

The Impact of Grammatical and Syntactic Knowledge on Writing Improvement

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Abstract

The purposes of this research were to investigate the improvement in grammatical and syntactic knowledge resulted from integrating grammar and syntax exercises in paragraph writing activities; the correlation between grammatical and syntactic knowledge and writing achievement; and the effect of grammatical and syntactic knowledge on writing effectiveness, in terms of fluency and accuracy.

The participants of this study were 31 third year English majored teacher students from the Faculty of Education enrolling Formal Paragraph Writing Course in the first semester of the academic year 2017. Research instruments included 2 grammar pre-tests and post-tests, and paragraph writing pre-test and post-test. Data were analyzed by percentage, mean, standard deviation, paired samples t-test, and Pearson product-moment correlation. The study found that grammar knowledge of students in both discrete points and syntax were significantly improved at the .05 level of statistic. The positive correlation between grammar scores and paragraph scores

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was found significant at the .05 level of statistic. Grammatical and syntactic knowledge had a positive impact on writing fluency and accuracy among students in the medium-grade and high-grade groups.

Keywords: Grammatical Knowledge, Syntactic Knowledge, Writing Improvement, Writing Fluency, Writing Accuracy

Introduction

English has become a language of international communication.

Besides being used as a mother tongue in English native speaking countries, it is used as a second language, a third language or a foreign language as an important medium for international businesses, travel and tourism around the world. Furthermore, it is a main language in academic issues such as academic conferences and publication (Harmer, 2007). It is a tool for students to pursue their further study in international and English-speaking universities. As a result, the improvement of English skills is essential among people who need to be on par with the world of Internet and information transferring nowadays.

In developing the four skills of language, writing is considered the most difficult to be developed. This is because communication through written text lacks immediate feedback as a guide, therefore, the written text must be clear and accurate. It is crucial that the written text be of linguistic accuracy, clarity of presentation, and proper organization of ideas. In contrast, if the text comprises a lot of errors



both syntactic and lexical, it may render the message unintelligible (Olshtain 2001). This problem is commonly found in composition of students who learn English as a foreign language. For example, an analysis made on English compositions written by fourth year students in a Chinese university found that there was an average of about 7 errors in each composition of approximately 150 words. One out of four of these errors were syntactic errors, the rest were lexical ones (Yunping, 2015). Study by Prasongsook (2016) to investigate students' writing errors in 4 paragraphs, found that the error rates of the 4 writings of students were 16.69, 9.85, 13.54, and 9.85 respectively (the rate was calculated from the frequency of errors per 100 words). These errors sometimes even cause incomprehensibility.

How to develop writing skill to be useable and practical is an argumentative issue among scholars and linguistic educators. Smagorinsky, Wilson and Moore (2011) conclude from their review that body of research on teaching grammar and writing found that teaching of grammar in isolation does not improve writing and even affect writing improvement because it hampers the time for actual writing. Halasek (2005, cited in Bakhin, 2004) notes that when the teaching of grammar is isolated from the teaching of writing, grammar becomes a set of elementary principles, a mere task of memorization. He notes that students who are capable of recognizing the correctness or incorrectness of grammatical and syntactic structures may not employ their knowledge in their writing.

In the meantime, there were some studies finding that when

grammar and syntax exercises were integrated in the context of writing, it had a positive impact on writing development (Jones, Myhill, & Bailey, 2013). These assertions are emerged from the context of English as a first language. It is suspicious in the contexts of English as a foreign language, whether grammar and syntax exercises integrated in writing activities result in writing improvement, and vice versa, whether writing activities embedded grammar exercises can develop students' grammar knowledge so that they can employ it in their writing. Larsen-Freeman refers to the view of many educators that accuracy in speaking and writing is the important part of communicative competence, it makes transferring message successful with correct meaning needed to communicate (Larsen-Freeman, 2001 cited in Spada and Lightbown, 1993; Lightbown, 1998). Most linguists of the first language suggest that students be exposed to the accurate linguistic forms so often that they can process and intake the forms and use them appropriately. However, only few students are capable of learning the forms of the language from their exposure. Most students, especially who are studying English as a foreign language have limited opportunity to be exposed to the target language. The possible way to provide them with sample target language is to involve them into classroom activities (Larsen-Freeman, 2001). And according to the controversy over the impact of teaching grammar on writing effectiveness, it is worth studying this issue for the sake of EFL students to improve their English language, especially in writing skill.

