Effect of Teaching Sentence-Level-Formal Schemata on Inferring Meaning

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Introduction

When a student comes across an unfamiliar word while reading, it is natural for her to ask her teacher or a friend, or to refer to a dictionary for its meaning. However, the friend / teacher, or dictionary may not always be available. Even if a dictionary is available, one has to not only interrupt the thought process but also reduce the reading speed to refer to it. As rightly argued by Nuttall (1996, p.69), "constant need to refer to a dictionary makes effective reading very difficult and an effective reader can cope with these occasional interruptions by inferring meaning from context". Therefore, the ability to infer the meaning of unfamiliar words is a vital aspect of effective reading comprehension,especially for L2 students. Accordingly, Nuttall (1996) calls for developing the ability to infer meaning from the context to make students independent of a dictionary or informant. She lists two objectives of a specific training programme for L2 students to infer meaning from context must include (p.70):

1. To show that it is possible to understand unfamiliar words without referring to a dictionary or being told by someone as most students are not aware that is possible.

2. To encourage students to adopt a positive attitude ("I can understand if I try") towards unfamiliar words instead of a negative one ("Help! I need a dictionary").

The background knowledge of a language learner plays asignificant role in understanding the inferential meaning of an unfamiliar word.

The background knowledge plays an important role in distinguishing 'inferring' from 'guessing'. According to the Cambridge Advanced Learner's Dictionary, the former is "to form an opinion or guess that something is true because of the information that you have", whereas the latter is "to give an answer to a particular question when you do not have all the facts and so cannot be certain if you are correct" (emphasis is mine). The above definitions suggest that while 'inferring' involves deducing the meaning of unfamiliar words with confidence and from the available contextual clues, 'guessing' involves speculating the meaning without certainty and confidence. Though the word 'guessing' is popular among educational circles, 'inference' has been used in this study considering the role of background knowledge in both the processes.

The theory that examines the role of background knowledge in language comprehension is known as the schema theory, according to which, comprehending a text is "an interactive process between the reader's background knowledge and the text. Efficient comprehension requires the ability to relate the textual material to one's own knowledge" (Carrell & Eisterhold, 1983, p. 556-557). A distinction is made between *content* schemata and *formal* schemata (Carrell & Eisterhold, 1983).Content schemata refers to the background knowledge of the content domain of a text. For example, knowledge of religion can be a significant determinant of how much a reader understands and gets pleasure from reading a religiously loaded literary text such as John Milton's 'Paradise Lost'. Formal

schemata refers to the background knowledge of the formal organizational structures of different types of text and the different discourse markers used in them. For example, previous research identified five types of discourse structures: collection, description, causation, problem/solution, and comparison (Meyer & Freedle, 1984). Each discourse structurehas a distinct purpose and a rhetorical organizational construction. From an instruction perspective, the formal schemata of students can be enhanced practicably in the classroom whereas content schemata cannot. Carrell (1985) examined the effect of teaching rhetorical organization on comprehension and found optimistic results even though much of the research centred on examining the effect of formal schemata on comprehension at a text level. An experiment carried out by Li (1988) on discrete, semantically disconnected sentences is particularly relevant to this study as it pertains to the sentence-level schemata. Li (1988) found that students who received cue-adequate sentences performed significantly better on both inferring the meaning of unfamiliar words and remembering them, than students who received cue-inadequate sentences.

Need for the Study

Li's study was primarily necessitated by the participants who were attending classes of the UGC Remedial English Programme as they had asked the researcher to assist them in dealing with unfamiliar words while reading. It was assumed that the participants were not utilizing the context when dealing with such words, nor were they confident about dealing with them. Confidence plays a vital role in reading because if students do not trust their own inferences, they will abandon their attempts and stop reading (Mathioudakis, 2009). Considering the above two assumptions, an intervention on raising participants' awareness of the sentence-level-

formal schemata was designed, so as to develop their ability to infer the meaning of unfamiliar words from context and build their confidence in doing so. Concurrent to the pragmatic need, the theoretical rationale was provided by Li's study (1988) and Schema theory (Carrell & Eisterhold, 1983). The present study fills the research gap since not much research has been carried out to examine the effect of sentence-level-formal schemata on inferring the meaning of unfamiliar words from context.

