A think-aloud protocols investigation of Iranian students' writing revision strategies in English through summarizing

Mina Tavazoei
Department of English, Azad university of Shiraz, Shiraz, Iran.

Corresponding Author:
Dr.Mohammad Bavali*
Faculty member, Department of English, Azad university of Shiraz, Shiraz, Iran.

ABSTRACT

The present study aimed at investigating impacts of writing revision strategies in summary writing by Iranian female students in senior high school of Sepidan. This is a qualitative study utilizing think-aloud method in order to gain deeper comprehension of writing revision strategies by students while composing their summaries and recording their verbal protocols as well. 20 students took part in this research who were selected based on Oxford Placement Test by the researcher who was the instructor too. Subjects were provided a story based on their level of proficiency, and accomplished the study in two phases. It was revealed that the subjects used different kinds of writing revision strategies which were derivate from their think-aloud audio recording by the researcher. 11 types of writing revision strategies were developed through the process of segmentation and codification; among which translation in the first stage, and focus on grammar in both stages were used the most. It was revealed that the ones who employed revision strategies more gain better writing scores, also higher level of modification in their second draft was evident.
Keywords: writing strategies, writing revision strategies, and think-aloud study

Introduction

 Which revision strategies are employed more by Iranian senior high school female students?

 Do revision strategies used by the students improve the quality of their summary writing? These questions play a central role in this study. As an English teacher teaching in English institutes and schools simultaneously; I have witnessed student's confession of their lack of proficiency in writing revision strategies and how to modify their writing composition after being corrected by a red pen bleeding all over it. This can be rooted from different sources like: low level of language proficiency, not being used to write in another language, or poor quality of writing revision strategies. This study attempts in exploring writing revision strategies utilized by subjects while demanding each individual's think-aloud as an instrument. The primary focus of this study is providing a comprehensible range of revision strategies, recognizing the most practical ones and their impacts on summary writing by subjects.

This study is of particular significance since trying to reach a guideline that assist students through learning and utilizing strategies that promote their level of writing for their further practice. Also focusing their level of attention on revising their composition while considering important factors regarding organization and content of the composition rather than editing the first draft just focusing on grammatical and lexical domain.

Literature review
- **writing strategies**

Rubin (1981) defined strategy as: "operations or steps used by a learner to facilitate the acquisition, storage, retrieval and use of information" (p. 5). Stern (1983) on the other hand, stated that "in our view strategy is best reserved for general tendencies or overall characteristics of the approach employed by the language learner, leaving learning techniques as the term to refer to particular forms of observable learning behavior, more or less consciously employed by the learner" (p. 405). The present tendency among researchers is to use the term strategy for specific behaviors. Further, Cohen (1998) defines language learning strategies as:

Those processes which are consciously selected by learners and which may result in actions taken to enhance the learning or the use of a second or foreign language, through the storage, retention, recall, and application of information about the language (p.4).

For the purposes of this study then, strategy is defined as a series of actions, methods, steps and techniques employed by a learner behaviorally or mentally, and more or less consciously, to facilitate their processing, retrieving, and using of information.

