

RESEARCH ARTICLE

The effect of autobiography method on comprehension skill of hearing-impaired students

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Abstract

Background and Aim: Autobiography is a kind of narrative writing about a person written by that same person. Indeed, it is a type of writing about self that is full of subjectivity and experience. The present study investigated the effect of autobiography method on the comprehension skill of hearing-impaired students.

Methods: International Standardized Reading Literacy Questions (2001) was employed for data collection. Six hearing-impaired students from special female schools of Shahriar city, Iran, in the range of severe to profound hearing impairment were selected as control (n=3) and experimental (n=3) groups. Autobiography method was used for the experimental group during 23 sessions of hearing rehabilitation training.

Results: In the experimental group, mean score of posttest was significantly higher than that of the pretest in levels one and two of comprehension process ($p < 0.05$), while there was no significant difference in levels three and four between the pre and posttests ($p > 0.05$). In the control group, there was no significant difference between post and pretests in all the four levels ($p > 0.05$).

Conclusion: Autobiography as a teaching meth-

od focuses on the lived experiences of the individual. In so doing, students' experiences are discovered, expressed, and interpreted, and students are committed to improving their writing skill through achieving a broader set of language functions. Furthermore, boosting language skills can improve comprehension in hearing-impaired students.

Keywords: Autobiography; comprehension; hearing-impaired; students

Introduction

Academic progress of hearing-impaired students is highly hinged upon their writing skill and they might encounter some difficulties in the fields like mathematics, sciences, and reading comprehension [1-3]. Since one of the communication tools, especially in today's world, is the use of written language, investigating the use of syntactic indexes in hearing-impaired individuals, who are obviously weak in using language, is highly important for improving their written language [4].

There is a direct relationship between sentence writing ability and comprehension both in normal and hearing-impaired children [5]. Hearing-impaired people not only have a limited range of vocabulary, but also have difficulty in organizing words into sentences. One of the communication predicaments of hearing-impaired students is selecting words and organizing them

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into sentences. Sometimes, this problem leads to incomprehensible and ambiguous messages for the audience [6]. Former studies indicate that hearing-impaired students similar to hard-of-hearing and deaf ones perform weaker in grammar tests compared to normal students, and the defect is evident in the use of auxiliary verbs, complements, conjunctions, verb conjugation, and tenses [7].

The analysis of written and oral narratives of hearing-impaired students indicates that their storytelling in both oral and written forms is weak and that they write stories containing fewer words as compared to their normal peers; in addition, their stories contain no sophistication or grammatical and semantic accuracy [8]. Narrative skills of hearing-impaired students are the result of oral language development and literacy skills that need to be addressed well [9]. In hearing-impaired students, improvement in writing skill can in turn enhance reading skill. However, if this progress occurs in reading, it is not clear whether writing will improve or not. Students who are more successful in written tests achieve higher levels of education easily, while those who have weaker writing skills may not. To determine the exact academic achievement of hearing-impaired people, writing evaluation is strongly considered. Appropriate written evaluation provides accurate understanding of student status for selecting an appropriate teaching approach [10].

Given the above-mentioned reports, the writing skills of hearing-impaired students are weak and there is a close relationship between writing skill and reading comprehension. The more improving writing skills of hearing-impaired students is addressed, the better they will be able to comprehend what they read. Accordingly, in this study, autobiography method was employed to improve writing skill and to investigate its impact on comprehension skill of hearing-impaired students.

Methods

The current study was conducted using the quasi-experimental method and pre and posttest design with a control group during the academic

year 2015-2016. The study population was hearing-impaired students studying in the fourth grade of special schools of Shahriar, Iran. Six female hearing-impaired within the range of severe hearing loss (71-90dB) to profound hearing loss (above of 90dB) [11], were selected as the available sample of study.

Students had average intelligence and their records of rehabilitation services (speech therapy and auditory training) were relatively equal. Moreover, they were using appropriate hearing aids, and in terms of academic achievement and teacher, they were not very different from each other. One of the samples had received cochlear implant and showed higher language skill in comparison with other students; thus, she was excluded from the study.

Before initiating the information survey, the objectives, methods, and process of the study were explained to the teachers and students. Since two experimental and control groups were required for this study, we randomly selected three students. To this end, the names of the students were written on small pieces of paper and the relevant teacher was requested to choose three from them, and they were randomly assigned to the control (one student with severe hearing loss and two students with profound hearing loss) and experimental group (one student with severe hearing loss toward profound and two students with profound hearing loss).

The experimental group received 23 sessions of autobiography by the researcher with full consent of the teachers. The control group in the sentence-making and essay writing lessons started writing sentences and essays in the conventional way with words and titles provided under the supervision of their teacher.

