

THE EFFECT OF TASK REPETITION ON COMPLEXITY, ACCURACY, AND FLUENCY OF INDONESIAN MARITIME VOCATIONAL SCHOOL STUDENTS' SPEAKING PERFORMANCE

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Abstract

Developments in the area of task-based language teaching (TBLT) research have focused on the task implementation factors in that they effectively promote successful language performances. The present study aimed to examine the effect of task repetition on the speaking performances of students who studied English Specific Purposes at an Indonesian Maritime Vocational School. To this end, a pre- and post-test quasi-experimental design was applied that involved 43 participants, who were non-randomly selected and considered as two groups of the experimental and control ones. Both groups took a pre-test to ensure their homogeneity in speaking skill. For 12 sessions, the experimental group was engaged in repetitive practice of speaking tasks. Three weeks after the end of the treatment, both groups performed the two post-tests. The results of independent samples t-tests showed that the experimental group significantly outperformed their counterparts in the control group in terms of task complexity on the two post-test phases ($p < .05$). However, they did not differ significantly in terms of accuracy.

Keywords: *Accuracy, Complexity, Fluency, Speaking Performance, Task repetition*

INTRODUCTION.

Speaking skills are an essential part of second language learning and teaching (Kayi, 2006). Speaking can be improved by a variety of individually based practices and collectively-oriented techniques through the media of games, role play, representation, etc. Given some experiments, speaking can be enhanced by incorporating group work activities (Oradee, 2012) and drawing learners' attention to some types of speaking performances that can

have conclusive impacts on improving their speaking skill (Brown, 2007). Richard and Rodgers (2001) pointed out that speaking and communicating with others through the spoken language using learner's already existing linguistic and communicative resources is viewed as the basis for second language acquisition in Task-based Language Teaching (TBLT); therefore, a great deal of tasks that are proposed in TBLT involve conversation. Over the last two decades, the TBLT has played a vital role in teaching English and has continued to attract the attention of language teachers and researchers (Ellis, 2003; Long, 2015). In task-based language teaching, syllabus content and instructional processes are selected with reference to the communicative tasks in which language learners need to engage in and outside the classroom; also with reference to the approaches and empirical insights into those social and psycholinguistic processes which facilitate language acquisition.

As Skehan (1998) states, a communicative task is an activity in which, (a) meaning is primary, (b) there is some sort of relationship to real world tasks (c) task completion has some sort of priority, and (d) assessment of task performance is determined in terms of task outcomes. Similarly, Nunan (1998) believes that a task is a classroom work that engages learners in completing, manipulating, producing, or interacting in the target language while the attention is focused on meaning rather than on form. Therefore, behind every task there is a set of learning opportunities

and potential activities for learning. ESP teachers can make use of different tasks as teaching different materials in their classrooms. Using tasks would be beneficial in teaching and assessing speaking performance, too. Creating a new and different situation for language learners, communicative tasks will help them use their abilities to solve language problems in doing tasks; hence language learning experience would be easier and more interesting (Nunan,1998).

Thus far, a lot of studies have been done to investigate two components of speaking including accuracy and complexity as dependent variables based on task-based instruction, and their variation have been assessed with respect to independent variables such as acquisitional levels or task features, the most notable of which have been shown by Hilton (2008), Larsen-Freeman (2006), and Tonkin (2007). To the knowledge of the researchers, however, few studies have addressed this issue in Indonesia so far. Worded differently, there exist few Indonesia studies to have concentrated on the impact of task variation on the two features of speaking, including accuracy and complexity.

The three models of task variation (dialogue unscrambling, group dialogue, and dialogue completion tasks) are as practical tasks which are frequently used in ESP speaking classes at pre-intermediate and intermediate levels. These tasks and their

potential interaction on oral speech accuracy and complexity have not been investigated thoroughly in the Indonesian context yet.