The most significant part of any research dealing with writing composition process is the recognition of writing strategies. Writing strategy is defined by Cornaire and Raymond (As cited in Beare, 2000) as a plan of action or a conscious intervention in dealing with the task for the purpose of problem solving or reaching a goal. Writing strategies mean the set of skills that learners use in process of writing which could help learners overcome their difficult task of writing (Edward, 2005). Previous studies such as Ferris and Hedgcock (2014) showed that low-ability language learners normally use the same strategies during writing over and over again and do not make a significant progress in their written products. Low achieving learners do not know what strategies can improve their writing**.** Further, Leki (1995) discusses writing strategies as the kind of actions that writers undertake to produce a written text (e.g. rereading the text several times). More recently, Kieft et al. (2006) define the writing strategy of an individual as the way that person tends to organize cognitive activities such as planning, formulating, and reviewing. Revision is both a practice and an art, one that experienced writers benefit from and continue to craft. In addition, experienced writers understand that different kinds of writing tasks may call for different kinds of revision strategies. One way to see what in a text needs to be revised of course, is by sharing writing with others who can suggest areas that need clarification, development, and artful expression. Hayes, Schriver, Stratman, and Carey (1986) give a more complex description of the 'reviewing' process, previously thought to be composed of only two sub-processes ('evaluate' and 'revise'; Flower & Hayes, 1981), by breaking down the process into four components and by further specifying the kind of knowledge the revision activity involves and generates. They grant a more important role to the reviser's selection of what knowledge to apply and what strategic choices to make as they a) defines the task, b) evaluates the text and defines the encountered problem, c) selects a strategy involving either going back to the preceding processes or going on to modify the text, and d) modifies the text either by revising it or rewriting it. From a functional standpoint, the above sub-processes of revision are organized hierarchically. Each of the four steps required to make a correction is necessarily subordinate to the preceding one. The reviser can nevertheless decide not to go on to the next step, and restart the sequence at any one of the higher-order sub-processes. This process-sequencing flexibility accounts for the functional variants so fully described by Flower et al. (1986). In the 1960s, writing began to be viewed as a process. This movement, often referred to as the process movement, finally emphasized revision as an integral part of writing (Clark, 2012). Initially, writing was viewed as a linear process starting with prewriting, then drafting, revision, and then editing. This linear view continued to

frame revision as an afterthought, since, it was one of the last steps in the writing process (Sommers, 1980). In 2010, Nejad Ansari and Dabaghi Varnosfadrani in their research about Iranian writing revision strategies and their error correction found that the type of revision did not have any significant effect on the participants' writing achievement.

In a study carried out by Rahmawati et al. (2019) they defined three phases of before, during and after writing, and categorized writing strategies employed by the participants with regard to these phases, which is similar to Murat's (2014) research design. The results showed that in the "during writing" activity, they carried out introduction first activity, sentence verification activity, paragraph verification activity, outline revision activity, language transfer activity, positive grammar and vocabulary activity, sentence simplification activity, synonym activity, dictionary activity, and peer cooperation activities activity. In "after writing", they carried out reading aloud activity, revision activity, drafting activity, instructions matching activity, respiting activity, collation activity, and self-rewarding activity. In all three stages (before, during, and after writing) high achievers employed strategy more frequently than that of low achiever's ones. Hence, high achievers are more active in using writing strategy than the poor writing mastery ones.

Mu (2007) through the examination of the writing strategies of three Chinese postgraduate students in an Australian higher education institution found that writing strategies improve writing proficiency and solve writing problems. Some researchers (e.g., Ellis, 1994) state that the type of task is one of the variables determining the use of different strategies. Raoofi, Chan, Mukundan, and Rashid (2014)'s study about writing strategies of Malaysian university students learning English as a second language showed that the highly proficient writers use more metacognitive strategies such as organizing ideas and revising content.

- **Revision**

In the area of language, revision has its roots in the practice of classical Ancient Greek rhetoric, and many early cultures centered on spoken rather than written language (Lindemann, 2001). Aristotle focused on the importance of invention rather than revision. Aristotle acknowledged that improving sentences and shifting the arrangement of words and sentence order assist in making discourse more effective, but as Sommers (1980) points out, in speech, revision is almost impossible (Bamberg, 2012, p. 80). Therefore, in classical rhetoricians usually emphasis was on revision. If revision was meant at the sentence or word-level, which began the narrow view of revision as surface-level correction (Bamberg, 2012; Sommers, 1980). Quintilian, was one of the first teachers to directly emphasize grammar in both writing and speech to his rhetoric students. Quintilian's practice contributes to the idea of revision as editing grammar and errors in mechanic, while having students master grammar before they learned to write or speak well. It is still indicated in many modern classrooms (Lindemann, 2001; Bamberg, 2012).

