Metacognitive (Reading) Strategies Across Languages and Techniques

Parviz Birjandi

Shahin Vaezi

Abstract

Of the purposes of this study one was to see whether the metacognitive reading strategies used by Iranian EFL students reading an English text used the same kind of metacognitive strategies as those used by them while they were reading a Persian text. The other aim was to check whether the data (concerning metacognitive reading strategies) elicited through a questionnaire and the think-aloud technique were comparable.

The results manifested that there is not a difference between the frequency of use of metacognitive reading strategies used while reading Persian and English texts.

And it was also proved that the kinds of metacognitive strategies elicited while using a metacognitive reading questionnaire dealt very superficially with the task while the data gathered during the think-alouds were more specific and dealt more deeply with the task at hand. Thus, it is possible that metacognitive reading strategies developed for reading Persian texts may transfer to the reading of English texts or vice versa. Moreover, the choice of data elicitation technique depends on the researcher's purpose(s) and the context of the study.

Key Terms

Metacognitive reading strategies: The strategies that are used by readers to understand a text specially when meaning has gone "awry" as the term is used by Weaver (1990).

Think-aloud technique of data elicitation: Use of this technique allows the researcher to find access to the processes that go on in the reader's mind as s/he states them out loud while carrying out the process or very immediately after it.

Introduction

Alongside advances brought about in international communications, specially the internet, and due to the fact that access to the most up-to- date information in any field of speciality is possible only through the ability to comprehend written English in the forms of

journals, periodicals, and books, it becomes clear that reading and comprehending in English is vital to the academic and leisure life of the Iranian EFL student and all other students.

Various theories or views of reading have attempted to describe what reading is, and how it is done. Dole et al.(1991) referred to the traditional perspective of reading in which readers acquire a set of hierarchically ordered subskills that sequentially build toward comprehension ability. They also stated that the traditional perspective gave its place to the cognitive theory of reading. In this theory readers are known to be equipped with background knowledge that they use in the constructive nature of comprehension.

To have a more complete glimpse at the various reading theories, Fitzgerald (1995) reviewed a great number of recent studies that investigated reading in English as a second language in the United States. She distinguished four theories of reading, reported in the literature.

The first one is the psycholinguistic view of reading that states that readers sample texts, make and test hypotheses and predictions, relying on their own background knowledge about how language works. The second view, the schema theory, reiterates that readers use schemata, which are systematically organized units of information, to

guide understanding and to aid recall. The third theory, the interactive view of reading, states that reading is both "top-down" and "bottom-up." The top-down view claims that readers interpret a text by mainly relying on knowledge already present in the mind. The bottom-up view refers to relying mainly on graphic information on the page for comprehension. The interactive view takes both the top-down and bottom-up views as being interactive with each other. The fourth view is the metacognitive view, which extends that readers are in full control of their understanding or nonunderstanding of a text.

The most recent trend in reading and probably the most successful one is the metacognitive view, which is also referred to as the strategic reader view by Klein et al. (1991). The next section will elaborate on this view.

The Strategic Reader View (Metacognitive Processes)

As Block (1992) has maintained, it is clear that no one can ignore the importance of text –based or linguistic information in reading, nor can anyone disregard the fact that background knowledge will influence the reading **product.** But **process** has been neglected. What processes does the reader go through while reading? The

strategies a successful reader uses while reading have become the center of attention.

Klein et al. (1991) define strategic readers as learners who utilize appropriate strategies for their reading. Such strategies will allow students to encounter reading in ways that help them incorporate the necessary thinking skills, the appropriate background knowledge, and the critical contextual features that are central to comprehension of the text. Strategic readers approach the reading task with a plan. Klein et al. (1991) have stated that:

> They [strategic readers] do not let the text
> dictate how they will read the text . . .
>
> They think about (a) the kind of
> text to be read,(b) the purpose of
> the reading, and (c) the way
> in which they actually do the reading (p.172)

Moreover, strategic readers must be able to analyze their own thinking, during the reading act, while simultaneously analyzing the text being read. This act, Klein et al. (1991) referred to as metacognitive strategies in reading. Another definition of metacognition in reading, according to Weaver (1990), is recognizing

that meaning has gone awry and also being able to call upon various "fix-it" strategies as needed to help in constructing or reconstructing meaning.

