ISSN 1798-4769
Journal of Language Teaching and Research, Vol. 4, No. 2, pp. 328-334, March 2013

doi:10.4304/jltr.4.2.328-334

The Relationship between Lexical Diversity and Genre in Iranian EFL Learners' Writings

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***Abstract*—The present study investigated whether lexical diversity is sensitive to genre in Iranian intermediate EFL learners' writings. It also aimed at determining the relationship between learners' writing quality and lexical diversity in different genres. To this end, 30 intermediate EFL learners, studying English at the Language Center of Urmia University, were asked to write essays in three genres: argumentative, narrative and descriptive. The writings were scored both holistically and analytically by the researchers and a trained rater, yielding an inter-rater reliability of 0.84. Subsequently, lexical diversity was measured using Richards and Malvern (1997) VocD model of lexical diversity. Results obtained through correlational analyses and one-way Repeated Measures ANOVA indicated a significant difference between narrative and comparative, and also between narrative and argumentative genres in terms of lexical diversity. A positive relationship between lexical diversity and writing quality was found only in argumentative genre when scored analytically. The study may have implications for improving and predicting the quality of EFL learners' writing.**

***Index Terms*—lexical diversity, Iranian EFL learners, writing genre**

I. Introduction

A number of second language (L2) studies (e.g. Leki & Carson, 1994; Raimes, 1985; Uzawa & Cummings, 1989) have indicated lack of vocabulary is what makes writing in a foreign language difficult, and that vocabulary proficiency is probably the best indicator of the overall text quality (e.g. Astika, 1993; Santos, 1988). Lexical diversity (LD) as an important lexical aspect has been correlated by many researchers (e.g. Engber, 1995; Laufer and Nation, 1995; Yu, 2010) with the quality of learners' writings. The results of these studies indicated a positive relationship between writing quality and lexical diversity, which means that it can be used as a predictor of the quality of writing.

"Lexical diversity can be described as the range and the variety of vocabulary deployed in a text by either a speaker or a writer" (McCarthy & Jarvis 2007, p. 459). Lexical diversity is loosely defined as "something to do with the range of vocabulary displayed" in written and spoken discourses (Durán, Malvern, Richards, & Chipere, 2004, p. 220). LD is also relevant to a wide range of aspects, such as writing skills, vocabulary usage and lexical knowledge. It describes the quality of vocabulary content of the learner's output. The premise behind lexical diversity indices is that more diverse vocabularies indicate more proficient lexicons. Higher lexical diversity is generally considered to indicate more advanced proficiency than lower lexical diversity (Malvern, Richards, Chipere, & Duran, 2004).

Lexical diversity has been studied under many guises and many forms. A number of measures of this sort exist, but there is no clear agreement about which is the best variant to use in the context of L2 learners. Since Yule's (1944) seminal work, various attempts have been made to seek lexical diversity indices that are conceptually sound and mathematically simple in many language related research areas (e.g., Baayen, 1996; Hoover, 2003; Panas, 2001; Panas & Yannacopoulos, 2004; Sichel, 1986; Tweedie & Baayen, 1998; Wimmer & Altmann, 1999). Among the many methods for quantifying lexical diversity, D developed by Malvern et al. (2004) was considered to be the most valid for the purpose of this study.

Koda (1993) investigated the impact of linguistic knowledge on L2 writing ability of English-L1 college students learning Japanese as a foreign language. In her study, the correlation between students' vocabulary knowledge (assessed with a word definition task in their native language) and the quality of their essays was 0.7. Regression analysis showed that the single strongest predictor of their writing was lexical diversity, which explained roughly half of the variance in L2 writing performance. In compositions written by EFL learners at intermediate to high intermediate levels of proficiency, Engber (1995) also found substantial correlations between lexical diversity and holistic quality ratings of the compositions.

