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The Relationship of Grammatical Knowledge and Sentence Structure Knowledge with Cloze Test Based Reading Comprehension

Abstract

The present study attempts to examine the relationship of grammatical knowledge and sentence structure knowledge with reading comprehension of higher education students. The main purpose of this paper is two-fold: first, to explore the reading comprehension of higher education students in the context of their grammatical knowledge level and sentence structure knowledge level; second, to examine correlation of grammatical knowledge and sentence structure knowledge with reading comprehension. The sample consisted of 54 students, who were studying in B.Ed. programme. The study was carried out by administering grammatical knowledge test, sentence structure knowledge test and cloze test. Descriptive analysis, one way ANOVA and pearson 'r' were employed to analyze the data. The study revealed that most of students had moderate level of grammatical knowledge, sentence structure knowledge and reading comprehension. There was significant difference found between the scores for reading comprehension in the context of their levels of grammatical knowledge and in the context of their levels of sentence structure knowledge also. The correlations between grammatical knowledge and sentence structure knowledge with reading comprehension were significant and positive.

Keywords: *Grammatical knowledge, Sentence structure knowledge, Reading comprehension, Relationship*

It is a wrong assumption that a person who can read can comprehend. Reading and reading comprehension are two different aspects. Reading involves translating and decoding text into sounds and spoken words, while reading comprehension involves taking what was just read and constructing meaning from those words. In simpler words, reading comprehension is the ability to read, understand, process, and recall what was just read. It is the act of thinking and constructing meaning before, during and after reading by integrating the information presented by the author with the reader's background knowledge (Sweet & Snow, 2003; Snider, 1989). Reading comprehension is a cognitive process that is extremely complex. The process provides readers maximum information from a text with the minimum misunderstanding. Scholars say that it is a special kind of thinking which involving several abilities. According to Armbruster (2000, pp. 41) imperfect reading comprehension is the basic reason for not understanding what is being read. If readers are reading but not getting any meaning of what is being read, then it not reading at all. Reading depends on the ability to decode, understand and find meaning of the text. It shows level of understanding the text. Reading comprehension is center point of the reading. Reading process is not complete without reading comprehension.

Reading comprehension increases the enjoyment and effectiveness of reading. It is the very useful skill to develop academic, professional and personal identity. Reading comprehension skill is also necessary for passing academic achievement tests and for being able to read effectively for one's career. Findings of many researches showed importance of reading comprehension.

There is research that shows that reading comprehension has a tremendous effect on achievement in mathematics as well as science because there is positive correlation between reading comprehension and student achievement in both mathematics and science (Akbaşlı; Şahin & Yaykiran, 2016). The findings from one research showed significant and positive relationship between reading comprehension and academic achievement (Menaka & Justin Jebaraj, 2017). The correlation between reading comprehension and reading attitude was positive (Windra Dwie Agustiani, 2017). Writing ability and translating ability depends upon reading comprehension because, there is a positive correlation between reading comprehension, and writing and translating ability (Rahemi; Jufri & Havid Ardi, 2013). Reading fluency is closely associated with reading comprehension (Ching Pey; Hui Min & Lay Wah, 2014).So it becomes important to know the factors that influence students' reading comprehension. Does the grammatical knowledge and the sentence structure knowledge affect the reading comprehension? The question led researchers to conduct the study.

Objectives of the Study

1. To examine the levels of grammatical knowledge, sentence structure knowledge and reading comprehension of higher education students.
2. To examine reading comprehension of higher education students in the context of their grammatical knowledge level, sentence structure knowledge level.
3. To examine correlations of grammatical knowledge, sentence structure knowledge with reading comprehension

Hypotheses of the Study

Keeping in mind the above mentioned objectives following null hypotheses were formulated:

H_{01} There will be no significant relationship between mean score obtained on reading comprehension test by the higher education students who had high, moderate and low level grammatical knowledge.

H_{02} There will be no significant relationship between mean score obtained on reading comprehension test by the higher education students who had high, moderate and low level sentence structure knowledge.

H_{03} There will be no significant correlation between grammatical knowledge and cloze test based reading comprehension of higher education students.

H_{04} There will be no significant correlation between sentence structure knowledge and cloze test based reading comprehension of higher education students.

Operational Definition of the Terms

Grammatical Knowledge. The total score obtained on grammar test by the student was considered as grammatical knowledge. The grammatical knowledge was categorized in three levels: High, moderate and low.

Sentence Structure Knowledge. The total score obtained on sentence structure knowledge test by the student was considered as sentence structure knowledge of the student. The sentence structure knowledge was categorized in three levels: High, moderate and law.

Reading Comprehension. The total score obtained on cloze test by the student was considered as reading comprehension of the student. The reading comprehension was categorized in three levels: High, moderate and low.

Sample of the Study

The sample consisted of 54 students, studying in the B.Ed. programme (2017-18) at Faculty of Education, Gujarat Vidyapith.

