning at the English study Program.

## II. FRAME OF THEORY

There are two concepts discussed in this study. The first is the concept of discourse analysis as the main concern of the study. Discourse analysis is treated as a branch of knowledge that studies the written and oral language according to the nature of language and as a subject learned by students majoring in language studies. The second concept is the application of Challenge Based Learning as applied in general studies of knowledge and sciences.

### a. Discourse Analysis

Discourse analysis or discourse study is a general term for a number of approaches to analyze written, vocal, or sign language use, or any significant semiotic event. The objects of discourse analysis (discourse, writing, conversation, communicative event) are variously defined in terms of coherent sequences of sentences, propositions, speech, or turns-at-talk. Contrary to much of traditional linguistics, discourse analysts do not only study language use 'beyond the sentence boundary' but also prefer analyzing 'naturally occurring' language use, instead of the invented examples. Text linguistics is a closely related field. The essential difference between discourse analysis and text linguistics is that discourse analysis aims to reveal socio-psychological characteristics of a person/persons rather than text structure (Gee and Green, 1998).

Discourse is the creation and organization of the segments of a language above as well as below the sentence. It is segments of language which may be bigger or smaller than a single sentence, but the adduced meaning is always beyond the sentence. The term discourse applies to both spoken and written language, in fact to any sample of language used for any purpose. Any series of speech events or any combination of sentences in written form wherein successive sentences or utterances hang together is discourse. Discourse cannot be confined to sentential boundaries. It is something that goes beyond the limits of sentence. In another words, discourse is

‘any coherent succession of sentences, either spoken or written’ (Matthews, 2005:100).

Discourse analysis is also defined or described as the study of ‘language in context’ or (real life) ‘language in use’ (Brown and Yule 1983, Woods 2006); thus it draws students to the investigation of socially-situated texts and talk. Students engage with the study of how, in social interaction, human beings convey their meaning as a result of dynamic and ongoing negotiation with their interlocutors instead of as an individualistic enterprise. In this way, students gain knowledge and understanding of the (symbolic) function of language in social life, and the role that language plays in the construction and shaping of social relationships. Teachers can use discourse analysis not only as a research method for investigating their own teaching practices but also as a tool for studying interactions among language learners. Learners can take benefits from using discourse analysis to explore what language is and how it is used to achieve communicative goals in different contexts.

#### b. *Challenge-Based Learning*

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<sup>st</sup> century (Johnson and Adams, 2011). Started with the basic design of ACOT2, a team from Apple, Inc. collaborates with educational experts to develop and implement challenge-based learning (Nichols and Cator, 2009).

Challenge-based learning is:

1. A flexible framework and is capable of customizing application to as pedagogic guidance integrated to progressive learning approaches.
2. A model that can be scaled up with multiple points of entry and is able to start something big.
3. A free and open system without propriety ideas, products and subscription. A process that places all Learners in charge, and responsible for the learning.
4. An authentic environment to fulfill academic standard and create deeper 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. Using precise technology in terms of research, analysis, organization, 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.

In 2016, Apple Inc. was involved in Digital Promise, and the team member were created to renew the content, manage website, and write books (Nichols, et al., 2016).

The renewed framework was organized in three-year planning phase

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

Throughout all of the processes, the participants are expected to document all experiences, reflected in the practice and sharing experiences to all audiences. CBL has 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).

### III. METHOD

This study applied quasi-experimental research design, which is like experimental designs, testing causal hypotheses. In both experimental (i.e., randomized controlled trials or RCTs) and quasi-experimental designs, the program or policy is viewed as an ‘intervention’ in which a treatment – comprising the elements of the program/policy being evaluated – is tested for how well it achieves its objectives, as measured by a prespecified set of indicators (White and Sabarwal, 2014). In this case, the subjects of the research were the students enrolled as participants at ‘Discourse Analysis’ subject at the Universitas Lampung. They served both as the population and sample of the research.

The main steps of the research are:

#### 1. *Data collection phase*

The data collection is adjusted to the type of data collected. The steps in collecting data include:

##### *Library study*

Library study or secondary data collection is conducted to gain conceptual and empirical bases related to the research and the rules of the study.