Therefore, now, the focus is on what goes on in a person's mind while reading and what will be done if a problem in comprehension arises. Scholars, like Block (1992), have referred to such control as metacognition. She has also maintained that this ability, thinking about what one is doing while reading, develops relatively late because it involves the ability to stand back and observe oneself in action.

Fitzgerald (1995) has compiled a summary of the metacognitive strategies learners use while reading. Some of these strategies are asking questions while reading, rereading, imaging, using a dictionary, anticipating or predicting what is to follow, reading fast or changing speed, thinking about something else while reading or associating, skipping, and summarizing or paraphrasing.

A reading text based on process oriented views of reading emphasizes and tries to foster in the reader what it is that s/he has to do to become an automatically skilled reader. That is, the focus of such a text will not be just for the students to master a certain number of new words or structures, or just to become familiar with some different

ideas. In this sense, the reading text is not the aim in itself, but a means to becoming a strategic reader.

Data Elicitation Techniques

Oxford (1994) has stated that techniques for assessing students' use of strategies are varied. Among them one can see informal observation, formal observational rating scales, informal or formal interview, group discussions, language learning diaries, dialog journals between student and teacher, open-ended surveys, likert-scaled surveys of strategy frequency, and think–aloud procedures.

It is of importance to note what Cohen (1987) has stated: that no matter which data elicitation technique is used, only learning strategies subjects are conscious of, and/ or can recall at that point in time will be reflected to the researcher. It is, undoubtedly, clear that each data elicitation technique has its shortcoming or benefits.

The think-aloud technique, according to Jaaskelainen (1998), is one of the most comprehensive data elicitation techniques, in that subjects may still have in short-term memory the processes they went through while carrying out the task.

Which data elicitation technique or techniques - - a questionnaire, a diary report, an interview - - is used will depend on the researcher's purpose or purposes.

Reading Strategies in First and Second Language

There have been many studies carried out dealing with reading strategies in the L1 and L2. In her study, Block (1992), chose two types of language-based problems to check the monitoring of L1 and L2 readers. The subjects were searching for a referent and dealing with a lexically complex item. She has concluded that, the differences in monitoring by L1 and L2 readers, is mainly due to reading proficiency rather than to language background. The more proficient readers identified the source of the problem more frequently and more explicitly than the less proficient ones. Moreover, Block (1992) stated that "the proficient ESL readers seemed at least as able as the proficient native speakers at recognizing and solving the problem that the text presented"(p.336) Accordingly, both the less proficient L1 and L2 readers were not aware of the problems and did not have the ability or desire to solve or overcome the problem, when they did become aware of the problem. Finally, Block implied that readers are active processers of a text and should be trained to be in control of their own reading instead of being spoon-fed by ready–made texts.

In another study, Davis and Bistodeau (1993) have considered how L1 and L2 reading differ through think-aloud protocols. The verbalizations were analyzed and the underlying thought processes inferred. Thus, thirteen strategy categories were listed as having been used: (1) individual word focus, (2) intrasentential features, (3) restatement, (4) prediction, (5) confirmation of prediction, (6) reference, (7) inference, (8) associations with prior knowledge, (9) text order ,(10) evaluative comments, (11)self-questioning, (12) comments on the task itself, and (13) comments on own behavior. Accordingly, Davis and Bistodeau (1993) concluded that "low linguistic proficiency results in much greater attention to bottom up components of comprehension "(p.468) in both L1 and L2. In addition, it was expressed that the components of the foreign language itself, especially vocabulary, have a powerful impact upon the psychological processing during L2 reading by beginner readers.

In the light of what has just passed, this study attempted an investigation of metacognitive reading strategies in the reading of both English and Persian texts through two data elicitation techniques: the questionnaire and think–aloud technique.

Hypotheses

The questions of this study are presented in the form of three null hypotheses.