Objectives

The objectives of this research were to investigate the improvement in grammatical and syntactic knowledge resulted from integrating grammatical and syntactic exercises in paragraphs writing activities; the correlation between grammatical and syntactic knowledge and writing achievement; and the effect of grammatical and syntactic knowledge on writing effectiveness, in terms of fluency and accuracy.

Methodology

The participants were 31 third year English majored teacher students from the Faculty of Education enrolling Formal Paragraph Writing in the first semester of the academic year 2017. The study employed a one group pre-test post-test design. The independent variable was the 6 chapters of the paragraph writing text, consisting of chapter 4 – 9. The dependent variables included 1) paragraph writing achievement: scores of 4 aspects in a namely content, grammar accuracy, organization, and coherence, scoring by guidance of a rubric based on TEEP attribute writing scales (Weir, 1990 cited in Weigle, 2002) 2) Grammatical knowledge; 3) Syntactic knowledge; and 4) writing fluency and accuracy. Data were analyzed by mean, percentage, t-test, and Pearson product-moment correlation. The duration of the research was 16 weeks. The design is illustrated in Figure 1.

One group pre-test post-test					
	→	→	→	→	→
Week 1	Week 2 - 3	Week 4	Week 5 - 14	Week 15	Week 16
- Pre-test Grammar and sentence structure	- Introduction to paragraph - Features of a good paragraph - Paragraph organization	- Pre-test paragraph writing (Rural school VS Urban school)	- Chapters 4 – 9: Practice writing different genres of paragraph together with grammar exercises	- Post-test Grammar and sentence structure	- Post-test paragraph writing (Rural school VS Urban school)

Figure1. Research Design

Results

This chapter presents the findings which answer the research questions:

1. Can students' grammatical and syntactic knowledge be improved through integrating grammar and syntax exercises in paragraph writing activities?

2. Is there a correlation between grammatical and syntactic knowledge and writing achievement?

3. Does grammatical and syntactic knowledge contribute to writing fluency and accuracy?

Findings for each question are presented as follows:

1. Can students' grammatical and syntactic knowledge be improved through paragraph writing activities integrated with grammar

and syntax exercises?

Findings:

1.1 Grammatical and syntactic knowledge before and after involving the paragraph writing course

Table 1: Mean scores of grammatical and syntactic knowledge from Pre-test and Post-test

Knowledge	Scores	Pre-test		Post-test	
		Mean \bar{X}	Percentage	Mean \bar{X}	Percentage
1. Grammatical Knowledge	100	58.03	58.03	64.71	64.71
2. Syntactic Knowledge	50	23.10	46.19	31.29	62.58
Total	150	81.13	54.09	96	64

Table 1 shows that the mean scores rose in both grammatical and syntactic knowledge and the total grammar. Grammatical knowledge went up from 58.03% to 64.71%; syntactic knowledge from 46.19% to 62.58 %. The mean of total parts rose from 54.09% to 64.00%.



1.2 t-test comparing grammar scores of pre-test and post-test

Table 2: Paired samples test

	Paired Differences					t	df	Sig. (2-tailed)
	Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Differences				
				Lower	Upper			
Pair1 PreGrm1 - PostGrm1	-6.6774	5.0688	.9104	-8.5367	-4.8182	-7.335	30	.000
Pair2 PreGrm2 - PostGrm2	-8.1936	5.4615	.9809	-10.1968	-6.1903	-8.353	30	.000
Pair3 PreTotalGrm - PostTotalGrm	-14.8710	7.6800	1.3794	-17.6880	-12.0539	-10.781	30	.000

Table 2 shows the t-test results comparing each pair of pre and post-test. The mean scores of each pair were found significantly different. The t values of grammar 1 pair, grammar 2 pair, and total grammar pair were -7.335, -8.353 and -10.781 respectively. The Sig. (2-tailed) of each pair was .000 which was less than .05. This can be explained that the mean scores of post-tests of the three aspects of grammar were significantly higher than those of the pre-tests; which mean the grammar knowledge of students were improved after involving the paragraph writing activities integrated with grammar and syntax exercises.