Ruth Berman's Spencer Foundation study 'Developing literacy in different contexts and in different languages' (Berman, 2000) assessed vocabulary diversity in first language speaking and writing. This research was conducted across seven languages (with the subsequent addition of Catalan), comparing children at three ages, plus adults, producing language in two genres (narrative and expository), and two modalities (speech and writing). Their measure shows main effects for age, genre, and language, but not for modality (Berman and Verhoeven, 2002). Berman's results

were later supported by the results of a study by Woerfel and Yılmaz (2011) which showed that measurement of lexical diversity, word and text length differ according to age and genre.

Jarvis (2002) tested various lexical diversity measures on short written narratives by young EFL learners and English native speakers. The methodological advantages of D over other measures were again confirmed in this study. It was found that the narratives by EFL learners with more years of English learning experience tended to have higher D. Significant difference between EFL learners and native speakers was noted, always with native speakers having a higher D. Overall, lexical diversity was found to have consistently significant, albeit moderate, correlations with the holistic quality ratings of the narratives. His conclusion was that lexical diversity, when measured by reliable indices, was positively correlated with the quantity of formal instruction and L2 vocabulary knowledge.

Yu (2010), using D as a measure of lexical diversity, found that D had statistically significant and positive correlation with the overall quality ratings of both writing and speaking performances as well as test takers' general language proficiency. Different topics and topic types of the writing prompts exerted significant effects on the lexical diversity of the compositions. Compositions of impersonal topics had significantly higher lexical diversity than personal topics.. Higher lexical diversity was achieved when test takers were highly familiar with the impersonal topic. The significant effect of topics and topic types on lexical diversity echo the suggestion made by Vermeer (2000, p. 79): "Control of tasks over informants is a prerequisite for comparing different texts, so that the kinds of topics are similar for all informants."

McNamara, Louwerse, McCarthy, and Graesser(2010) analyzed the linguistic differences between high quality texts and low quality texts using computational linguistic tool, CohMetrix. They found that the three most predictive linguistic features of essay quality were syntactic complexity, lexical diversity, and word frequency. Mellor (2010), in a study of 34 essays using an argumentative topic, collected from a group of third year English majors at a Japanese university also found lexical diversity and essay length the predictors of writing quality with essay length having a greater correlation (r=0.79) with the quality of writing than lexical diversity does (using D, r=0.29).

However, it should be acknowledged that "the quality of a discourse, written or spoken, is defined and shaped by various linguistic features other than their lexical diversity alone (e.g., handwriting quality, grammatical and syntactic structures of a piece of writing; pronunciation, fluency and speed in speaking)" (Yu, 2007, p. 80). Furthermore, many nonlinguistic factors in relation to the process of task performance such as test takers' anxiety and stress could also affect the lexical diversity of their performance (see Bradac, Bowers, & Courtright, 1979).

Linnarud (1986) found clear differences in the use of vocabulary between the compositions written by 17-year-old Swedish learners of English, who had been learning it for 9 years, and those by English native speakers of the same age. The Swedish learners lacked lexical variation and showed much less lexical originality than the English native speakers. In addition, there was a large difference between the number of individual words most frequently used by English native speakers and Swedish learners. Linnarud, however, detected no significant relationship between holistic scores and lexical diversity for advanced learners.

As viewed above, research in the area lexical diversity regarding EFL learners' success in writing has been slow to take off. There also exists divergence as regards the results of lexical diversity in writing studies. Unfortunately, the impact of genre on the writers' response to the writing task has been a neglected variable of test design in performance analysis and writing assessment research. That the testing task has decisive effects on the linguistic data elicited has been a long recognized issue in the field of second language acquisition (e.g. Tarone and Parrish, 1988; Larsen-Freeman and Long, 1991) which seems to have gone overlooked in second language writing teaching and learning research.

Accordingly, the objective of the present study was to determine the effect of genre on lexical diversity and also to investigate the relationship between writing quality (scored both analytically and holistically) and diversity in the three genres of argumentative, narrative, and comparative.