##### *Institutional Data/Secondary Data*

Institutional data/secondary data are data or information obtained from institutions related to the research. The data will be obtained through:

##### *Interviews and questionnaires*

The primary data are obtained by applying the main research instrument. Observation

Observation is conducted by directly observing the achievement and the English learning processes at the research sites.

## 2. Data Compilation

Data compilation is used to facilitate data analysis. It is conducted with cross tabulation and computerization suitable to the data collected.

## 3. Data analysis

Data analysis is conducted to find out the symptoms and phenomenon that exists during the data collection phases.

### Reporting phase

During the process of arranging the report, a process of teaching and learning of English kept running at the research sites until the researcher obtained a standard quality of teaching and learning processes.

The subjects were the third-year students majoring in teaching English as second/foreign language. They took Discourse Analysis subject with 3-credit load. The subjects were 25 students of the English Study program, consisting of 17 female and 8 male students. The subjects were the sixth semester students enrolled at Discourse Analysis aged 19-21-years-old.

The research procedures are as follows:

Students attending the session were divided into three big sessions. Session 1 consisted of three meetings. The technique applied for session 1 was lockstep technique, in which the lecturer had students to listen and take note. Session 1 ended with test 1. Session 2 was the application of challenge-based learning where students were divided into presenter group and audience group. The presenter groups were assigned to write and present a paper. The listener groups were assigned to ask questions. Session 2 ended up with test for the block. Session 3 was the application of challenge-based learning with seminar session and challenge from audience. Session 3 ended up with test 3.

## IV. RESULTS AND DISCUSSION

This research was accomplished within two extreme situations. The first one is the normal situation where the teaching learning processes were done in normal situation. Meanwhile, the second situation was done under the spread of the pandemic COVID 19. Under the normal situation, students learned normally in face to face meetings. Lecturers delivered the subjects in four meetings and examination was administered at the end for the block. The Covid 19 outbreak at the second session or the sixth normal meeting and consequently change the overall plan for rest of the program. There were no face to face meetings, and the lecturers and students worked separately. Meeting number 6, 7, 8, 9, and 10 were scheduled to be used for the application of challenge-based learning model 1, i.e. the students were divided into presenter group and challenger group. The presenter groups

were supposed to present the topic assigned and the rest challenged the idea. The materials covered for the second round included Meeting 6: Deixis and Reference. In this step, the application of Challenge-Based Learning began.

Meeting 7: Reference, familiarity, and givenness

Meeting 8: Centering and discourse structure

Meeting 9: Test of this block

In its application, the students were divided into presenter group and challenger groups. The presenter group prepared complete writing of the topic they were assigned. For instance in the first meeting, they discussed within their group and prepared the paper for presentation. The other group challenged the presentation by asking unclear point and exposing challenge to the ideas. This process went on until the class got clear point of presentation.

The complete results of this study are presented in the following table:

Table 1: Descriptive Statistic Analysis from the challenge-based learning

Statistics				
		RWP	RRP	RIPA
N	Valid	25	25	25
	Missing	0	0	0
Mean		74,8000	60,8000	74,4800
Std. Deviation		6,11010	6,13732	6,83813
Sum		1870,00	1520,00	1862,00

Table 1 shows that the students' mean score in the first round was 74.8 with a standard deviation (SD) of 6.11. In the second round of the activities, the mean score was 60.8 with an SD of 6.13. Meanwhile, the third block of presentation indicated that the students' mean score was 74.48 and SD of 6.83.

The following table summarizes the correlations among the three challenge-based learning performances.

Table 2: Paired Samples Correlations				
		N	Correlation	Sig.
Pair 1	RWP & RRP	25	.240	.248
Pair 2	RWP & RIPA	25	.682	.000
Pair 3	RRP & RIPA	25	.562	.003

Table 2 shows the comparisons between RWP and RRP, between RWP and RIPA, and between RRP and RIPA. The result of the comparisons shows that there was no significant difference in students' performances in RWP and RRP.

The following table shows multiple comparisons among students' oral performances in three sets of challenge tests. The table reveals that there was a significant difference in the students' performances between students' oral performances

in RWP and RRP with the t-value of 9.27. There was no significant difference between students' oral performance in RRP and RIPA. The data also show that there was a

significant difference between students' oral performances in RWP and RIPA with the total value of 11.2.