The ESP learners feel more daunting while practicing speaking because they need to interact in their discipline-related community of practice. At the time, if we consider writing in an ESP context as a disciplinary phenomenon it is inevitable to think of a number of factors imposing challenges to this context and making writing a complex issue for the students. Among these factors one can mention the effect of topical knowledge (He & Shi, 2012). Topical knowledge which is defined by Alexander, Schallert, and Hare (1991), as “the interaction between one’s prior knowledge and the content of a specific passage” (p. 334) is another reason for complexity of language learning. Topical knowledge may have a great influence in language use (Bachman & Palmer, 1996).

To achieve the purpose of this study, the following questions are formulated:

1. Does using task repetition have any significant effect on the complexity of Indonesian Maritime Vocational School students’ speaking performance?
2. Does using task repetition have any significant effect on the accuracy of Indonesian Maritime Vocational School students’ speaking performance?

3. Does using task repetition have any significant effect on the fluency of Indonesian Maritime Vocational School students' speaking performance?
4. Are there any relationships between the complexity, accuracy and fluency of Indonesian Maritime Vocational School students' speaking performance?

LITERATURE REVIEW

The ultimate goal of research in second and foreign language acquisition is to achieve native-like speaking ability. Complexity, accuracy, and fluency have been considered to be the three key aspects of language production (Ellis, 2009). It is generally assumed that a proficient language speaker should have the ability to perform tasks fluently and accurately, using complex language. As suggested by Skehan (1996), improving these three main areas is thus a core goal of language instruction.

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Complexity

Skehan (1996) states that complexity relates to the stage of elaboration of the underlying interlanguage system. Similarly, Ellis (2005) defines complexity as the capacity to use more advanced language. Ellis and Barkhuizen (2005) explain that elaborate language can be conceived of in two different senses: first, as the cutting edge of the development of the learner's language, and thus

the part that is not yet fully automatic; and second, as the learner's readiness to use a wide range of linguistic structures. They state that complexity is a function of the learner's eagerness to try out new linguistic knowledge in oral performance.

Accuracy

Accuracy is perhaps the simplest coherent construct, referring to the degree of conformity to correct and error free norms. Skehan (1996) defines accuracy as the capacity of the learner to handle whatever level of interlanguage complexity he or she has currently attained. As the language learner works towards producing language more accurately, he or she is seeking control over the linguistic elements that he or she has already learned; thus Ellis (2005) states that accuracy can be defined as the ability to avoid errors in performance, possibly reflecting higher levels of control in the language and/or a conservative orientation.

Fluency

Skehan (1996) states that fluency concerns the learner's capacity to mobilize an interlanguage system to communicate meaning in real time. Fluency can be defined also as the production of language in real time without undue pausing or hesitation (Ellis & Barkhuizen, 2005). Ellis (2005) defines fluency as the capacity to use language in real time, to emphasize meanings, possibly drawing on more lexicalized systems. Tavakoli and Skehan (2005) argue that fluency can be seen as a construct, with sub-dimensions such as breakdown fluency, repair fluency, and speed fluency.

Skehan (1996) states that complexity relates to the stage of elaboration of the underlying interlanguage system. Similarly, Ellis (2005) defines complexity as the capacity to use more advanced language. According to Ellis and Barkhuizen (2005), this elaborated language can be conceived of in two different senses: first, as the cutting edge of the development of the learner's language, and thus the part that is not yet fully automatic; and second, as the learner's readiness to use a wide range of linguistic structures. They state

that complexity is a function of the learner's eagerness to try out new linguistic knowledge in oral performance.

RESEARCH METHOD

Participants

This study was carried out with 43 participants, 8 females and 35 males in two intact classes. Their ages ranged from 15 to 17. Each class was assigned to an ESP materials namely new ESP materials class (n=23) and available materials class (n=20). All participants were the first grade of Merchant Ship Nautical program in SMK Pelayaran Putra Samodera, Indonesia.

Data Collection and Instruments

This study is a randomized groups pre-test-post-test-follow-up design. Although the students were not randomly assigned to the experimental and control group, the classes were. The maritime English learning materials were implemented in 12 weekly lessons of 45 minutes each. The lessons were given on a weekly basis in the period September 2019 through December 2019. Pre-test data on speaking skills was collected during a week, starting in September 2019. Post-test data on the same variable was collected 3 months later, right after the treatment. All measures were group-administered to students in the experimental and control groups by the first author. Data were collected and analyzed by means of standardized tests.