2. Is there a correlation between grammatical and syntactical knowledge and writing achievement?

Findings:

2.1 Grammatical and syntactic knowledge and paragraph writing achievement from both pre-test and post-test are shown in Table 3.



Table 3: Scores of grammar and paragraph writing from pre-test and post-test

Stds	Pre-test				Post-test			
	Gram 1	Gram 2	Total Gram	Prgr	Gram 1	Gram 2	Total Gram	Prgr
	100	50	150	10	100	50	150	10
1	67	26	93	3.5	70	32	102	7
2	33	10	43	3.5	50	22	72	3.5
3	64	26	90	2.5	68	33	101	5.5
4	70	32	102	5.5	75	39	114	6
5	55	23	78	3.5	59	29	88	5
6	55	35	90	6.5	61	30	91	4.5
7	70	27	97	6.5	79	27	106	7.5
8	70	30	100	6.5	71	36	107	6.5
9	56	27	83	4.5	56	38	94	5.5
10	58	18	76	4	71	31	102	4.5
11	81	36	117	6.5	87	44	131	7.5
12	74	29	103	5	81	44	125	6
13	73	26	99	4.5	79	42	121	5
14	57	24	81	4	56	37	93	3.5
15	67	23	90	4.5	76	31	107	7
16	47	21	68	4	62	24	86	4.5
17	61	22	83	5.5	71	33	104	7
18	51	20	71	2.5	67	25	92	4.5
19	58	21	79	3	66	39	105	4
20	32	12	44	0.5	31	14	45	3
21	42	10	52	3.5	52	16	68	2.5
22	77	27	104	6	86	38	124	7.5
23	48	24	72	2.5	55	25	80	4
24	39	19	58	2.5	46	17	63	3.5
25	40	19	59	3.5	38	30	68	3
26	67	28	95	3	72	39	111	6.5
27	35	13	48	1.5	47	27	74	2
28	56	24	80	4.5	63	32	95	4.5
29	67	23	90	3	78	39	117	7.5
30	65	21	86	4	63	30	93	3.5
31	64	20	84	5.5	70	27	97	6.5

Table 3 illustrates the scores of grammatical and syntactic knowledge and paragraph writing achievement before and after involving paragraph writing activities. The trend of the scores is likely that students who had good background knowledge of grammar would get high scores in paragraph writing in both pre-test and post-test.

2.2 Correlations of grammar scores and paragraph scores are shown in Table 4



Table 4: Correlations between grammar scores and paragraph scores

Pre-test			PreGrm1	PrePrg
	PreGrm1	Pearson Correlation	1	.670**
		Sig. (1-tailed)		.000
		N	31	31
	PrePrg	Pearson Correlation	.670**	1
		Sig. (1-tailed)	.000	
Pre-test			31	31
			PreGrm2	PrePrg
	PreGrm2	Pearson Correlation	1	.664**
		Sig. (1-tailed)		.000
		N	31	31
	PrePrg	Pearson Correlation	.664**	1
Post-test		Sig. (1-tailed)	.000	
		N	31	31
			PostGrm1	PostPrg
	PostGrm1	Pearson Correlation	1	.832**
		Sig. (1-tailed)		.000
		N	31	31
Post-test	PostPrg	Pearson Correlation	.832**	1
		Sig. (1-tailed)	.000	
		N	31	31
			PostGrm2	PostPrg
	PostGrm2	Pearson Correlation	1	.570**
		Sig. (1-tailed)		.000
Post-test		N	31	31
	PostPrg	Pearson Correlation	.570**	1
		Sig. (1-tailed)	.000	
Post-test		N	31	31

** Correlation is significant at the 0.01 level (1-tailed)

Table 4 shows the output from Pearson product-moment correlation which confirms that a significant positive relationship exists between grammatical knowledge, syntactic knowledge and writing achievement ($p < .01$) in both pre-test and post-test.

3. Does grammatical and syntactic knowledge contribute to writing fluency and accuracy?

3.1 Writing accuracy was investigated by considering the rate of errors existing in paragraph written in the pre-test and post-test. The rate was calculated through the error frequency per 100 words. Table 5 shows the error rates along with grammatical and syntactic scores of nine students, three of whom were randomly selected from the low-, medium-, and high-grade groups.