More precisely, this study sought to find answers to the following questions:

1. Is lexical diversity sensitive to genre in Iranian upper-intermediate EFL learners' writings?
2. Is there any relationship between Iranian intermediate EFL learners' overall writing quality and lexical diversity?

The following two null-hypotheses were put forward for the above questions:

1. Lexical diversity is not sensitive to genre in Iranian intermediate EFL learners' writings.
2. There is no relationship between Iranian intermediate EFL learners' overall writing quality and lexical diversity.

II. Materials and Methods

In order to investigate the research questions, a correlational or associational design and a repeated measures design were employed. Correlational design helped to find the relationship between lexical diversity and the quality of learners' writings in different genres. A repeated-measures design was also employed to compare the written performances of the participants in three different genres in terms of lexical diversity. To this end, 30 participants (both male & female) at the intermediate level were selected from among students studying English at the Language Center of Urmia University based on the results of the writing section of the International English Language Testing System (IELTS) as a placement test in July, 2011.

Following the placement test, the selected participants wrote on the three topics of argumentative, comparative, and narrative during three subsequent sessions. The researchers scored all 90 writing samples first analytically (following

Jacobs, Zinkgraf, Wormuth, Hartfiel, & Hughey, 1981) and then holistically (using the scoring guide for the Test of Written English). Following the researchers, a trained assistant did the same on ten randomly selected essays. Using correlational analysis, the inter-rater reliability was computed to be 0.84.

The lexical diversity of the writings was measured using Richards and Malvern's (1997) VocD model. Each text had more than 50 words, thus meeting the minimum sample size requirement to compute a valid D. Each text was subject to 15 times of VocD analyses; a slightly different D was reported each time, therefore, the average of them was used as its final D. The data were entered into Statistical Package for Social Sciences (SPSS) spreadsheet, version 15, and the relevant hypotheses were tested at the probability level of 0.05. Subsequently, a one-way Repeated Measure ANOVA was utilized to determine whether lexical diversity was sensitive to genre. Finally, lexical diversity was correlated with the writing quality, using first the results of holistic scoring and then the analytic one

III. Results

A one-way repeated measures ANOVA was used to compare lexical diversity in the three genre types. Below are the means and standard deviations.

TABLE 1
DESCRIPTIVE STATISTICS FOR LEXICAL DIVERSITY ACROSS DIFFERENT GENRES

	Mean	Std. Deviation	N
diversity.comparative	82.8000	12.75066	30
diversity.argumentative	80.2333	10.87130	30
diversity.narrative	87.1667	8.59063	30

TABLE 2
MULTIVARIATE TEST RESULTS

Effect		Value	F	Hypothesis df	Error df	Sig.	Partial Eta Squared
time	Pillai's Trace	.291	5.759[a]	2.000	28.000	.008	.291
	Wilks' Lambda	.709	5.759[a]	2.000	28.000	.008	.291
	Hotelling's Trace	.411	5.759[a]	2.000	28.000	.008	.291
	Roy's Largest Root	.411	5.759[a]	2.000	28.000	.008	.291

a. Exact statistic
b. Design: Intercept
Within Subjects Design: time

According to table 2, the value for Wilks' Lambda is 0.709, F (2, 28) = 5.75, $P < .05$, with a very high effect size of 0.291. The p value is less than 0.05, suggesting a statistically significant effect for genre with regard to lexical diversity. In other words, there was a significant difference among the different genres in terms of lexical diversity. As a result, the first null hypothesis is rejected. Table 3 shows which groups differ from each other.

TABLE 3
EXACT GENRE DIFFERENCES IN LEXICAL DIVERSITY

(I) time	(J) time	Mean Difference (I-J)	Std. Error	Sig.[a]	95% Confidence Interval for Difference[a]	
					Lower Bound	Upper Bound
1*	2	2.567	3.009	.401	-3.588	8.721
	3	-4.367*	1.854	.025	-8.159	-.574
2	1	-2.567	3.009	.401	-8.721	3.588
	3	-6.933*	2.542	.011	-12.132	-1.734
3	1	4.367*	1.854	.025	.574	8.159
	2	6.933*	2.542	.011	1.734	12.132

Based on estimated marginal means
a. Adjustment for multiple comparisons: Least Significant Difference (equivalent to no adjustments).
*. The mean difference is significant at the .05 level.
*1 stands for comparative, 2 stands for argumentative, and 3 stands for narrative genre types.