FINDINGS AND DISCUSSION

As said before, this study was designed to investigate the effect of dynamic assessment on the students' oral productions in terms of complexity, accuracy, and fluency. Moreover, this research aimed to consider if there was any relationship between the three aspects of complexity, accuracy and fluency of Indonesian Maritime Vocational School students' speaking performance and their overall oral proficiency scores. Finally, this research aimed to consider if the six measures used in the present research truly

represent the three distinct components of complexity, accuracy, and fluency. To achieve these aims, the quantitative data were collected. The research questions, previously formulated in introduction section, are reiterated and answered in order. This section explains the data treatment for each of the instruments employed in this study and presents the responses from each of the instruments. Results of analysis will be reported for each research question. In each part the data will be displayed, the hypotheses of the study will be tested, and the results will be stated. Table 1 shows the descriptive statistics of the study.

Table 1: Descriptive Statistics

Factors	N	Mea n	Min	Max	Rang e	SD	Varianc e	Sum
Oral proficiency	4	74.1	67.0	82.0	15.00	4.46	19.93	3262.0
	3	4	0	0				
Complexity No of	4	7.59	5.00	11.0	6.00	1.93	3.74	334.00
Verb Forms	3			0				
Complexity	4	1.23	1.01	1.59	.58	.18	.03	54.12
Clauses/Subordinatio n	3							
Accuracy Error-Free	4	76.0	61.8	96.4	34.64	10.6	114.01	3347.7
Clauses	3	8	0	4		8		
Accuracy Use of	4	70.2	54.0	92.3	38.38	10.5	111.19	3092.4
Target-like Verbs	3	8	0	8		4		
Fluency Syllabus/Min	4	54.2	40.9	64.4	23.50	6.29	39.61	2386.0
	3	4	5	5				
Fuency Meaningful	4	50.7	37.3	61.1	23.79	6.42	41.27	2232.4
Syllables/ Min	3	5	3	2				

The effect of task repetition on the complexity of Indonesian Maritime Vocational School students' speaking performance. The first research question addressed the effect of task repetition on complexity of Indonesian Maritime Vocational School students' speaking performance.

In response to this question, hypothesis one was formulated which will be examined in this section.

Hypothesis 1: Task repetition does not have any effect on the complexity of Indonesian Maritime Vocational School students' speaking performance.

In order to investigate the first hypothesis, independent samples t-tests were conducted between the two experimental and control groups. The minimum alpha for confirmation of the research hypothesis was .05. The mean scores and standard deviations of the two groups with respect to the two complexity measures (total number of different grammatical verbs and ratio of clauses to amount of subordination) are presented in Table 2. Additionally, t-tests results are demonstrated in Table 3.

Table 2: Descriptive of independent samples t-tests for complexity measures

Factors	Group	N	Mean	Std.Deviation	Std.Error Mean
Complexity No of Verb Forms	Control Group	20	6.8000	2.04167	.45653
	Experimental Group	23	8.2500	1.59483	.32554
Clauses/Subordination	Control Group	20	1.1260	.13721	.03068
	Experimental Group	23	1.3167	.16584	.03385

Table 3: Independent samples t-tests for complexity measures

		F	Sig.	T	Df	Sig. (2-tailed)	Mean Difference	Std. Error or Difference
Complexity Verb Forms	Forms	.67	.41	-	42	.011	-1.45000	.54821
	Equal variances assumed	3	6	2.645				
	Equal variances not assumed			-	35.626	.014	-1.45000	.56071
					86			

Complexity	Equal	4.3	.04	-	42	.000	-.19067	.04649
Clauses/Subordin	varianc	63	3	4.1				
ation	es			01				
	assum							
	ed							
	Equal			-	42.0	.000	-.19067	.04569
	varianc			4.1	00			
	es not			73				
	assum							
	ed							

The results of the T-tests, illustrated in Table 3, showed that there were statistically significant differences ($p < .05$) between the control and experimental groups, regarding the two complexity measures. As illustrated in Table 3, the mean score of the first complexity measure i.e., total number of different grammatical verbs ($M = 8.25$) was statistically higher in the experimental group. In addition, Table 2 reported that the mean score of the second complexity measure i.e., ratio of clauses to amount of subordination ($M = 1.32$) was also statistically higher in the experimental group. Therefore, the obtained results showed that both measures of complexity were greater in the experimental group, indicating that experimental group resulted in more complex oral production. Thus, based on these results the first null hypothesis predicting that task repetition does not have any effect on the complexity of Indonesian Maritime Vocational School students' speaking performance is rejected.