Table 5: Grammar scores, amount of words and error rates

Level of students		Grammar 1 (Grammatical score)		Grammar 2 (Syntactic score)		Total grammar		Amount of words		Error rate (Error Frequency / 100 words)	
		Pre 100	Post 100	Pre 50	Post 50	Pre 150	Post 150	Pre	Post	Pre	Post
L	L1	39	46	19	17	58	63	83	219	12.05	18.26
	L2	48	55	24	25	72	80	91	203	18.68	14.78
	L3	33	50	10	22	43	72	70	157	15.71	12.74
	\bar{X}	40.00	50.33	17.67	21.33	57.67	71.67	81.33	193	15.48	15.26
M	M1	56	56	27	38	83	94	128	235	14.06	11.91
	M2	67	72	28	39	95	111	110	281	22.73	10.68
	M3	64	70	20	27	84	97	291	364	8.93	7.42
	\bar{X}	62.33	66.00	25.00	34.67	87.33	100.67	176.33	293.33	15.24	10.00
H	H1	81	87	36	44	117	131	148	321	10.81	4.05
	H2	77	86	27	38	104	124	70	249	5.71	6.02
	H3	74	81	29	44	103	125	76	277	10.53	5.05
	\bar{X}	77.33	84.67	30.67	42.00	108.0	126.67	98.00	282.33	9.02	5.04
All	\bar{X}	59.89	67.00	24.44	32.67	84.33	99.67	118.56	256.22	13.25	10.10

The data in Tables 5 illustrate that grammar scores of all students were improved and the numbers of words increased. Meanwhile the error rates decreased in the medium-grade and high-grade groups. The means of error rates of the medium-grade group declined from 15.24 to 10.00. Similarly, the mean error rates of the high-grade

group reduced from 9.02 to 5.04. Unlike these two groups, the mean error rates of the low-grade group almost unchanged between pre-test and post-test (pre-test error rate = 15.48 and post-test error rate = 15.26).

3.2 Writing Fluency Writing fluency is considered from number of sentences, number of complicated sentences, number of clauses, and number of words in the correct sentences and clauses as shown in Table 6.

Table 6: Fluency in pre-test paragraph writing and post-test paragraph writing

Student Level	Paragraph writing test	Simple sentences	✓ Simple sentences	Compound sentences	✓ Compound sentences	Complex sentences	✓ Complex sentences	Compound & complex	✓ Compound & complex	Run-on Sentence	Fragment	Total Sentence	✓ Total sentences	Total clauses	✓ Total clauses	Total words	Words in ✓ sentences	Words in ✓ clauses	Error rate
L	Pre	5.00	0.67	0.33	-	-	-	-	-	1	1	7.33	0.67	9.67	5.33	81.33	5.00	16.67	15.48
	Post	3.33	0.33	3.00	0.33	2.67	-	0.67	-	1.67	2.67	12.00	0.33	21	3.00	193.00	3.33	21.67	15.26
M	Pre	8.33	1	0.33	-	2.67	-	-	-	0.67	1	13	1	18.67	3	176.33	9.33	20.67	15.24
	Post	7.00	1.67	3.33	0.67	6.67	0.67	0.67	-	1.33	0.67	19.67	3.33	34.33	11.67	293.33	49.33	89.00	10.00
H	Pre	0.33	-	1.33	-	1.33	-	0.33	-	0.67	-	4.00	-	12.67	6.33	98.00	-	43.00	9.02
	Post	3.33	2.00	2.00	0.33	6.67	2.67	1.33	1.00	0.33	-	14.33	5.67	33.00	20.33	282.33	84.00	166.67	5.05
All GP	Pre	5.67	0.67	0.67	0.00	2.22	-	0.11	-	0.67	0.67	10.00	0.67	16.67	3.33	150.22	6.22	28.11	12.71
	Post	4.56	1.33	2.78	0.44	5.33	1.11	0.89	0.33	1.11	1.11	15.33	3.11	29.44	11.67	256.22	45.56	92.44	10.05

L = low grade M = Medium grade H: High grade

Table 6 shows that numbers of sentences, clauses and words in the post-test writing increased from the pre-test in all groups.