According to the above table, the difference between comparative and argumentative genre types is not statistically significant (p=0.401). However there are significant differences (p=0.025) between comparative and narrative genres. Also, there is a statistically significant difference (p=0.011) between narrative and argumentative genres.

In order to examine the relationship between lexical diversity and writing quality, Pearson Correlation was employed. The results are shown below in table 4.

TABLE 4
THE RELATIONSHIP BETWEEN WRITING QUALITY AND LEXICAL DIEVRSITY

		analytic	holistic	diversity
Analytic	Pearson Correlation	1	.664**	-.003
	Sig. (2-tailed)		.000	.981
	N	90	90	90
Holistic	Pearson Correlation	.664**	1	.057
	Sig. (2-tailed)	.000		.592
	N	90	90	90
Diversity	Pearson Correlation	-.003	.057	1
	Sig. (2-tailed)	.981	.592	
	N	90	90	90

**. Correlation is significant at the 0.01 level (2-tailed).

The results indicate that there is a nonsignificant, negative and weak relationship (r= - .003) between lexical diversity and overall writing quality (i.e., three genres taken together) when scored analytically. The same is valid for the relation lexical diversity and overall writing quality when scored holistically, showing a positive but nonsignificant relationship (r= 0.05) between the two. This implies that the second null hypothesis is confirmed. In order to further investigate the relationship between lexical diversity and writing quality in different genre types, the following Correlational analyses were used.

TABLE 5
THE RELATIONSHIP BETWEEN LEXICAL DIVERSITY AND COMPARATIVE WRITING SCORED ANALYTICALLY

		diversity.comparative	analytic.comparative
diversity.comparative	Pearson Correlation	1	.029
	Sig. (2-tailed)		.877
	N	30	30
analytic.comparative	Pearson Correlation	.029	1
	Sig. (2-tailed)	.877	
	N	30	30

TABLE 6
THE RELATIONSHIP BETWEEN LEXICAL DIVERSITY AND ARGUMENTATIVE WRITING SCORED ANALYTICALLY

		diversity.argumentative	analytic.argumentative
diversity.argumentative	Pearson Correlation	1	.482**
	Sig. (2-tailed)		.007
	N	30	30
analytic.argumentative	Pearson Correlation	.482**	1
	Sig. (2-tailed)	.007	
	N	30	30

**. Correlation is significant at the 0.01 level (2-tailed).

As table 5 shows, there is not a significant relationship ($p<0.05$) between lexical diversity and comparative genre scored analytically. However, table 6 shows that there is a significant relationship (r= 0.48) between lexical diversity and argumentative genre scored analytically, implying that the second null hypothesis regarding argumentative genre scores analytically is rejected.

The results of the analytic scoring of narrative genre were also correlated with lexical diversity indicating a nonsignificant negative relationship (r= -0.34) between the two. As table 7 shows, once more, the second null hypothesis is confirmed.

TABLE 7
THE RELATIONSHIP BETWEEN LEXICAL DIVERSITY AND NARRATIVE WRITING SCORED ANALYTICALLY

		diversity.narrative	analytic.narrative
diversity.narrative	Pearson Correlation	1	-.340
	Sig. (2-tailed)		.066
	N	30	30
analytic.narrative	Pearson Correlation	-.340	1
	Sig. (2-tailed)	.066	
	N	30	30

Following the analytic scoring of genres, lexical diversity was also correlated with the holistic scoring of each genre. The following three tables show the relationship between lexical diversity and the quality of writing in each genre when scored holistically.