The effect of task repetition on the accuracy of Indonesian Maritime Vocational School students' speaking performance. The second research question tried to investigate if the task repetition has any effect on the accuracy of Indonesian Maritime Vocational School students' speaking performance. Subsequently, the second null hypothesis was made in reply to this question.

Hypothesis 2: Task repetition does not have any effect on the accuracy of Indonesian Maritime Vocational School students' speaking performance.

In order to examine the second hypothesis, two independent samples t-tests were carried out on each accuracy measure in order to determine for which measures differences reached significance. At first the descriptive data for the two accuracy measures are displayed in Table 4. Similarly, summary of the results from the t-tests is displayed in Table 5.

Table 4: Descriptive of independent samples t-tests for accuracy measures

Factors	Group	N	Mean	Std.Deviation	Std.Error Mean
Accuracy	Control Group	20	72.4105	10.30653	2.30461
Error-Free	Experimental	23	79.1458	10.19193	2.08042
Clauses	Group				
Accuracy Use	Control Group	20	66.4585	9.57234	2.14044
of Target-like	Experimental	23	73.4708	10.43360	2.12975
Verbs	Group				

Table 5: Independent samples t-tests for accuracy measures

		F	Sig.	T	df	Sig. (2-tailed)	Mean Difference	Std.Error Difference
Accuracy	Forms	.122	.729	-	42	.036	-6.73533	3.10150
Error-Free	Equal			2.172				
Clauses	variances							
	assumed							
	Equal			-	40.414	.036	-6.73533	3.10473
	variances			2.169				
	not							
	assumed							
Accuracy	Equal	.431	.515	-	42	.026	-7.01233	3.04374
Use of	variances			2.304				
Target-like	assumed							
Verbs								

Equal variances not assumed	- 2.322	41.578 .025	-7.01233	3.01949
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The results of the t-tests, illustrated in Table 5, showed that there was a statistically significant difference ($p < .05$) between the experimental and control groups regarding both accuracy measures. As shown in Table 4, the mean score for percentage of error-free clauses in the experimental group ($M = 79.14$) was statistically greater than the mean score in the control group ($M = 72.41$; $t(42) = -2.17, p = .36$). Likewise, as for the other dependent variables i.e., percentage of target-like use of correct verbs, the mean score of the experimental group 'The effect of dynamic assessment on complexity, accuracy, and fluency in Indonesian Maritime Vocational School students' speaking performance ($M = 73.47$) was statistically higher than the mean score of the control group ($M = 66.45$; $t(42) = -2.30, p = .26$). In order to show the differences more clearly findings are illustrated in Figure 2. Therefore, regarding the effect of task repetition on the accuracy of students' speaking performance, t-test results indicated that learners produced more accurate oral productions in the experimental group in comparison to the learners in the control group. Thus, the second null hypothesis stating that task repetition does not have any effect on the accuracy of Indonesian Maritime Vocational School students' speaking performance is rejected.

The effect of task repetition on the fluency of Indonesian Maritime Vocational School students' speaking performance. The third research question addressed the effect of task repetition on the fluency of Indonesian Maritime Vocational School students' speaking performance. Subsequently, the third null hypothesis was made in reply to this question.

Hypothesis 3: Task repetition does not have any effect on the fluency of Indonesian Maritime Vocational School students' speaking performance.

In order to examine the effect task repetition on fluency of spekaing performance, two independent sample t-tests were conducted between the experimental and control groups for both measures of fluency. Table 6 reported the descriptive data of fluency scores with regard to each of the control and experimental groups. Additionally, t-test results are demonstrated in Table 7.