(1) There is not a significant difference between the kinds of metacognitive reading strategies Iranian EFL learners use while reading in Persian - - their native language - - and English - - their foreign language - - at the high and low levels of English reading proficiency.

(2) There is not a significant relationship between the use of a metacognitive reading strategies questionnaire and the think–aloud elicitation procedure in the kind of data (metacognitive strategies) elicited in the reading of English texts.

(3) There is not a significant difference between the performance of the subjects on the metacognitive questionnaire based on their levels of English reading proficiency.

The null hypotheses have been considered at the 0.05 level of significance.

Method

Subjects

The subjects who participated in this study were seniors at Islamic Azad University and Allameh-Tabatabai University. Of the total 80, 62 subjects were sifted for the study, on the basis of the fact that they had all participated in all phases of the study.

Materials

The materials used in this study were the Nelson Standard Reading Test (Version C, 1977) and a metacognitive reading questionnaire, and four reading passages. The metacognitive questionnaire was devised according to information provided by an open-ended metacognitive questionnaire, administered to subjects similar to the subjects of the study. Moreover the metacognitive questionnaires existing in the literature were also referred to.

Of the four reading texts, two were in English and two were in Persian. The texts were between 130 to 150 words in length. All texts included words that were unfamiliar to the students, (based on informal interviews of some of the subjects). These narrative texts, which also included comprehension questions that followed each text, were used to perform the think-aloud sessions.

Procedures

In order to investigate into the three hypotheses just mentioned, the following procedures were carried out. First, the Nelson Reading Test was administered to identify the English reading ability of the subjects. Then a metacognitive reading questionnaire was administered. In the following sessions, the subjects were selected individually, to think aloud on the two texts, separately, while reading. One of the texts was an English text, while the other one was a Persian text. Each think-aloud session took about 35 to 40 minutes. The think-alouds were recorded and later transcribed. After transcription and analysis of the transcriptions, 19 metacognitive strategies were identified. The metacognitive strategies identified were as follows: guessing, self–knowledge (this strategy referred to whether the readers were understanding what they were reading or not), rereading, world knowledge, enunciating (this strategy referred to when readers tried to understand meaning by enunciating words), analyzing words, skipping, monitoring, detecting referents, dictionary use , visualization, general idea , parts of speech, relations (this term referred to when readers tried to relate parts of the text together to make or confirm hypotheses), key words (this term was used when the readers realized that certain words

were more important for understanding the text than other words) , similarities , pausing, summarizing, and paraphrasing

Results and Discussion

Investigation of Question 1

In order to investigate the difference between metacognitive strategy use in English and Persian reading, chi-square analyses were carried out. The chi-square results for the nineteen metacognitive (reading) strategies results are shown in Table 1.

Table 1.Chi-square Analyses for Checking the Difference Between Using the Metacognitive Reading Strategies in English and Persian

Metacognitive Strategy	Chi-square	Number	Df	Asymp.sig (2-sided)
Guessing	.440	267	1	.507
Self-knowledge	5.64	533	1	.018
Reading	.312	153	1	.577
World-knowledge	3.694	107	1	.055
Enunciating	8.078	84	1	.004
Analyzing words	.124	73	1	.725

Skipping	.085	93	1	.771
Monitoring	2.828	64	1	.093
Detecting referents	.032	53	1	.857
Dictionary use	.124	27	1	.024
Visualization	.019	16	1	.889
General idea	.503	17	1	.453
Parts of Speech	3.039	129	1	.81
Relations	3.49	129	1	.064
Key words	6.470	77	1	.011
Similarities	1.628	120	1	.202
Pausing	8.923	128	1	.003
Summarizing	9.447	83	1	.002
Paraphrasing	2.551	126	1	.110

The results of the 19 chi-square analyses were as follows: six of the results were significant, while the other 13 were not significant. Although six of the chi-square results were significant, the levels of significance were not very much lower than 0.05. On the whole, as a logical conclusion, it can be stated that this hypothesis - - there is not a significant difference between metacognitive reading strategies in reading English and Persian texts - - cannot be rejected. This result was supported by Fitzgerald (1995). She has stated that in the studies she reviewed, metacognitive reading strategies did not differ qualitatively in ESL reading and native-language reading but differed only quantitatively.