Tools of the Study

Grammatical knowledge test. The tool was used to measure grammatical knowledge of higher education students. 26 multiple

choice questions were given in the tool. The respondents had to tick mark against the correct option. Each correct answer carried 1 mark and each incorrect answer carried 0 marks. The Chronbach alpha reliability value of the tool was 0.67, Spearman Brown Coefficient value was 0.57 and Guttman Split Half Coefficient value was 0.53. Clifs Consistency Index – 'C' which indicates the validity of the test battery was 0.57.

Sentence structure knowledge test. The tool was used to measure sentence structure knowledge of higher education students. 14 multiple choice questions were given in the tool. The respondents had to tick mark against the correct option. Each correct answer carried 1 mark and each incorrect answer carried 0 marks. The Chronbach alpha reliability value of the tool was 0.54, Spearman Brown Coefficient values was 0.39 and Guttman Split Half Coefficient value was 0.56. Clifs Consistency Index – 'C' which indicates the validity of the test was 0.58.

Cloze test. The tool was used to measure reading comprehension of higher education students. A paragraph was given in the test. Total 66 words included in the paragraph. There were 23 blanks in the paragraph. The respondents had to put appropriate word in the blank. Each correct answer carried

1 mark and each incorrect answer carried 0 marks. The Chronbach alpha reliability value of the tool was 0.73, Spearman Brown Coefficient values was 0.55 and Guttman Split Half Coefficient value was 0.61. Clifs Consistency Index – 'C' which indicates the validity of the test was 0.71.

Data Collection and Analysis

Tools of the study were administered to collect data in a normal classroom condition. The respondents were given general information and instruction regarding response submission method. No time limit was imposed for responding. Total 54 higher education students had given responses on the grammar test, the sentence structure knowledge test and the cloze test.

After tabulation of data, descriptive statistics, pearson 'r' and one way ANOVA were employed to analyze the data.

Results

To categorize three levels of grammatical knowledge, sentence structure knowledge and reading comprehension of higher education students *Mean +/- sd* formula was applied. The results are presented in Table 1.

Table 1: Grammatical knowledge, Sentence structure knowledge and reading comprehension of higher education students

Variable	Level	Score	N	Percentage
Grammatical knowledge	Low	> 9.011	9	16.66
	Moderate	9.011 to 16.769	38	70.37
	High	16.769	7	12.96
Sentence structure knowledge	Low	<6.476	10	18.51
	Moderate	6.476 to 11.564	36	66.66
	High	>11.564	8	14.81
Reading comprehension	Low	< 8.072	11	20.37
	Moderate	8.072 to 16.808	32	59.25
	High	> 16.808	11	20.37

Table 1 show that 16.66 % students had low; 70.37% students had moderate and 12.96 % students had high level of grammatical knowledge. The results revealed that most of students had moderate level of grammatical knowledge.

The 18.51 % students had low; 66.66% students had moderate and 14.81 % students had high level of sentence structure knowledge. The results revealed that most of students had moderate level of sentence structure knowledge.

The 20.37 % students had low level reading comprehension; 59.25% students had moderate level reading comprehension and 20.37 % students had high level reading comprehension. The results revealed that most of students had moderate level reading comprehension.

In the present study, four null hypotheses were formulated. The descriptive statistics of the first and second hypotheses testing are presented in Table 2.

Table 2: Descriptive statistics for the first and second hypothesis

Variable	Level	N	Mean	Std. Dev.
Grammatical knowledge	High	7	19.86	1.676
	Moderate	38	12.53	2.689
	Low	9	6.33	0.866
Sentence structure knowledge	High	10	5.20	0.632
	Moderate	36	9.22	1.376
	Low	8	12.88	0.991

The means presented in Table 2 are further analyzed using analysis of variance to find out the relationship between grammatical knowledge, reading comprehension and sentence structure knowledge. The results are presented in Table 3.

Table 3: Relationship of grammatical knowledge level and sentence structure knowledge level with reading comprehension

Variable	Source of Variance	Sum of Squares	df	Mean Squares	F-value	Sig level
Grammatical knowledge	Between groups	721.003	2	360.501	63.326	0.01
	Within groups	290.331	51	5.693		
	Total	1011.333	53			
Sentence structure knowledge level	Between groups	266.284	2	133.142	88.533	0.01
	Within groups	76.697	51	1.504		
	Total	342.981	53			

Table 3 shows that the Sum of squares between groups of grammatical knowledge level was 721.003 and within groups was 290.331. Mean square between groups was 360.501 and within groups was 5.396. F-value was 63.326. The calculated value was greater than the table value. Therefore the null hypothesis was not accepted. There was significant difference in reading comprehension of higher education students in the context of grammatical knowledge level.

Table 3 also shows that Sum of squares between groups of sentence structure knowledge level was 266.284 and within groups was 76.697. Mean square between groups was 133.142 and within groups was 1.504. F-value was 88.533. The calculated value was greater than the table value. Therefore the null hypothesis was not accepted. There was significant difference in reading comprehension of higher education students in the context of their sentence structure level.

