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The Impact of Metacohesive Awareness on Reading Comprehension of Different Text Genres by Iranian Efl Students

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Abstract

This study attempted to investigate the effect of the reader's awareness of the cohesion elements simultaneously with his/her reading task, labeled as *metacohesive awareness* in this study, on the reading comprehension performance of the reader for different text types (i.e., academic, literary, and general English texts) across different proficiency levels. ANOVA analyses indicated that the subjects' language proficiency level had a significant effect on the subjects' performance. T-test results revealed that metacohesive awareness had a significant direct effect on the subjects' reading comprehension of the texts across lower language proficiency levels and that this effect was, however, reversed for the higher proficiency levels, especially for the proficient subjects. Interaction analyses disclosed no interaction effects, the only main effect belonging to language proficiency. Finally, the regression results indicated that the language proficiency level was a very good predictor of the subjects' scores on cohesion performance and text type performance.

Key Words: cohesion, cohesive ties, metacognition, metacohesive awareness, noticing.

Introduction

One of the research areas in SLA that has absorbed some researchers is concerned with factors which are involved in reading comprehension of different texts by ESL/EFL readers. In this regard, there are researchers who have shown interest in investigating factors such as: syntactic structure of texts, context facilitation, prior knowledge, syntactic complexity and reading topic, L_1 strategies and L_2 syntactic structures in L_2 sentence comprehension, and text familiarity (Blau, 1982; Alexander, 1998; Barry & Lazarte, 1998; Salmani-Nodoushan, 2003). Some other researchers have found an interest in the role of vocabulary in reading comprehension of ESL texts, focusing on second language reading and vocabulary learning, interactive vocabulary instruction, unknown vocabulary density, etc (Zimmerman, 1997; Hsueh-chaco & Nation, 2000). Still, there are researchers who have put the texture of the reading texts under investigation, concentrating on teaching text structure and awareness of text structure, which is part of the interest for the present study (Carrell 1985, 1990; Nation & Snowling, 2000). In the present study, we have dealt with the cohesion aspect of texts, as another factor involved in understanding different texts types by L_2 readers. Specifically, we have endeavored to investigate the effect of cohesion awareness on readers' achievement, inspired by a metacognitive approach to this question.

Research Questions And Hypotheses

This study has attempted to answer the following questions:

Does metacohesive awareness lead to greater rate of understanding a Literary Text by Iranian EFL Students?

Does metacohesive awareness lead to greater rate of understanding an Academic Text by Iranian EFL Students?

Does metacohesive awareness lead to greater rate of understanding a General Text by Iranian EFL Students?

Does metacohesive awareness account for a greater share of variance than language proficiency?

Thus, this study has attempted to test the following hypotheses:

Metacohesive awareness leads to greater rate of understanding a Literary Text by the Iranian EFL Students.

Metacohesive awareness leads to greater rate of understanding an Academic Text by Iranian EFL Students.

Metacohesive awareness leads to greater rate of understanding a General English Text by the Iranian EFL Students.

Metacohesive awareness accounts for a greater share of variance than language proficiency level.

Methodology

Subjects

The subjects of this investigation who were 477 in number were randomly selected from a population that constituted the senior and junior EFL students who were busy studying English in University of Tehran, Zanjan University, and Payame-nour University of Zanjan, majoring in English Translation or English Literature. Then, the subjects were given the IELTS proficiency test (University of Cambridge Local Examinations Syndicate, 2000) on the basis of which they were designated as belonging to four proficiency levels: proficient, fairly proficient, semi-proficient, and non-proficient. Hereafter, these proficiency labels will be indicated in the following abbreviated forms respectively: PROF, FAP, SEP, and NOP. These proficiency levels were operationally defined by using the Recode outfit provided by the SPSS package. I was not alone in this approach but was supported by Pallant (2001), who elaborated on the procedure for collapsing a continuous variable into groups. On this, she wrote:

"For some analyses (e.g., Analysis of Variance) you may wish to divide the sample into equal groups according to respondents' scores on some variable, (e.g., to give low, medium and high scoring groups). … I will break the continuous variable *age* into three approximately equal groups. … Before we can divide up the scores into equal groups, we first need to inspect the distribution of scores on the continuous variable and determine the cut-off points that will be used to divide the sample into low, medium and high groups. We will than create a new variable (agegp), which only have three different values (1 = low, 2 = medium, 3 = high). …. (Pallant, 2001, pp. 81-85). "