Investigation of Question 2

To answer the second question as to whether there is a significant relationship between the metacognitive strategies elicited through the metacognitive questionnaire and the think-aloud method, first, the questions in the questionnaire matching the strategies elicited from the think-aloud protocols were distinguished. Next, the frequency of use of a certain strategy in the think-alouds were correlated with the answer (1 to 5) chosen on the questionnaire. The Kendall nonparametric correlation analysis was used to analyze the data.

The metacognitive strategies elicited from the think-aloud and the related question or questions on the questionnaire have been correlated. The correlations are tabulated in Table 2.

Table 2. Kendall Correlation Coefficients for Checking the Go-togetherness of the Data Elicited on the Questionnaire and the Think-aloud Technique

Metacognitive Reading Strategy	Question(s) on the Questionnaire	Correlation Coefficient	Significance (2- tailed)
Monitoring	5	-.004	.972

Pausing	7	.114	.280
	8	.002	.989
	9	-.215*	.040
	10	-.186	.081
	11	-.39	.705
World knowledge	12	.150	.186
Rereading	15	-.006	.955
Relations	16	.101	.358
	21	-.176	.097
World knowledge	17	.145	.176
Self-knowledge	13	-.076	.453
	19	-.023	.821
Summarizing	23	-.086	.432
	32	-.118	.298
Paraphrasing	24	.091	.394
Dictionary-use	29	.008	.943
Skipping	31	.051	.638

To discuss the results of the aforementioned Kendall correlation coefficients the following can be stated. It is necessary to reiterate that none of the coefficients were high enough to be able to state a high positive relationship between the data elicited through the two data elicitation techniques - - the questionnaire and the think-aloud protocol. Thus, the second hypothesis - - there is not a significant

relationship between the data elicited by the questionnaire and the think-aloud sessions - - cannot be rejected at the 0.05 level of significance.

There could be explanations to justify the low negative correlations. For instance, the subjects may not have paid enough attention to the answers they chose on the metacognitive questionnaire. They may have chosen answers that seemed acceptable and might have been praised by the researcher. Moreover, Alderson (1992) has stated that respondents may not have meant the same idea as the question designer had intended. And that some respondents tend to choose midpoints on a scale, while others prefer to choose extremes, although both may have had the same attitude to the item in question. Alderson has further reiterated that "one person's '3' may mean something quite different from that of another person's, yet in summing responses, counting frequencies and calculating averages we assume that similar responses are the same" (reported in Block, 1998)

Futhermore, only 16 of the 34 questions on the metacognitive questionnaire matched the data elicited from the think-aloud protocols, while the other 18 items on the questionnaire could not be matched to the data elicited from the think-alouds. Especially, the questions that referred to metacognitive strategies used before reading and after

reading could not be matched to the data elicited through the think-aloud protocols. The reason for this fact was that the think-alouds were carried out while actual reading was being performed; therefore, most pre-reading metacognitive activities and post–reading metacognitive activities could not be tapped.

Investigation of Question3

To answer this question as to whether there is a significant difference between the metacognitive strategies elicited through the questionnaire for the high and low group in English reading ability in reading English texts - - a t-test was carried out. The results are shown in Table 3.

Table 3. The T-test for Comparing Frequency of Strategy Use
At the High and Low Levels of Reading Ability

T	Df	Asymp-sig 2	Mean Difference
1.248	60	.217	4.54

As can be seen in Table 3, the t-observed is not significant. This result points to the fact that low and high reading ability groups did not perform differently on the metacognitive questionnaire for English

reading. This result, once more, confirms the idea that questionnaires alone may not be sufficient for tapping into metacognitive strategies. That is, reading ability was not a determining factor for metacognitive strategy use. This outcome seems controversial. To display what is meant, Weaver (1990) has maintained that a good reader is "the one who notices when meaning has gone awry... [and] calls upon various 'fix-it' strategies ... [called] metacognitive strategies"(p.180). A probable reason for this result could be that the reading measure (the Nelson Standard Reading Test) used in this study was not successful in differentiating good readers from bad readers.