According to Flower et.al (1986) revision is by nature a strategic, adaptive process not a predictable procedure. It is a process that not only draws on the writer's knowledge, but actively generates new knowledge. Revision is a substantial element of the writing process. So fundamental that for some specialists writing is largely a matter of revising, or as Murray (1978) stated, "Writing is rewriting". Learning to revise is a lengthy, complex endeavor. Beginning writers do little revision spontaneously, and even experienced writers encounter difficulties in attempting to improve the quality of their texts (Fitzgerald, 1987). The key variable in modeling revision process will not be how many or what kind of changes writers make, but how well they adapt the text they have to the goals they want to achieve. (Flower, Hayes, Schriver, Stratman, and Carey ,1986) It should realistically include surface level and global level alternations. (Bamberg, 2012; Lindemann, 2001; Sommers, 1980). In an NAEP (1977) study it was revealed that students' efforts at revision was allocated to mechanics, and grammar. They seldom made more global changes, such as starting over, rewriting most of a paper, adding or deleting parts of the paper, ideas (Applebee, et al., 1986). Direct teacher intervention, like in the form of questions about specific content however, seems to produce better results. Robinson (1985) found that children revision ability increased when they revised in response to teacher questions targeting at specific content. Sommers (1982) also found that teacher comments often shift students' attention away from their own purposes toward those of the

teacher. Sommers believes that teachers' specific comments allow students to establish purpose in their writing.

Through reviewing literature several empirical studies in the area of writing revision strategies have been developed. Rashtchi and Ghandi (2011) along with previously conducted research supported revision as a useful strategy in improving writing ability of the learners (Black& William, 2004; Chandler, 2003; Ferris, 2001; Guénette, 2007; Hyland & Hyland, 2006; Liang, 2006; Thomas & Barksdale-lad, 2000). Apart from the type of strategies students apply Rashtchi and Ghandi believed that this technique can Assis students in two ways: 1. improvement of the Iranian EFL learners' writings in general 2. Facilitation of the process of error correction in writing compositions. As a result, writing revision strategies should be integrated into writing classes. In another different study Ansari and Dabaghi (2010) developed a research in order to correlate students' multiple intelligence (MI) profile, and the usage of writing revision strategies. The study manifested a significance relationship between these two factors. It means that those participants that have dominant interpersonal intelligence use strategies that are social and interactional. For example, asking a friend for help, or their teacher. Intrapersonal intelligence learners, on the other hand, tend to apply personal and individual strategies such as applying grammatical knowledge, checking in a dictionary, restructuring sentences, and guessing. Furthermore, the revision strategies students preferred were compatible with their dominant MI profiles. Coomber (2016) in order to develop students' habit of self-directed revision, developed a quasi-experimental study. One class of second-year Japanese university students revised the first draft of an essay after completing the following activities: 1) an oral presentation of essays; 2) a grammar workshop; and 3) a 20-point checklist. A second class was designated as a control group and revised their essays with no additional input. The result of this study indicated that treatment group made more revisions, which were also more successful. Peer review training had a positive effect on the students' subsequent revisions according to a research carried out by Abbasi and Soori (2014).

Methods

• Design

This research adopted a qualitative study by the use of think-aloud method. Based on Talapngoen, and Purine Deerajviset (2017) think aloud protocol has effects on the writing performance of the students. Such studies show that think-aloud protocols could help students reflect their own problematic areas to improve their skills and abilities, and to detect and diagnose problematic areas of any skills on their own.

In the first step the students who were willing, participated in The Oxford Placement Test. Then the process of think-aloud and how to conduct it, was briefly and simply defined for the students who have achieved accepted score in upper intermediate level, in advance. After that a short story related to their level of proficiency is given. In the fallowing step The students were asked to summarize the story while thinking aloud and writing. They were aware that each piece of thought that came to their mind related to summary writing was valuable and they had the right to record it. So as to continue the procedure the researcher transcribed each students' thoughts and commented on their composition. The students corrected their mistakes based on their instructor's feedback and recorded their voice while thinking aloud as well. Finally, the researcher asked for the students second audio recorded to be segmented and codified.

• Participants

The current study was conducted at a school, and the instructor was the researcher. The participants of this study were female students studying at a senior high school in Sepidan, Shiraz. The researcher selected them based a cluster sampling procedure. The final sample was formed as a result of administering the Oxford Placement Test so as to make the group homogeneous. As this study maintained the usage of think-aloud method, and this method of research according to Akyel and Kamisli (1996) requires cognitively demanding language use the students with total score of 37_47, considered as upper intermediate level, were asked to join the research process. Participants were between 15_17 years of age, and the process of thinking-aloud was completely clarified to the students by the instructor so they were familiar with the procedure and how to direct it. The participants belonged to the same sociocultural background with Farsi as their L1.