TABLE 8
THE RELATIONSHIP BETWEEN LEXICAL DIVERSITY AND COMPARATIVE WRITING SCORED HOLISTICALLY

		diversity.comparative	holistic.comparative
diversity.comparative	Pearson Correlation	1	.112
	Sig. (2-tailed)		.555
	N	30	30
holistic.comparative	Pearson Correlation	.112	1
	Sig. (2-tailed)	.555	
	N	30	30

The figures in table 8 show that the relationship (r=0.11) between lexical diversity and the quality of writing in comparative genre when scored holistically is weak and nonsignificant (p=0.555). This implies a confirmation of the second null-hypothesis, indicating no relationship between the two variables.

TABLE 9
THE RELATIONSHIP BETWEEN LEXICAL DIVERSITY AND ARGUMENTATIVE WRITING SCORED HOLISTICALLY

		diversity.argumentative	holistic.argumentative
diversity.argumentative	Pearson Correlation	1	.316
	Sig. (2-tailed)		.089
	N	30	30
holistic.argumentative	Pearson Correlation	.316	1
	Sig. (2-tailed)	.089	
	N	30	30

The above table reveals a moderate nonsignificant relationship (r= 0.31, p=0.089) between lexical diversity and argumentative genre when scored holistically. The second null hypothesis is confirmed gain, indicating no relationship between lexical diversity and writing quality.

The last table (table 10) concerns the relationship between lexical diversity and narrative genre when scored holistically. Since the relationship is weak and nonsignificant in this case too (r= -0.26, p=0.157), the answer to the second question turns out to be negative.

TABLE 10
THE RELATIONSHIP BETWEEN LEXICAL DIVERSITY AND NARRATIVE WRITING SCORED HOLISTICALLY

		diversity.narrative	holistic.narrative
diversity.narrative	Pearson Correlation	1	-.265
	Sig. (2-tailed)		.157
	N	30	30
holistic.narrative	Pearson Correlation	-.265	1
	Sig. (2-tailed)	.157	
	N	30	30

IV. Discussion

The findings of this study regarding lexical density in different genres are very close to the results of Yu (2010), indicating that different topics and topic types of the writing prompts exert significant effects on the lexical diversity of compositions. Compositions of impersonal topics had significantly higher lexical diversity than personal topics did. The significant effect of topics and topic types on lexical diversity support/verify echo the suggestion made by Vermeer (2000, p. 79): "Control of tasks over informants is a prerequisite for comparing different texts, so that the kinds of topics are similar for all informants."

Berman (2000) conducted a comprehensive study of lexical diversity across seven languages, comparing children at three ages, plus adults, producing language in two genres (narrative and expository), and two modalities (speech and writing) and found main effects for age, genre, and language, but not for modality. Berman's results were later supported by the results of a study by Woerfel and Yılmaz (2011) which showed that measurement of lexical diversity, word and text length differ according to age and genre. The results of these two studies can be said to be consistent with the findings of the present research, in that they both consider lexical diversity to differ among different genres.

Although the correlation between overall lexical diversity and overall writing quality was determined to be nonsignifican, a detailed investigation of the correlation in each genre type showed divergent and, in some cases, contradicting results. This can be related to findings regarding the first question in which genre had a significant effect on lexical diversity. In other words, as lexical diversity differed among the genres, it is quite natural to find different results for its relationship with writing quality in different genres.

The results of the correlations between lexical diversity and argumentative writing scored analytically can be considered congruent with those of Grobe (1981), Laufer and Nation (1995), McNamara et al. (2010), Engber (1995), Mellor (2011), and Yu (2010), who found that lexical diversity had a statistically significant and positive correlation with the overall quality ratings of writings. However, Koda (1993) found higher correlations (r=0.7 and r=0.6) between lexical density and the quality of writings, indicating that lexical diversity can be considered a strong predictor of writing quality.

The findings of the present study regarding the correlation between lexical diversity and writing quality (holistic and analytic) could replicate the results obtained by Linnarud (1986), whose study of the compositions written by 17-year-old native speakers and Swedish learners of English detected no significant relationship between holistic scores and lexical diversity for advanced learners.