		Paired Differences			t	Df	Sig. (2-tailed)
		Mean	Std. Deviation	Std. Error Mean			
Pair 1	CB1 - CB2	14.00000	7.54983	1.50997	9.272	24	.000
Pair 2	CB1 - CB3	.32000	5.20993	1.04199	.307	24	.761
Pair 3	CB2 - CB3	-13.68000	6.10137	1.22027	-11.211	24	.000

#### *The effect of Gender on the three challenge-based learning activities*

This study also investigated the effect of gender on students' performance in three challenge-based learning activities. The

table reveals that in RWP there was a significant correlation between the students' performance and gender with an F value of 11.32. Test 3 and gender differed significantly with F value of 0.063.

		Sum of Squares	Df	Mean Square	F	Sig.
CB1	Between Groups	295.627	1	295.627	11.325	.003
	Within Groups	600.373	23	26.103		
	Total	896.000	24			
CB2	Between Groups	92.571	1	92.571	2.624	.119
	Within Groups	811.429	23	35.280		
	Total	904.000	24			
CB3	Between Groups	159.581	1	159.581	3.813	.063
	Within Groups	962.659	23	41.855		
	Total	1122.240	24			

## V. DISCUSSION

There are four most important findings from the study. The first one is that there was a significant difference of students' achievement in three challenge-based learning activities. Challenge 1 was coded as read, write, present (RWP) challenge, challenge 2 was called read, relate, present (RRP) challenge, and challenge 3 was then called read, illustrate, present, and argue (RIPA) challenge. Students' achievement in RWP challenge differed significantly from students' achievement in RRP challenge. There was no significant difference in students' achievement in RRP challenge and RIPA challenge, but there was a significant difference in students' achievement through challenge based RRP challenge and RIPA challenge. This result shows different performances the students revealed in accomplishing the challenges. RWP challenge is an activity that the students often accomplish in their daily activities. As adult students, they have been got accustomed to read in their own and write

what they have read. They began to get confused when they faced the second challenge where they had to relate the content of the subject matter to the real world. Their performances in challenge 1, where the students only faced the obstacle from their own ability, superseded the challenge to read and relate to the real world. RWP challenge did not show significant difference with RIPA challenge, while RRP challenge differed significantly from RIPA challenge.

The challenge-based learning works in three conditions:

- *Engage*: Along the process, students' essential questions move from big abstract ideas toward concrete challenges and applicable ideas.
- *Investigate*: All students are involved in planning and taking part in the journey to build solution foundation and develop academic qualification.



- 1. Act: Solution based on proofs that are developed, implemented to real audience, and evaluated based on products (Nichols, et al., 2016).

The challenge applied in this research was a simple form of learning at the university level. It challenged students to comprehend the concept of discourse analysis by applying three different challenges. The results show that students performed high capability when they were assigned a task that required simple activities. Meanwhile, they performed worse when they were assigned a new challenge but their performance got better performance when the students got used to the challenging activities.

Moreover, Nichols, et al. (2016) stated: "A challenge is immediate and actionable. Choosing and setting up the challenge is crucial. If it is interesting and sufficiently close to home, students will derive personal meaning and feel a sense of accomplishment upon proposing and implementing a solution." The challenge designed for the study has shown that students could respond to the challenge assigned as expected. Challenge assigned to routine job will result in better result than new jobs.

## VI. CONCLUSION

The conclusions that can be drawn from this study are as follows:

1. Challenge-Based Learning worked successfully in the teaching of Discourse Analysis subject for adult students at the Universitas Lampung. Based on the results of the current study, there was a significant difference of students' achievement in three challenge-based learning activities. There was a significant difference between the students' achievement in three challenge-based learning activities. Students' achievement in RWP challenge differed significantly with students' achievement in RRP challenge. There was no significant difference in students' achievement in RRP challenge and RIPA challenge, but there was significant difference in students' achievement through RWP challenge and RIPA challenge. These results show different performances in accomplishing the challenges.
2. Gender made a significant difference in the application of RWP Challenge and made significant effect on the application of RRP and RIPA challenges. However, the challenges did not show

that male students made significant effect on the basis of students' learning objectives.

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