In this study, two main issues were concentrated on. The first one was the subject of commonness of metacognitive reading strategies used in reading both English and Persian texts. The results confirmed two ideas: first of all, that the metacognitive reading strategies used while reading both types of text were of the same kinds, and, second, that the frequency of metacognitive reading strategy use in both types of texts was not very different for the nineteen extracted metacognitive reading strategies. Fitzgerald (1995) has reviewed the research of English as a second language (ESL) learner's cognitive reading processes carried out in the United States in the past 15 years (from 1980 onward). She has suggested that there were similarities and

differences in the ESL readers processes as compared to those of native speakers. The commonalities were in quality (types of strategies used), while differences were quantitative (concerning the frequency of strategy use). Fitzgerald (1995) has maintained that "no differences in outcomes due to the native language backgrounds of the participants were discernible " (p.178). She has continued to state that ESL readers used fewer metacognitive strategies and verbalized their metacognitive strategies less.

Pritchard (1990) has also maintained that ESL readers "used the same metacognitive strategies in ESL reading as in their own [native language] Spanish reading "(reported in Fitzgerald, 1995, p.179).Similar results have been achieved in this study.

The second issue was investigating into two metacognitive reading strategy elicitation techniques - - the questionnaire and the think-aloud protocol - - to see whether they elicited different types of data. The results confirmed the idea that the types of data elicited were different for the two elicitation techniques. The differences lie in the following cases: first, the questionnaire (for the purpose of being more comprehensive) had attempted to cover a larger scope, which in the questionnaire of this study, was referred to as "before reading" metacognitive strategies. On the other hand, the think-aloud protocol

was more to the point in matters of scope and mainly proved to have tapped "during reading" metacognitive strategies. Second, the questionnaire was very superficial in the information it gathered, which, of course, was due to its format and the 0-5 scale of answers (to be chosen from). But, the think-aloud protocol gathered data that showed the more in-depth processes that were going on in the readers' minds. Third, even in the questions of the questionnaire that matched the data elicited through the think-aloud protocol, there was not a high correlation between them on the two elicitation techniques. A look at the following question from Levine and Reves (1998) who attempted to seek the difference between two data elicitation instruments, as they called it , for reading and writing tasks, elaborates the point at hand.

> His [the subject's] think-aloud report shows
> that he tries to use the markers of rhetorical
> structure (formal schemata) ; in the answers on
> the Questionnaire, however; he claims not to resort
> claims not to resort to any discourse markers for
> logical connections.(p.7)

The metacognitive strategies used in reading both the English texts and the Persian texts were mainly similar and differed only in some cases related to quantity of use. The implications can be summed as follows.

Implications

First of all, the teacher should see him/herself as a mediator, as the person whose responsibility is to foster and develop in the reader the techniques and strategies necessary for the reading and comprehending of any kind of text for any purpose. The teacher's task is to equip the reader with the necessary strategies that may be needed in future occasions to read and digest reading materials when the reading teacher is no longer available. Block (1992) also supported this idea by stating that "by teaching background knowledge and linguistic features, we continue to apply only a bandage to the problem [of miscomprehension] "(p.338).

Therefore, the main aim must be to train readers to be adaptive and to equip them with the strategies they need to able to cope with any type of text in any situation.

To make less proficient readers familiar with the metacognitive strategies successful readers use, the teacher can ask the more strategic readers to think–aloud in the presence of other less proficient readers. This approach has been advocated by O'Malley and Chamot (1990). Another instance is stated in Hosenfeld (1984), where she helped "Ricky" acquire strategies of successful readers by going through the text with him and carrying out the strategies successful readers used.

Moreover, the EFL reading teacher can expand or elaborate on the metacognitive reading strategies used in the reading of Persian texts. This suggestion is more relevant only when these strategies have been developed in Persian (reading) classes. The following can be noted in Persian reading classes.

Metacognitive strategies are used while reading, regardless of the language of text. In order to enhance metacognitive strategy-use in Persian reading, it is necessary for the teacher to make the students familiar with the different types of texts and their characteristics and to inform them that different texts may call upon different strategies and that the purpose of reading a text may influence the strategies the reader uses to comprehend a text.