Jarvis (2002) found consistently significant, albeit moderate, correlations between lexical diversity and the holistic quality ratings of the narratives. His results stand in sharp contrast to the findings of the present study which revealed nonsignificant correlation between lexical diversity and holistic and analytic scores of writing.

V. Conclusion

This study aimed at first investigating lexical diversity in the three genres of argumentative, narrative, and comparative. The second aim was to see whether there exists any relationship between writing quality in different genres and lexical diversity. Based on the obtained data, the outcome of this study was that lexical diversity is sensitive to genre. Except for the relationship between lexical diversity and argumentative genre scored analytically, there was not any statistically significant relationship between lexical diversity and writing quality.

The lexical diversity patterns over topics of the current study provide implications of writing topic preparation for the ESL writing course. To increase the learners' lexical diversity and to meet the writing culture of the academic writing community, writing instructors need to develop writing topics that can increase writers' creativity, critical thinking, and cultural awareness so that the learners look for new vocabulary rather than circulating the same vocabulary over and over.

By expanding the types of lexical variables used for comparison and by investigating the relationship to quality score, the role of the lexicon in writing would be further substantiated. Although this study failed to establish a significant relationship between lexical diversity and writing quality except for argumentative writing scored analytically, it indicates the need for further attention to different genres in writing. In other words, if students pay more attention to the use of vocabulary while writing, the quality of their writings will most probably improve, leading to a positive washback. In other words, it is worth helping and encouraging learners to bring their vocabulary knowledge into active use in writing.

Becoming aware of the differences among genres in terms of lexical diversity, teachers will put more emphasis on the different genres in writing courses. Knowing these differences among genres, students will probably pay more attention to the two lexical aspects while writing in English. Consequently, the present study is a strong support to genre-based writing courses, emphasizing attention to different genres in the process of learning writing.

The realization of the effect of lexical diversity on the quality of their writings will also make students pay more attention to this lexical aspect while editing and revising their written products. Since learners only pay attention to the use of correct vocabulary in their writings in the stages of drafting, editing, and revising, by paying more attention to the use of more varied vocabulary they will probably be able to increase the quality of their writings in these stages.