Thus, the researchers employed the percentiles of 25, 50, and 75 as the three cut-off points that became the yardsticks for putting each subject into one of the four proficiency levels above, based on the IELTS scores. Accordingly, the PROF group consisted of those subjects who scored from 76 to 100 percent of the IELTS total score. A total of 117 subjects belonged to this group, that is, 24.5 percent of the subjects were found to be proficient based on their performance on the IELTS. Similarly, the subjects who scored from 51 to 75 percent of the total IELTS score were assigned to the second group, i.e., the FAP group. This group consisted of 117 subjects, constituting 24.5 percent of the total subjects. The SEP group was decided to be those subjects who scored from 26 to 50 percent of the total IELTS score. This group included 114 members, hence making up 23.9 percent of the total population of the participants. Finally, those participants whose IELTS scores fall between 0 and 25 percent of the total IELTS score were placed in the last class, namely the NOP group. Hence, 129 subjects were found to be non-proficient, signaling 27.1 percent of the entire subjects.

From another perspective, the whole subjects were randomly divided into two almost equal groups of A and B. On the basis of coin- flipping strategy, the members of group A were given the Non-metacohesive Test

modules, whereas the subjects in group B were assigned the responsibility to handle the Metacohesive Test modules. An operational definition for 'metacohesive awareness' appears below.

Instruments

In order to obtain the required data for this study, we utilized seven types of instruments: IELTS, MTGE, MTAE, MTLE, NTGE, NTAE, and NTLE. A description for each of these is provided below.

Our purpose of using the IELTS proficiency test was a twofold one, that is, the IELTS was needed: a) to determine the participants' proficiency levels so that the effect of different proficiency levels, delineated above, on the dependent variable could be studied along with the effect of the other major independent variables and b) to use it as the criterion by which to ascertain the criterion-referenced validity of the other instruments described below.

Procedure

During the item construction process, 15 items were constructed for each passage and then these were administered to a pilot group of 40 TEFL students in Zanjan University who were selected from the same subject population for this study. The purpose of this administration was to screen Item Facility (IF), Item Discrimination (ID) as well as a balanced choice distribution for the individual items. Based on the results of this item analysis, 10 effective items (five multiple types and five true/false/not-given types) were selected for each passage. Thus every test consisted of three passages and 30 items, the first 10 item focusing on "conjunction", the second 10 on "reference", and the third 10 on "substitution" as described earlier.

After a lapse of three weeks, to neutralize the practice effect, from the test construction stage described in the above, it was time to put the

reliability and validity of the tests/ instruments under scrutiny. Thus, the same afore-mentioned pilot group consisting of 40 members was randomly divided into two halves of 20 members. Then, in one session they were all given the IELTS proficiency test. In the following two successive sessions, one group was given the NT modules (NTGE, NTAE, NTLE), and other group received the MT modules (MTGE, MTAE, MTLE). In order to asses the validity of the MT's and NT's, I found the correlation coefficients between each MT and NT module and the IELTS, applying SPSS package. All the coefficients indicated quite acceptable indexes, the smallest being between MTGE and IELTS which indicated an index of .82. The reliability of the MT and NT modules was also calculated which yielded acceptable reliability indexes, the smallest of which belonged to MTGE (r = .78)

For the actual data collection purpose, now every thing was at hand for us to implement the whole project, employing all the finalized versions of the instruments. To this end, all the instruments, i.e. the MT's, NT's, and the IELTS were administered to a total of 477 subjects who were selected from among senior and junior EFL students major in English Translation or English Literature. These subjects were studying in the University of Tehran, Zanjan University, and Payame-nour University of Zanjan. The procedure here was similar to that of the pilot implementation of which an in-depth discussion was given above. The statistical analysis of the data revealed that the validity and reliability indexes for all the instruments were satisfactory enough.

Results And Discussion

The data were then submitted to statistical analyses including (a) one-way ANOVA, (b) two-way ANOVA, (c) T-test analysis, and (d) multiple regression analyses. The results of data analyses are reported in tables 1 through 18in the Appendix.

Different one-way-between-group analyses of variance were conducted to measure the mean differences of the groups based on the variables of the study. The test that was employed for all the post hoc comparisons was that of Tukey's Honestly Significant Difference Test (i.e., Tukey's HSD). Another alternative for the researchers was the Scheffe test for the same purpose. The logic behind this preference was the fact that the Scheffe test endeavors to control for type 1 error which occurs when the null hypothesis is wrongly rejected. However, this control for type 1 error is done at the expense of the test power that is an important criterion for researchers. Pallant (2001) rigorously elaborates on this:

'Ideally we would like the tests that we use to correctly identify where in fact there is a difference between our groups. This is called the *power* of the test …. Two of the most commonly used post-hoc tests are Tukey's Honestly Significant Different (HSD) test and the Scheffe test. Of the two, the Scheffe test is the most cautious method for reducing the risk of a Type 1 error. However, the cost here is POWER [my capitalization]. You may be less likely to detect a difference between your groups using this approach' (pp. 173 & 175).