Researchers employed post hoc test LSD to know specific groups difference. Results are presented in Table 4.

Table 4: Summary of LSD analysis on grammatical knowledge and sentence structure knowledge

Variable	Group 1	Group 2	Mean dif	Sig level
Grammatical knowledge	Law	Moderate	6.193	0.05
	Moderate	High	13.524	0.05
	High	Law	7.331	0.05
Sentence structure knowledge	Law	Moderate	4.022	0.05
	Moderate	High	3.653	0.05
	High	Law	7.675	0.05

Table 4 shows that there was a significant mean difference between the reading comprehension scores of the students of group 1 and group 2. On the basis of mean value, it was concluded that the students who had high level of grammatical knowledge had higher level of reading comprehension than the students who had moderate level of grammatical knowledge. The students who had moderate level of grammatical knowledge had higher level of reading comprehension than the students who had low level of grammatical knowledge. The students who had high level of grammatical knowledge had higher level of reading comprehension than the students who had low level of grammatical knowledge.

There was a significant mean difference between the vocabulary scores of the students of group 1 and group 2. On the basis of mean value, it was concluded that the students who had high level of sentence structure knowledge had higher level of reading comprehension than the students who had moderate level of sentence structure knowledge. The students who had moderate level of sentence structure knowledge had higher level of reading comprehension than the students who had low level of sentence structure knowledge. The students who had high level of sentence structure knowledge had higher level of reading comprehension than the students who had low level of sentence structure knowledge.

The results of the third hypothesis testing are presented in Table 5.

Table 5: Correlation between grammatical knowledge and reading comprehension

Variable	N	Mean	Std. Deviation	Pearson 'r'
Grammatical knowledge	346	6.26	2.661	0.589*
Reading comprehension	346	6.42	2.370	

* Significant at the 0.01 level

The observation of Table 5 shows that pearson 'r' was calculated to examine the correlation between grammatical knowledge and reading comprehension. There was significant and positive relationship between grammatical knowledge and reading comprehension (r = 0.589, N = 54, p = 0.000). Therefore the null hypothesis was not accepted. These results suggested that as the grammatical knowledge increases, reading comprehension increases. The results of the fourth hypothesis testing are presented in table 6.

Table 6: Correlation between sentence structure knowledge and reading comprehension

Variable	N	Mean	Std. Deviation	Pearson 'r'
Sentence structure knowledge	346	6.38	2.371	0.500*
Reading comprehension	346	6.42	2.370	

* Significant at the 0.01 level

The observation of Table 6 shows that pearson 'r' was calculated to examine the correlation between sentence structure knowledge and reading comprehension. There was significant and positive relationship between sentence structure knowledge and reading comprehension (*r* = 0.500, N = 54, *p* = 0.000). Therefore the null hypothesis was not accepted. These results suggested that as the sentence structure knowledge increases, the reading comprehension also increases.

Discussion

The results of this study reveals that most of students studied had a moderate level of grammatical and sentence structure knowledge and basic reading comprehension ability. What is of concern is why only a small number of students are at high level in grammatical and sentence structure knowledge with reading comprehension ability may be a question of interest for the future researchers.

Results of this study showed a significant difference in reading comprehension of higher education students in the context of their grammatical knowledge level. There was a significant and positive relationship between grammatical knowledge and reading comprehension. The result was in line with the results of the studies by Alderson (1984), Martiarini (2015), Karyadi (2016), Rahmawati (2016), Muharni, (2017), *Ulfatussyarifah (2017),* Fitriyeni (2018), Septiani, Diem and Yunus (2018), Yuliawati (2018) and Styaningrum (2019). The results of these studies on the whole suggest that the person having better grammatical knowledge holds better reading comprehension. It is indicated that the mastery over grammar is critical to increase students' comprehension of the text.

Results of this study showed that there was a significant difference in reading comprehension of higher education students in the context of their sentence structure knowledge level. It also showed significant and positive relationship between sentence structure knowledge and reading comprehension. Many past research findings supported this finding. The study by Morvay (nd), Shioutsu and Weir (2007), and Mokhtari & Niederhause (2013) showed results similar to the present study. The findings of both studies lead to the conclusion that sentence structure knowledge is important in reading comprehension.

Reading may be improved by students' grammatical knowledge. Therefore, academicians should motivate students to use grammar manuals and reference books for improvement of grammatical knowledge. Students should be given more opportunities to apply grammatical knowledge in writing and speaking exercises. A teacher should point out their grammatical errors found in the written and verbal communication. Teaching of grammar should be made more interesting, interactive and effective. Students should always pay more attention to the grammatical composition in their daily reading-writing related activities, be in oral or written form. Student can express orally or in written form is he has sufficient hold on grammatical structures and he will be confident in expression as well.

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