Methodology

Objectives: 1) To find out whether the participants were using context when they came across unfamiliar words and, 2) To study the effect of raising the participants' awareness of the sentence-level-formal schemata on their ability to infer meaning of unfamiliar words from context and their confidence in doing so.

Method: All participants were pre-tested, took part in the intervention and were then post-tested.

Subjects: All seven participants are male students (aged between 21 and 26 years) and are studying Masters Programmes at the University of Hyderabad. All of them enrolled for the UGC Remedial English Programme to improve their English language skills.

Materials: 1) A test of inferring ability was constructed for the pre and post-tests. The test comprised ten items. In each item, one expression was put in bold for the participants to infer its meaning from the context. The participants were asked to: a) write their inference, b) indicate their confidence level regarding their inference in percentage terms, and c) describe the rationale behind their inference, 2) one sentence each for cause and effect, contrast and similarity was given in that order at the interactive intervention session for raising the participants' awareness of sentence-

level-formal schemata. In the following examples the underline indicates the discourse marker and the bold unfamiliar word indicates the inference:

a. I didn't sleep well <u>because</u> my neighbour's dog **was yelping** all night.

b. <u>Although</u> some old people **abhor** change, most of them enjoy new things and experiences.

c. The land was <u>as</u> **arid** <u>as</u> the Sahara desert.

Procedure: The ten-item test was administered as a pre-test. The average time taken for the pre-test was 33 minutes. After the pre-test, an interactive session was conducted for 20 minutes. First, the participants were asked whether they knew the meanings of the words assumed to be unfamiliar to them. Then, each sentence was written on the blackboard and a discussion on inferring was initiated. Finally, the different discourse markers used for expressing cause and effect, contrast and similarity were discussed. Participants were requested not to prepare notes during the interactive session; this was because we did not want them to refer to their notes in the post-test. After the intervention, the post-test was administered. The average time taken for the post-test was 26 minutes. Both in pre and post-tests, participants were asked to write their inference for the expressions in bold, report their confidence in their inference in percentage terms, and give the rationale behind their inference. The entire process of the pre-test, intervention and post-test was completed in one hour and forty minutes.

Analysis: Analysis of the responses of the participants was carried out both qualitatively and quantitatively. Qualitative analysis was carried to find out whether the participants were using context or not when they came across unfamiliar words. The assessment of the accuracy of the inference was quite challenging as there was more than one correct answer.

Following Mathioudakis (2009), the accuracy of the inferences was placed on a continuum of an assessment bar rather than just marking 'correct' or 'wrong'. The continuum runs from completely inaccurate (0%), to completely accurate (100%). The accuracy of their inferences was rated by two ratersone of who (a PhD student) was independent of this study; the other was the current researcher. The correlation between the two raters was 0.92 after resolving the difference between them. A T-test was run to find out the difference between pre and post-performances. The rationale of the participants expressed in the pre-test was compared to that of the post-test to see the effect of intervention on their reasoning of inference.

Results and Discussion

To find out whether the participants were using the context or not when they meet unfamiliar words, the data of the pre-test was examined. The analysis revealed that neither were the participants utilizing the available contextual clues, nor were they accomplishing etymological analysis appropriately. For example, one of the subjects, S6 inferred the meaning of 'censure' wrongly as 'perfect'. The explanation offered for this inference was that since the words 'censure' and 'cent percent' have 'cen' in common, and 'cent percent' indicates 'perfectness', he wrote 'perfect'. Previous knowledge about the root 'cent' was applied to the word 'censure', which was actually not derived from that root and therefore resulted in an erroneous inference. Another word 'earnestness' was also inferred erroneously by three participants by connecting it to 'earn' than activating the root 'eornoste'. The inferences they gave were: 'make money', 'purpose of earning' and 'willing to earn'. Since 'earnestness' contains 'earn' in it, some participants thought that this word relates to

earning money. These two examples indicate the participants' preference for etymological analysis over contextual analysis for inferring meanings of unfamiliar words. Participants were not making use of the context even though sufficient contextual clues were available to them. The assumption of the researcher that the participants were not making use of the context in dealing with unfamiliar words seems to be true in light of the above finding. Hence, the need for intervention to raise the participants' awareness of the sentence-level-formal schemata in order to enhance their ability to infer the meaning of unfamiliar words from context was justified.