Table 6: Descriptive of independent samples t-tests for fluency measures

Factors	Group	N	Mean	Std.Deviation	Std.Error Mean
Fluency Syllable Per Minute	Control Group	20	53.8650	6.58136	1.47164
	Experimental Group	23	54.5500	6.16843	1.25913
Meaningful Syllables Per Minute	Control Group	20	50.2820	6.94110	1.55208
	Experimental Group	23	51.1375	6.08433	1.24196

Table 7: Independent samples t-tests for fluency measures

		F	Sig.	T	df	Sig. (2-tailed)	Mean Difference	Std.Error Difference
Fluency Syllables Per Minute	Forms Equal variances assumed	.028	.868	-	42	.724	-.68500	1.92515
	Equal variances not assumed			.356	39.509	.725	-.68500	1.93678
Fluency Meaningful Syllables Per Minute	Forms Equal variances assumed	.085	.772	-	42	.665	-.85550	1.96372
	Equal variances not assumed			.436	38.188	.669	-.85550	1.98781

Table 6 showed that the fluency scores were not equivalent for the two groups. The mean scores of both fluency measures (i.e., number of all syllables produced per minute and number of meaningful syllables per minute) were slightly higher in the experimental group than in the control group. Although the mean score was slightly different among the two groups, t-test results in Table 7 revealed that the differences were not statistically significant for both fluency measures ($P > .05$). Consequently, there was no statistically significant difference between the fluency of Indonesian Maritime Vocational School students' speaking performance in the experimental and control group. Based on these results, therefore, the third null hypothesis stating that task repetition does not have any effect on the fluency of Indonesian Maritime Vocational School students' speaking performance is confirmed.

The relationship between CAF and students' speaking performance. The fourth research question addressed the relationship between students' speaking performance and the three aspects of complexity, accuracy and fluency of their speaking performance. In response to this question, hypothesis four was formulated which will be examined in this section.

Hypothesis 4: There are not any relationships between the complexity, accuracy and fluency of Indonesian Maritime Vocational School students' speaking performance and their speaking proficiency.

Pearson product-moment correlation coefficient was run in order to investigate the correlation among oral proficiency scores and any of the three aspects of fluency, complexity, and accuracy of students' speaking performance. Preliminary analyses were performed to ensure no violation of the assumptions of normality,

linearity and homoscedasticity. The results of the correlation coefficients are presented in Table 8.

The results of the correlation coefficient in Table 8 revealed that there were positive significant correlations between students' speaking performance scores and all of the six measures of CAF ($p < .01$). One thing to consider is the size of the value of the correlation coefficient which can range from -1.00 to 1.00 . This value will indicate the strength of the relationship between the two variables. Cohen (1988, pp. 79–81) suggested the following guidelines: small $r = .10$ to $.29$; medium $r = .30$ to $.49$; large $r = .50$ to 1.0 . Therefore, as presented in Table 8, there were large correlations between CAF measures and speaking proficiency scores (r is above $.5$), indicating that all of the six measures were strongly correlated with speaking proficiency scores for both groups.

Based on the observed results, it can be concluded that there were strong positive correlations between measures of complexity, accuracy and fluency of Indonesian Maritime Vocational School and their speaking proficiency. As a result, the fourth null hypothesis, as there are not any relationships between measures of complexity, accuracy and fluency of Indonesian Maritime Vocational School students' speaking performance and their speaking proficiency is rejected.