Holistically, the numbers of compound, complex, and compound complex sentences increased (0.67 to 2.78, 2.22 to 5.33, and 0.11 to 0.89 respectively). Considering each group, total sentences increased from 7.33 to 12.00, 13 to 19.67, and 4 to 14.33 in the low, medium, and high-grade groups respectively. The total clauses increased from 9.67 to 21, 18.67 to 34.33, and 12.67 to 33 in the three groups respectively. Numbers of words also increased enormously in all groups. The numbers of words in the correct sentences and correct clauses obviously increased in medium-grade and high-grade groups, meanwhile number words in correct sentences decreased in the low-grade group. When types of sentences were considered, the research found that the medium- and high-grade students could develop their writing with all types of sentences, namely simple, compound, complex, and compound complex, with the highest mean of correctness in the high-grade group. Meanwhile students in the low-grade group could write mostly by using simple and compound sentences.

Discussion

1. The participating students could improve their grammatical and syntactic knowledge through writing activities integrated with grammar and syntax exercises. The significant increase of grammar scores found in this study because most grammar exercises were embedded in between the writing activities. While being involved in grammar exercises, students were not just passively taught the set grammar rules for their grammar examination, but they needed to

use the related forms in their writing tasks. Therefore, they learned the grammar meaningfully in the genuine context of communicative writing. This process of learning grammar is very effective as many language educators have claimed. Harmer (2007) notes that students will learn better when engaged in meaning-based tasks than if they are merely concentrating on language forms just for remembering the grammar points. This means learning should grow out of the performance of communicative tasks rather than learning the separated points of language first and then following by having students perform the communicative tasks. Ron Sheen (2003, cited in Harmer, 2007) explains that all classroom activities need to be based on communicative tasks, and that any treatment of grammar should arise from difficulties in communicating desired meaning. In this study, students were involved in the usage of grammar points while writing their paragraph. That means they learned grammar in communicative task context in which enhanced their grammar development.

2. There were significant positive correlations between grammatical knowledge, syntactic knowledge and writing achievement ($p < .01$) in both pre-test and post-test. These findings indicate that grammar knowledge is essential for writing. This is conformed to the notion of linguists who assert the necessity of grammar for writing. They claim that when embedded in writing instruction with the intention to developing learner's ability to communicate meaningfully and appropriately, grammar becomes the integral part of the language use. The linguists with this perspective therefore consider grammar an

essential component of language (Frodesen, 2001 Cited in Scarcella 1996; Lightbown 1998; Widdowson 1988). Inadequacy of syntactic, as well as lexical competence is the main obstacle for some EFL and L2 writers to produce an effective written work (Watcharapunyawong and Usaha, 2013 Cited in Silva 1993; Olsen 1999; Weigle 2002).

3. Regarding writing accuracy, the error rates decreased in the medium-grade and high-grade groups, but the rate stayed still in the low-grade group. It can be concluded that students with appropriate background of grammatical and syntactic knowledge can improve their writing accuracy; meanwhile students with low background knowledge of grammatical and syntactic knowledge cannot improve their language skills even though they have improved their grammar knowledge to a certain level. This finding is consistent with the study by Jones et al. (2013) which found that the contextualized grammar teaching benefitted the ‘more able writers’ than the ‘less able writers’.

4. Regarding writing fluency, numbers of sentences, clauses and words increased in the post-test writing of all groups. In the meantime, numbers of correct sentences and correct clauses increased in the medium-grade and the high-grade groups. Similar trends were found in numbers of words in the correct clauses and correct sentences. According to these findings, it can be concluded that writing fluency as well as accuracy can be developed through writing activities which embed the grammar usage exercises. When the grammar proficiency is developed, it contributes to the devel-



opment of both fluency and accuracy. This finding is consistent with the study by Jones et al. (2013), Fearn and Farnan (2007), and the review by Andrews et al. (2004). All of these study found that when grammar is embedded in writing activities, students will learn to use it to express their ideas accurately. However, this finding cannot be generalized to the students who are very poor in the target language. This exception is also claimed by Jones et al. (2013).

Recommendation

1. Teachers should provide more interesting grammar activities to integrate with writing activities.
2. Because low-grade group could not improve their grammar to the point that they can use it to help their writing understandable, there should be a study to address this unsolved problem.

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