Lorch and van den Brock (1997 in Pressley 1997) have stated that " reading should be studied as a function of reader goals" (p.249).

Bibliography

Alderson , J.C., & Urquhart, A.H.(1984). Introduction: What is reading?
In
J.C. Alderson and A.H. Urquhart (Eds), <u>Reading in a foreign language</u>
(pp.xv- xxviii). London: Longman.

Block, E. L. (1986). The comprehension strategies of second language readers. <u>TESOL Quarterly</u> , 20/3.463-464.

Block, E.L. (1992) See how they read: Comprehension monitoring of L1 and L2 readers. <u>TESOL Quarterly</u>, 26,2,319-342.

Block, D. (1998). Exploring interpretations of questionnaire items. <u>System</u>, 26,403-425

Carrell, P.L, Pharsi, B. G., & J.C. Liberto. (1989). Metacognitive strategy training for ESL reading. <u>TESOL Quarterly</u> . 23/14 . 647-678.

Cordon, L.A., & Day, J.D. (1996). Strategy use on standardized reading comprehension tests. <u>Journal of Educational Psychology</u> , 88/2,288-295.

Crain-Thoreson, C. Lippman, M,Z., & D. McClendon-Magnuson.(1997). <u>Journal of Educational Psychology</u>, 89/4 579-591.

Davis, J.N., & Bistodeau, L.(1993). How do L1 and L2 reading differ? Evidence from think – aloud protocols. MLJ , 77/iv , 459-472

Dole, J. A., Duffy, G.G., Roehler, L.R, & D. David Pearson. (1991). Moving from the old to the new: Research on reading comprehension instruction. Review of Educational Research , 61. 239-264.

Fitzgerald, J. (1995). English –as- a- second –language learners' cognitive reading processes: A review of research in the united states. Review of Educational Research , 65, 145-190

Hosenfeld, C. (1984). Case studies of ninth grade readers. In J.C. Alderson and A.H. Urquhart (Eds.), Reading in a foreign language . (pp. 231-244). London: Longman.

Jaaskelain, R. (1998). Think-aloud protocols. In M. Baker. (ed), Encyclopedia of translation. (pp. 265-269). New York: Routledge.

Klein, M.L. Peterson, S., & Linda Simington (1991). Teaching reading in the elementary grades. Needham Heights, Massachusettes: Allyn and Bacon.

Koda, K. (1994). Second language reading research : Problems and possibities. Applied Psycholinguistics , 15, 1-28.

Levine, A., & Reves, T. (1998). Data-collecting on reading-writing strategies: A comparison of instruments: A case study. The Internet

TESL Journal , 3, (3), 1-11 Available :http:// www. aitech. ac. jp/~iteslj/ [27,Feb, 99]

Li, S., & Munby, H. (1995). Metacognitive strategies in second language academic reading. English for Specific Purposes , 1513, 199-216.

Muth, K.D. Britton, B.K. Glynn, S.M., & M.F. Graves.(1988). Thinking out loud while studying text: Rehearsing key ideas. Journal of Educational Psychology. 80/3, 315-318

O'Malley, J.M., & Chamot, A.U. (1990). Learning strategies in second language acquisition. Cambridge: Cambridge University Press.

Oxford, R.L.(1994). Learning strategies. In R.E. Asher & J.M.Y. Simpson (Eds), The encyclopedia of language and linguistics.

Oxford, R., & Crookall, D. (1989). Research on language learning strategies: methods, findings, and instructional issues. The Modern Language Journal ,73 , iv, 404-416.

Pressley, M. (1997). Commentary: The cognitive science of reading. Contemporary Educational Psychology. 22, 247-259.

Tarone, E. (1993). Some thoughts on the notion of communication strategy. In C.Faerch and G.Kasper (Eds.), Strategies in interlanguage communication. (pp.61-74). New York: Language Group Limited.

Weaver, C. (1990).<u>Understanding whole language:From principlels to practice</u>. Portsmouth, New Hamphsire : Heinemann Educational Books.