- **Procedures**

In the first stage of this research the students attempted to write a summary out of a passage and recorded their voice while thinking- aloud. Brown (1994) declares that much information in conversations are transformed non-verbally. The importance of this kind of information is the reason why the usage of audio or video recording is emphasized. Participants were well informed that the procedure of thinking aloud in this research deals with writing a summary and expressing their thought related to the process of summary writing, for instance sentence order, word order, choice of appropriate words. So the process of thinking aloud and glossing happened simultaneously.

It is to be noted that selected students for this study were to some extent familiar with the process of summarizing and how to compose a text based on their background knowledge gained in English institutes; this method of research tried to use this background knowledge in order to facilitate the process of acquisition of revision strategies and utilize them to well develop their summary writing ability, something which is neglected in English institutes.

- **Instruments**

A number of data collection instruments including: think –aloud protocol (glossing and audio recording), Oxford placement Test, and one short story are utilized.

- **Transcription of Think-aloud Protocols**

The first step in data analysis is to transform audio-recorded into a Witten form. (Dorneyi, 2007). He also believed that it allows us thorough understanding of our data. Lapadat (2000) stated that ' a transcript is an interpretive of original communication'. So each writer's audio-recorded were transcribed in order to create a hard copy of the think-aloud sessions. Each participant's recording was reviewed for 4 times in order to gain deeper understanding of every one's verbal protocols. In the case of individual's vagueness in representing their thought; the researcher asked her for more clarification. The audio was transcribed in the form of language each participant produced; so as to make the procedure easier the researcher asked them to verbalize their thought based on their first language(Persian). Each subjects first and second draft and audio- recorded were gathered by the researcher finally.

- **Coding the strategies**

According to Dorneyi (2007) clarity is the most substantial feature of a coding. It is necessary to be immediately transparent. As Miles and Huberman (1994) emphasized displaying organized construction of information leads to conclusion readily. The protocols of the 20 students, took part in this study, were segmented. As codification process in qualitative studies is a multi-level procedure (Dornyei 2007), the researcher followed Dornier's model of codification which is defined based on three steps: open, axial, and selective coding. 11 types of strategies were observed, and included in the final strategy scheme. The researcher provided a schematic representation of detected strategies. The frequency of each strategy was calculated by counting the number of occurrence of each type. As each strategy usage scored 1 the lack of specific strategies usage scored 0 in final calculation.

- **Inter-rater reliability**

In order to examine the reliability of scoring of each individual's summary writing the researcher asked one of her colleagues who is an English teacher, and familiar with the system of scoring writing based on Brown's writing rubric to the core; to score each individuals. Aiming at calculating the amount of reliability of the researcher's scoring. The researcher explained to her the purpose of her research and provided her with a copy of the Brown's table of parameters to score compositions. Finally, as the score of inter-rater reliability in table one (.898) shows, the study met the reliability of scoring compositions.

Table 1: Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.898	.902	2

- **Paper correction design**

In order to assist students in better comprehension of the source of errors in their composition; the researcher designed a guide based on symbols, each represented specific area to be considered, and revised in second draft. After each student handed in her first writing, the researcher provided feedback based on symbols, also some written feedback specifically allocated to each individual were provided. Finally, each subjects table of scores which included 5 sections: Organization, Logical development of idea, Grammar, mechanics, and Style and quality of expression, and first composition containing feedback was emailed by the researcher in the format of a word file to each individual.

Discussion

According to the classifications developed for this study, revision strategies are divided into 11 types. Table 2 shows revision strategies used by Iranian female students when writing summary   in English.