References

[1] Astika, G. G. (1993). Analytical assessments of foreign students' writing. *RELC Journal, 24*(1), 61-72.
[2] Baayen, R. H. (1996). The effects of lexical specialization on the growth curve of the vocabulary. *Computational Linguistics*, *22*(4), 455–480.
[3] Berman, R. A., & Verhoeven, L. (2002). Cross-linguistic perspectives on the development of text-production abilities: Speech and writing. *Written Language and Literacy, 5*(1), 1–43.
[4] Bradac, J., Bowers, J. A., & Courtright, J. (1979). Three language variables in communication research: Intensity, immediacy and diversity. *Human Communication Research, 5*, 257–269.
[5] Durán, P., Malvern, D., Richards, B., & Chipere, N. (2004). Developmental trends in lexical diversity. *Applied Linguistics, 25*(2), 220–242.
[6] Engber, C. A. (1995). The relationship of lexical proficiency to the quality of ESL compositions. *Journal of Second Language Writing, 4*, 139-155.
[7] Grobe, C. (1981). Syntactic maturity, mechanics, and vocabulary as predictors of quality ratings. *Research in the Teaching of English, 15*, 75–85.
[8] Hoover, D. L. (2003).Another perspective on vocabulary richness. *Computers and the Humanities, 37*(22), 151–178.
[9] Jacobs, H., Zinkgraf, S., Wormuth, D., Hartfiel, V. and Hughey, J. (1981).*Testing ESL compositions: A Practical approach.* Rowley, MA: Newbury House.
[10] Jarvis, S. (2002). Short texts, best-fitting curves and new measures of lexical diversity. *Language Testing, 19*, 57-84.
[11] Koda, K. (1993). Task-induced variability in FL composition: Language-specific perspectives. *Foreign Language Annals, 26*, 332-346.
[12] Larsen-Freeman, D., & Long, M. (1991). *An introduction to second language acquisition research*. London: Longman.
[13] Laufer, B., & Nation, P. (1995). Vocabulary size and use: lexical richness in L2 written production. *Applied Linguistics, 16*, 307-322.
[14] Linnarud, M. (1986). Lexis in composition: A performance analysis of Swedish learners' written English. Lund: CWK Gleerup.
[15] Leki, I., & Carson, J.G. (1994).Students' perceptions of EAP writing instruction and writing needs across the disciplines. *TESOL Quarterly, 28*, 81-101.
[16] Malvern, D., Richards, B., Chipere, N., & Durán, P. (2004). Lexical diversity and language development: Quantification and assessment. New York: Palgrave MacMillan.
[17] McCarthy, P. M., & Jarvis, S. (2007). A theoretical and empirical evaluation of vocd. *Language Testing.24*, 459-488.
[18] McNamara, D. S., Louwerse, M. M., McCarthy, P. M., & Graesser, A. C. (2010). Coh-Metrix: Capturing linguistic features of cohesion. *Discourse Processes*, *47*, 292–330.
[19] Mellor, A. (2010). Automatic essay scoring for low level learners of English as a second language, Unpublished PhD thesis, Swansea University.
[20] Panas, E. (2001). The generalized torquist: Specification and estimation of a new vocabulary-text size function. *Journal of Quantitative Linguistics*, *8*(3), 233–252.
[21] Panas, E., & Yannacopoulos, A. N. (2004). Stochastic models for the lexical richness of a text: Qualitative results. *Journal of Quantitative Linguistics*, *11*(3), 251–273.
[22] Raimes, A. (1985). What unskilled ESL students do as they write: A classroom study of composing. *TESOL Quarterly, 19*(2), 229-258.
[23] Richards, B. J., and Malvern, D. D. (1997a). Quantifying lexical diversity in the study of language development. Reading: Faculty of Education and Community Studies.
[24] Santos, T. (1988). Professors' reactions to the academic writing of nonnative speaking students. *TESOL Quarterly, 22*(1), 69-90.
[25] Sichel, H. S. (1986). Word frequency distribution and type-token characteristics. *Mathematical Scientist*, *11*(1), 45–72.
[26] Tarone, E & Parish, B. (1988) Task Related Variation in Interlanguage: The Case of Articles. *Language Learning 38*, 21-44
[27] Tweedie F.J. and Baayen, R.H. (1998). How variable may a constant be? Measures of lexical richness in perspective. *Computers and the Humanities, 32*, 323-352.
[28] Uzawa, K., & Cummings, A. (1989). Writing strategies in Japanese as a foreign language: Lowering or keeping up the standards. *The Canadian Modern Language Review, 46*, 179–191.
[29] Vermeer, A. (2000). Coming to grips with lexical richness in spontaneous speech data. *Language Testing, 17*, 65-83.
[30] Wimmer, G., & Altmann, G. (1999). On vocabulary richness. *Journal of Quantitative Linguistics*, *6*(1), 1–9.
[31] Woerfel, T. & Yilmaz, S. 2011, Lexical development of German-Turkish bilinguals: A comparative study in written discourse In Chris Cummins et al. (eds.) *Proceedings of the 6th Cambridge Postgraduate Conference in Language Research*. Cambridge: Cambridge Institue of Language Research. pp. 240-251.
[32] Yu, G. (2007). Lexical Diversity in MELAB Writing and Speaking Task Performances. *Spaan Fellow Working Papers in Second or Foreign Language Assessment, 5*, 79-116.
[33] Yu, G. (2010). Lexical diversity in writing and speaking task performances. *Applied Linguistics, 31*, 236-259.
[34] Yule, G. U. (1944). The statistical study of literary vocabulary. Cambridge: Cambridge University Press.

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