A one-way ANOVA using Tukey's Honestly Significant Difference Test (i.e., Tukey's HSD) was conducted to measure the effect of proficiency (as measured by the IELTS), as the independent variable, on the whole subjects' performances on the cohesion type subsets (i.e., conjunction, reference, and substitution) as the dependent variables.

A one-way ANOVA using Tukey's Honestly Significant Difference Test (i.e., Tukey's HSD) was conducted to measure the effect of the subjects' language proficiency level (as measured by the IELTS), as the independent variable, on the whole subjects' performances on the text type subsets (academic, literary, and general) as the dependent variables.

Three independent-samples T-tests were conducted to measure the effect

of metacohesive awareness on the subjects' performance on the dependent variables of cohesion type, text type, and item type. The subjects selected for this analysis belonged to the NOP language proficiency level.

The independent-samples T-test results displayed a significant mean difference between the two groups concerning their performance on conjunction ($\underline{M}_1$ = 54, $\underline{M}_2$ = 49.04, p<.0151) and substitution ($\underline{M}_1$ = 57.33, $\underline{M}_2$ = 51.90, p<.0451) cohesion type modules. However, the Eta squared values for the conjunction and substitution amounted to .0946 and .0320 respectively, which, based on Cohen's (1988) ratings, indicated a small effect size for the independent variable (metacohesive awareness). Also, the variance percentages showed that only 4.68 percent of the total variance on conjunction module was accounted for by the effect of metacohesive awareness. This percentage for the involvement of the metacohesive awareness in the total variance for substitution was 3.20 percent. Also, the T-test results indicated that the only significant mean difference between the two groups was found to exist in their performance on the academic text ($\underline{M}_1$ = 61.55, $\underline{M}_2$ =52.85, p<.0001). The magnitude of the effect (Eta Squared = .1346) stood on the borderline for large effect size, according to Cohen (1988), who designated the Eta value at .14 as being equal to large effect size. Also, the variance percentage indicated that 13.46 percent of the total variance on the academic text module was explained by the effect of metacohesive awareness. Finally, according to the T-test results, the only significant mean difference between the two groups involved their performance on the multiple-choice items ($\underline{M}_1$ = 58.37, $\underline{M}_2$ =52.77, p<.0161). The magnitude of the effect (Eta Squared = .0461) turned out to be small, according to Cohen (1988), who designated the Eta value at .06 as being equal to small effect size. Also, the variance percentage indicated that only 4.61 percent of the total variance on the multiple-choice items was explained by the effect of the subjects' metacohesive awareness.

Three independent-samples T-tests were conducted to measure the effect of metacohesive awareness on subjects' performance on the dependent variables of cohesion type, text type, and item type. The subjects for this analysis belonged to the SEP language proficiency level.

The T-test results revealed that no significant mean differences were found to exist between the aware and unaware FAP subjects' performance on the conjunction ($\underline{M}_1$ = 70.60, $\underline{M}_2$ =66.47, p<.0651), reference ($\underline{M}_1$ = 61.66, $\underline{M}_2$ =63.92, p<.3201) and substitution ($\underline{M}_1$ = 70.60, $\underline{M}_2$ =68.23, p<.3581) cohesion type modules. Also, the T-test results indicated that the only significant mean difference between the two aware and unaware groups belonging to the FAP language proficiency level was found to exist in the aware subject's performance and their unaware counterparts' performance on the general text type ($\underline{M}_1$ = 64.09, $\underline{M}_2$ =57.45, p<.0101). The magnitude of the effect (Eta Squared = .0567) was found to be small, according to Cohen's (1988) criterion. Also, the variance percentage indicated that only 5.67 percent of the total variance on the general text type was attributed to the effect of the subjects' metacohesive awareness. As to the groups' performances on the academic text ($\underline{M}_1$ = 71.51, $\underline{M}_2$ =70.58, p<.7031) and literary text ($\underline{M}_1$ = 67.27, $\underline{M}_2$ =70.58, p<.1931) type modules, no statistically significant mean difference was displayed between the metacohesively aware and unaware FAP subjects. The T-test analysis, however, did not reveal any significant mean difference between the aware and unaware FAP subjects' performance on the multiple-choice items ($\underline{M}_1$ = 72.92, $\underline{M}_2$ =71.76, p<.6131) as well as on the true-false items ($\underline{M}_1$ = 62.32, $\underline{M}_2$ =60.65, p<.3901).