Table 2: Writing revision strategies

Draft one	Frequency	Draft two	frequency
1. Focus on content	14	1. Focus on content	18
2. Focus on grammar	38	2. Focus on grammar	49
3. Focus on mechanics	10	3. Focus on mechanics	29
4. Focus on vocabulary	9	4. Focus on vocabulary	5
5. Sentence Restructuring	10	5. Sentence Restructuring	19
6. Editing after the whole passage	3	6. Editing after the whole Passage	0
7. Editing after each Paragraph	6	8. Editing after each paragraph	0
8. Translation	68	9. Translation	3
9. Deletion	8	10. Deletion	13
10. Substitution	7	11. Substitution	9
11. Reasoning	22	12. Reasoning	20

The researcher used Microsoft Word's "compare document" feature to combine the original and revised versions of each essay so that she could realize the extent and types of changes each student had made in the revision process.

Following Lindeman's et.al (2018) developed rubric for students' writing revision work, and reflection work; The researcher utilized the first one to assess the extents of writing revision done by the students under 3 definitions: substantive, moderate, or editorial. They elaborated on these 3 criteria differently. By substantive revisions they meant allocating significant changes by adding or deleting major sections, considerable new supporting arguments or counterarguments, writing to a different audience, creating a new arrangement strategy, or any combination thereof. Moderate revisions may demonstrate some of these changes but not in the way that significantly changes or modifies the main argument or its support. At the editorial level, students generally make sentence-level changes that do not alter the body of the original essay.

In this study, as 2 hard copy of students written compositions were gathered; the results are demonstrated in two tables. As it is calculated that in the first phase of this investigation, 25 percent of the subjects made substantive revisions to their essays, 55 percent made moderate revision, and 20 percent made editorial revision. (see Table three) In the second phase 40 percent of students made substantive revisions, 15 percent

of students made moderate revision, and 45 percent of participants made editorial revisions. (see Table four)

Table 3: Extent of student's revision. Phase one. Table 4: Extent of student's revision. Phase two

Extent of revision	Percentage of students
Substantive	20
Moderate	55
Editorial	25
Extent of revision	percentage of students
Substantive	35
Moderate	10
Editorial	55

Proving that by teacher's provided feedback and change in using strategies used less in phase one students tried to focus more on substantive revision. Editorial revision was emphasized more by subjects, and highly assigned to grammatical errors in the second phase.

Calculation of the length of pause duration of each individuals while thinking aloud and silence, within three parts of the passage including: within sentence, between sentences and between paragraphs comparing the steps of this study, revealed that the length of thinking aloud and silence both increased dramatically in the second phase after feedback being provided, and also the increase in the duration of pauses while thinking aloud and silence was mostly related to within sentence instructions. (table five and six)

Table 5: Pause duration in first step

	Silence	Think-aloud
Within sentence	143	1012
Between sentences	188	2900
Between paragraphs	100	197

Table 6. Pause duration in second step

	Silence	Think-aloud
Within sentence	383	4080
Between sentences	166	1050
Between paragraphs	23	91

Analysis of data revealed that some strategies (6 &7) were diminished in writing second draft. As the focus of each individual were centered on parts highlighted by the instructor they merely focused on edition of whole passage and each single paragraph, and dominantly focused on sentence; treating every single sentence as chunks to be noticed. It was clearly noticed that in the occurrence of edition after the whole passage done by 3 subjects; their focus of attention was solely on grammatical structure of the sentence, and other factors were ignored to the core. Regarding the frequency of   mechanical design of writing composition of each subject's first and second draft; dominant focus was on correct spelling of words while only 2 students concentrated on punctuation marks as well. Even the top scoring subjects ignored punctuation marks utilization in their first draft. Although after their composition being corrected by the instructor, the frequency of noticing punctuation marks increased by all 20 members of the study. Members of this study justified their claim that: not knowing the importance of punctuation mark, forgetting, unfamiliarity with their location in sentence or even the exact form of which were the reason why they

excluded mechanical organization. In contrast with mechanics, vocabulary and content; grammatical focus was the heart of revision strategies in both drafts. While confronting grammatical errors participants manifested 3 types of compensatory strategies. First, they comprehended the error from the very moment faced with the erroneous sentence, as associated it with the lack of thorough attention while writing. Second, they anticipated the error in advance however, due to lack of perfect knowledge of that grammar point they undertook three measures differently: a) ignoring highlighted sentence to be revised, and rewriting the same sentence repeatedly. b) deletion of the whole sentence, c) rewriting the sentence while using an easier structure which she is highly confident, and certain about well-instructed structure. Third, assuming that the structure of the sentence is well-written totally, and no alternation needs to be done.