To examine the effect of raising the participants' awareness of the sentence-level-formal schemata on their ability to infer the meaning of unfamiliar words and their confidence in doing so, a t-test was run on pre and post-scores. The results revealed that the accuracy and confidence of the inference improved significantly from pre-test to post-test as a result of the interactive session. The following are the results of the t-test:

T-test results revealed that the participants performed significantly better in post-test. They improved their accuracy of inference significantly from pre-test (M = 75.46, SD = 18.05) to post-test (M = 79.51, SD = 15.82), t = 3.67, p = .005 at 0.01 level of significance. Participants also improved their confidence in inferring meaning from context significantly from pre-test (M = 76.27, SD = 10.08) to post-test (M = 89.44, SD = 7.76), t = 10.75, p = .000 at 0.01 level of significance. This establishes that the intervention on raising participants' awareness of the sentence-level-formal schemata hasimproved their ability to infer meaning of unfamiliar words from context and their confidence in doing so.

A closer analysis of the scores of the pre and post-tests revealed that the average score of four items was similar in pre-test (90.1) and post-test (90.7). Since the accuracy of inference in the pre-test itself was above 90, there was not much scope for improvement. However, for the remaining words, there was a significant improvement from pre-test (65.66) to post-test (72.05). As these words puzzled the participants

Table 1

Paired Sample t-test for accuracy and confidence of inference

Variable	Test	Mean	SD	T	Sig.
Accuracy	Pre-test	75.46	18.05	3.67	.005*
	Post-test	79.51	15.82		
Confidence	Pre-test	76.27	10.08	10.75	.000*
	Post-test	89.44	7.76		

* Significant at 0.01 level

in pre-test, they had scope to improve their accuracy of inference in post-test. It suggests that the intervention has come in useful to participants when they are really struggling to infer meaning of unfamiliar words.

In addition to the above findings from quantitative analysis, qualitative analysis was carried out to examine the effect of the intervention on the rationale of the participants. It was found that

the participants offered a better rationale in post-test. For example, S5 in post-test reasoned that the meaning of 'earnestness' should be the opposite of the word 'fun' since the sentence is connected with 'whereas', which expresses contrast; in the pre-test, he offered no rationale. Another participant, S3 offered a better explanation for his inference of the word 'tedious' in post-test, reasoning that "the word

'similarly' is indicative of a common quality in both words, so 'tedious' and 'boring' are nearly the same, and thus used." However, he simply declared that "the word boring is appropriate here" in pre-test. In both the examples cited, the participants used the schemata of discourse markers they were taught during the intervention to explain the rationale behind their inference in post-test. Thus, this study has demonstrated that explicit teaching about the sentence-level discourse marker scan facilitate L2 students' ability to infer the meaning of unfamiliar words from the context and also improve their confidence in doing so.

Implications for Teaching

The following implications can be drawn from this study.

- Though the clues for inferring meaning from the context exist in the texts students read, it is the teacher who has to explicitly teach the learners how these clues can be used in inferring meaning of unfamiliar words. Hence, teachers may have to state explicitly how contextual clues can be used in inferring meaning rather than leaving it to the students.

- This study shows that inferring the meaning of unfamiliar words by utilizing contextual clues can be taught to students to enable them develop a positive attitude towards unfamiliar words.

- Students may be made aware of other possible ways of dealing with unfamiliar words, for instance, root analysis, relating words to everyday experience, etc.

Conclusion

Before concluding, the limitations of the study need to be mentioned. This study is limited in its sample. The same test has been used for both pre and post-tests. It should also be mentioned that every unfamiliar word cannot be inferred just by analysing the context as many unfamiliar words occur outside of a context.

However, even though the study has its limitations, it has revealed that students were not making use of the context when dealing with unfamiliar words. This study has also established that raising students' awareness of the sentence-level-formal schemata helps to develop their ability to infer meaning of unfamiliar words from context and their confidence in doing so.

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