A two-way between-groups analysis of variance was conducted to measure the main effects of the above-mentioned independent variables on the entire subjects' performance on cohesion (as measured by the cohesion subsets of the instruments) as well as to explore any possible meaningful

interactions. This interaction analysis showed that the only statistically significant main effect was found to exist for proficiency level [F (3, 1419) = 243.74, p = .0005], and the effect size was very large (Eta squared = .34). No main effect existed for cohesion type and text type factors. Nor were there any significant interaction effects for the independent variables involved.

A two-way between-groups analysis of variance was conducted to measure the main effects of the independent variables: proficiency level, cohesion type, and text type on the entire subjects' text performance (as measured by the text type subsets of the instruments) as well as to explore any possible meaningful interactions. This analysis disclosed that the only statistically significant main effect went to proficiency level [F (3, 1419) = 225.59, p = .0005], and the effect size was very large (Eta squared = .32). No main effect existed for cohesion type and text type factors. Nor were there any significant interaction effects for the respective independent variables.

A two-way between-groups analysis of variance was conducted to measure the main effects of the independent variables: proficiency level, cohesion type, and text type on the metacohesively-aware subjects' cohesion performance (as measured by the cohesion type subsets of the instruments) as well as to explore any possible meaningful interactions. This analysis revealed that the only statistically significant main effect belonged to proficiency level [F (3, 699) = 243.74, p = .0005], and the effect size was found to be large (Eta squared = .20). No main effect existed for cohesion type and text type factors. Similarly, no significant interaction effects for the independent variables were found.

A two-way between-groups analysis of variance was launched to measure the main effects of the independent variables: proficiency level, cohesion type, and text type on the metacohesively-aware subjects' text performance (as measured by the text type subsets of the instruments) as well as to explore any possible meaningful interaction effects. The analysis

showed that the only statistically significant main effect went to proficiency level [F (3, 699) = 59.77, p = .0005], and the magnitude of effect proved to be large (Eta squared = .20). No main effect existed for cohesion type and text type factors. Nor were there any significant interaction effects for the respective independent variables.

A two-way between-groups analysis of variance was conducted to measure the main effects of the independent variables: proficiency level, cohesion type, and text type on the metacohesively-unaware subjects' cohesion performance (as measured by the cohesion type subsets of the instruments) as well as to explore any possible meaningful interactions. This analysis disclosed that the only statistically significant main effect was found for proficiency level [F (3, 708) = 271.747, p = .0005], and the effect size was found to be very large (Eta squared = .53). No main effect existed for cohesion type and text type factors. Similarly, no significant interaction effects for the independent variables were found.

A two-way between-groups analysis of variance was conducted to measure the main effects of the independent variables: proficiency level, cohesion type, and text type on the metacohesively-unaware subjects' text performance (as measured by the text type subsets of the instruments) as well as to explore any possible meaningful interaction effects. The results of this analysis revealed that the only statistically significant main effect was found for proficiency level [F (3, 708) = 221.309, p = .0005], and the effect size proved to be very large (Eta squared = .48). No main effect existed for cohesion type and text type factors. Nor were there any significant interaction effects for the respective independent variables.

Conclusion

One-way ANOVA analyses revealed that language proficiency had a significant effect on the whole subjects' performance on cohesion type, text

type, and item type. In other words, the higher the proficiency level was, the better the performance was found to be on 'conjunction, 'reference', and 'substitution' cohesion types. Also, the higher the proficiency level was, the better was the subjects' performance on text type (academic, literary, and general) as well as on the item type (multiple-choice and true-false). Thus, across the four proficiency levels designated as NOP, SEP, FAP, and PROF, the best performance belonged to the PROF subjects, and the weakest performance went to the NOP subjects. This is in line with so many research findings in SLA according to which language proficiency plays the prime role in the SLA issues (Baker & Brown, 1984; Block, 1986; Garner, 1987; Carrell, 1989; Anderson, 1991; O'Neil and Todaro, 1991; Pressley & Afflerbach, 1995; Zhang, 2001; Yang; 2002). In general, the T-test analyses signaled that the significant effect of metacohesive awareness on the subjects' performance was positive at the lowest proficiency level, NOP and negative at the highest proficiency level, PROF. In other words, the aware NOP subjects performed better than the unaware NOP subjects on the respective dependent variables due to the positive effect of 'metacohesive awareness', whereas the aware PROF subjects performed worse than the unaware PROF subjects on the respective dependent variables due to the negative effect of 'metacohesive awareness'. Also, the other proficiency levels standing between these two extremes tended to follow a similar pattern. This finding appears to stand in opposition to previous research findings which purport the contention that proficient L_2 learners seem to benefit from metacognitive awareness more effectively than non-proficient L_2 learners. It is worth mentioning that no cases for multi-collinearity (for further information see Bryman & Cramer, 1999, p.254) was found in the regression analyses (tolerances = 1.00).

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