Among these 20 subjects they all utilized translation strategy specifically back translation of Persian into English at least 11 times in their writing. They employed two types of translation in two specific situations. These two types were: a) translation into English b) translation from English. they mostly used back translation while composing every single sentence, although in the case of editing the sentences, and making sure of the sentence considered tense to be to the point and acceptable; they translated written sentence into Persian so as to devise justification for the use of specific sentence structure, vocabulary use and meaning control of the sentence to examine inferenced meaning as another person reviewing the composition additionally. As top scoring student employed this strategy in line with other types of strategies, and this measure is among one of the high frequent types of strategy; it is far from accepting the fact that this should be counted as a type of a successful writer characteristic though. Since in   21% cases of translation this revision strategy acted conversely, and misleadingly leading to:

1. Composing sentences which are just an English counterpart of Persian sentence; they are not matched in English syntax either.

2. Distracting from focusing on content, tending to compose chain of sentences without application of appropriate conjunctions.

3. Acting as a reliable device eliminating, or reshaping accurate prefabricated chunks in the mind of individuals contributing to faulty composition of sentences.

So it is necessary to use this type of strategy accurately in order to produce successful results. Success of this type of strategy largely depended upon dictionary use of the subject, or in the case of searching the net to find appropriate vocabulary or structure; tacit use of key words to request for intended meaning. As in the case of focusing on content dictionary and internet utilization came into consideration, it revealed that among these 20 subjects just 3 of them were familiar with the process of searching a word in dictionary, checking parts of speech, examining different connotation of the same vocabulary, observing different collocations and using the most convenient one, discovering about different prepositions of the same verb etc. Who scored 93, 93 and 88.

In the case of confronting with exact quotation provided in the story and restructuring the sentences into indirect quotation or inferential sentences; members of this study manifested three types of measure:

1. 5 students were familiar with the grammar of changing the direct speech into indirect speech.

2. 12 students tried to make an inferential sentence which was successful in 62% of the cases.

3. 3 students preferred not to mention the quotations at all.

It should be mentioned that 65% of all members (13 students) were not familiar with the rule that direct quotation must be avoided while summary writing, and the instructor asked them separately to take it into consideration by providing notes at the bottom of their writing.

As mentioned before deletion, substitution was mostly used in the case of imperfect or lack of knowledge. 40 percent of subjects searched for a justifiable answer to the questions raised in their mind while verbalizing their thought. They sought for reasons that could clarify specific usage of a structure, vocabulary, or even punctuation marks. While implementing this type of strategy, they resort to model sentences bore in their mind confirming the accuracy of intended sentence to be written. In other cases, by reminding themselves of the sentences used in the story itself; they gained required assurance.

Conclusion

The result of current study indicated that Iranian students participated in this investigation were at least familiar with 4 types of revision strategies listed in table 3, by observing the one who scored the least among others. (61) these students On the other hand students who used more than 8 types of strategies simultaneously, and accurately scored better, by observing students who were among top 3 scores. (86, 88, 93) Among listed strategies the most frequent one in both phase was focusing on grammar, while translation was the most frequent one in the first step conversely lost its usage in the second step dramatically. According to Table three and four it was also indicated that students focus of attention in second step shifted from moderate revision to editorial, and substantive revision. The Participants who scored above 80 aimed at substantive revisions, the ones below 80 viewed the second draft as a composition to be edited exclusively.

It should be confessed that although teaching English nowadays is going toward process-oriented base (wolff, 2000) teaching writing in English is still product-oriented to the best of researchers' knowledge, and training students using revision strategies is ignored completely. As a result of persuasion of process-oriented model of teaching writing, it can be concluded that students while 'monitoring' their writing as Flower & Hayes puts it, they become aware of the revision strategies which can be of use, and enhance their level of writing as a result of this awareness. The necessity of policy maker's decision about providing some in-service courses for English teacher in order to assist students in writing compositions, modification of school books' design in the section of writing, including writing sections in school books from grade 9th and specifying story books for each grade at schools as supplementary can be felt.

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