Table 8: Pearson product-moment correlation coefficient

				Speaking Proficiency	
Complexity Forms	No	of	Verb	Pearson Correlation	.707**
				Sig. (2-tailed)	.000
				Sum of Squares and Cross-products	262.455
				Covariance	6.104
				N	43
Complexity Clauses/Subordination				Pearson Correlation	.663**
				Sig. (2-tailed)	.000
				Sum of Squares and Cross-products	22.860
				Covariance	.532
				N	43
Complexity Clauses/Subordination				Pearson Correlation	.663**
				Sig. (2-tailed)	.000
				Sum of Squares and Cross-products	22.860
				Covariance	.532
				N	43
Accuracy Error-Free Clauses				Pearson Correlation	.773**
				Sig. (2-tailed)	.000
				Sum of Squares and Cross-products	1585.354
				Covariance	36.869
				N	43
Accuracy Use of Target-like Verbs				Pearson Correlation	.841**
				Sig. (2-tailed)	.000
				Sum of Squares and Cross-products	1703.080
				Covariance	39.607
				N	43
Fluency Syllables Per Minute				Pearson Correlation	.633**
				Sig. (2-tailed)	.000
				Sum of Squares and Cross-products	765.048
				Covariance	17.792
				N	43
Fluency Meaningful Minute	Syllables	Per		Pearson Correlation	.732**
				Sig. (2-tailed)	.000
				Sum of Squares and Cross-products	903.228
				Covariance	21.005
				N	43

IMPLICATIONS AND CONCLUSION

To conclude, analyzing the results obtained from the experimental and the control groups with regard to the effect of task repetition on the complexity, accuracy, and fluency of speaking performance, deductions could be made that task repetition promoted more complex and accurate speaking performance while it did not have any effect on the fluency of students' speaking performance. Therefore, hypothesis 1 and 2 were rejected, and hypothesis 3 was confirmed. Considering the relationship between measures of complexity, accuracy and fluency of Indonesian Maritime Vocational School students' speaking performance and their speaking proficiency, results manifested strong positive correlations between these measures and students' speaking proficiency scores. Unquestionably, then, the forth null hypothesis was rejected. Finally, regarding the last research question, the factor analysis revealed that there were three main factors underlying the six measures used in the present study.

The three major hypotheses of the present study were that implementation of task repetition do not have any effect on CAF. The findings did not confirm the all three hypotheses by showing that the differences between experimental group which received tasks repetition and control group which was taught under normal tasks. The obtained results showed that both measures of complexity and both measures of accuracy were greater in the experimental group, indicating that task repetition resulted in more complex and more accurate speaking performance. But there was nostatistically significant difference between the fluency of students' speaking performance in the experimental and control group.

The question may arise as to why there were not any differences between two groups' participants' fluency but there were significant differences between their complexity and accuracy. A plausible interpretation is that although in experimental group students received tasks repetition but they had to have more concentration on their speaking performance than control group so that they could focus on grammatical and length of their oral

productions to produce responses which they were asked while receiving eight steps to reach the correct form of response. Moreover, students were expected to produce the most accurate and complex responses so they ignored the speed of their speaking and how to improve it simultaneously with their speaking' accuracy and complexity. Therefore, one of the contributions of this study is that it ponders the next researchers to pay enough attention to students' fluency simultaneously with their speaking' accuracy and complexity.

Skehan (2009) believed that complexity, accuracy, and fluency are important aspects of second language performance; according to his findings, accuracy and complexity are simultaneously raised the same as the present study's result. The fourth hypothesis stated that there is no relationship between the complexity, accuracy and fluency of Iranian EFL learners' oral production and oral proficiency. But obtained results revealed that there were strong positive correlations between measures of complexity, accuracy and fluency of Iranian EFL learners and their L2 oral proficiency. The reason that is given is that these three aspects of oral production considered all aspects of improving the oral proficiency and there are not any others aspects. CAF measures are a good starting point for defining language performance.

Finally, the third hypothesis formulated for whether CAF in control and experimental group truly represent the three aspects of complexity, accuracy, and fluency or not. A significant progress in the field would thus be the identification of a limited set of standardized measures to be used across studies. It is also important to remember that one has to make choices and that measures are necessarily partial. It is therefore not advisable to group too many notions under the same term which, instead of providing a wider picture, just makes it more blurred. Despite of these limitations for measuring CAF, the findings of present study were obtained exactly by measuring all these three aspects through six different ways. These findings revealed that six measures used in this study (Complexity: number of verb forms and

clauses/Subordination, Accuracy: error-free clauses and use of target-like verbs, Fluency: all syllables/min and meaningful Syllables/min) in control and experimental group truly represent the three aspects of complexity, accuracy, and fluency that led to reject the fifth null hypothesis. To do so, some studies, such as the present one need to measure all of them obviously.

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