Progress in international reading literacy (PIRLS; 2001) test booklet was considered as the instrument of study [12]. PIRLS is an international study, test books of which were standardized and implemented in 35 countries, including Iran (Institute of Education, National Center for PIRLS studies), which is a member of this international study [12]. Several studies were conducted in Iran to investigate the status of reading and comprehension in

hearing-impaired students through PIRLS test [12-15]. In this study, we used this international test to accurately examine the influence of autobiography method intervention on reading and comprehension skills of hearing-impaired students through comparing the findings of the current study with others, especially the ones conducted via PIRLS.

Reading comprehension process in PIRLS division is classified into four levels. These levels, from the lowest to the deepest levels of learning are as follows: 1) focus and quick retrieval of information (successful retrieval of information requires a fairly immediate or automatic text comprehension; this process is not required for interpretation and meaning is clearly stated in the text); 2) direct inference (the readers not only make sense of the text, but also get ideas and information that are explicitly stated in the text and make inferences beyond the text); 3) interpretation and integration of ideas and information (readers by the interpretation and integration of ideas and information obtained from the text create relationships that are not only implicit but may be interpreted based on personal views); and 4) investigating and evaluating content, language, and textual elements (through evaluation of the content, as well as language and textual elements, the reader's attention shifts from creating meaning to careful scrutiny, accepting, or rejecting the text) [16].

In this study, informational texts booklet named "the Story of the River" was selected to evaluate the different levels of reading comprehension process. The booklet consisted of three multiple-choice and eight open-ended questions; the maximum possible score of this instrument is 18. Every multiple-choice question had 1 point and open-ended questions had 1-3 points considering the level of difficulty. Three points in the test were for evaluation of level 1 (quick retrieval of information), 3 points for level 2 (direct inference), 7 points for level 3 (interpretation and integration of ideas and information), and 5 points for level 4 (investigation and evaluation of the content, language, and textual elements).

The students had to read the story and answer

the questions in 40 minutes according to PIRLS test [17]. At first, PIRLS pretest was carried out in both groups, and then autobiography method was administered for the experimental group in 23 session (each lasting 45 minutes) during five months of hearing rehabilitation training hours. In the autobiography method, the learner plays a key role since this type of writing is about self and highly subjective [18]. In every session, students were asked to write down one of their life experiences, thereafter, the texts were reviewed and corrected by other students and the researcher. When 23 sessions were over, PIRLS posttest was conducted for both groups in order to compare the pre and posttest mean scores and investigate the effect of this method on comprehension of hearing-impaired student.

To analyze the data, SPSS 20 was employed. Regarding Kolmogorov-Smirnov test and normal distribution of data, independent t-test was used to compare the two groups, and paired t-test was run to compare pre and posttest mean scores in each group. $p < 0.05$ was considered statistically significant.

Results

The results of paired t-test indicated that the experimental group demonstrated significantly better performance in the posttest compared to pretest in levels 1 (focus and quick retrieval of information) and 2 (direct inference; $p < 0.02$). However, this group demonstrated no significant differences in levels 3 (interpretation and integration of ideas and information) and 4 (investigation and evaluation of the content, language, and textual elements) between pre and posttests ($p > 0.05$).

Paired t-test in the control group indicated no significant differences between the pre and posttests in any of the levels of comprehension process, that is, focus and quick retrieval of information, direct inference, interpretation and integration of ideas and information, as well as investigation and evaluation of the content, language, and textual elements ($p > 0.05$).

The results of independent t-test (Table 1) exhibited no significance difference between mean scores of the experimental and control groups in

Table 1. Mean scores of different comprehension levels in experimental and control groups

Comprehension levels	Experimental group (n=3)					Control group (n=3)						
	Pretest scores		Posttest scores			Pretest scores		Posttest scores				
	Mean (SD)	Min, Max	Mean (SD)	Min, Max	P *	Mean (SD)	Min, Max	Mean (SD)	Min, Max	P *	P **	P ***
Focus and quick retrieval of information	0.33 (0.57)	0,1	2.66 (0.57)	2,3	0.02	0.66 (0.57)	0,1	1.00 (0.00)	1,1	0.42	0.51	<0.001
Direct inference	0.66 (0.57)	0,1	3.00 (0.00)	3,3	0.02	0.66 (0.57)	0,1	0.66 (0.57)	0,1	1.00	1.00	<0.001
Interpretation and integration of ideas and information	0.33 (0.57)	0,1	1.33 (0.57)	1,2	0.22	0.33 (0.57)	0,1	0.33 (0.57)	0,1	1.00	1.00	0.10
Investigating and evaluating content, language and textual elements	0.33 (0.57)	0,1	1.33 (0.57)	1,2	0.22	0.33 (0.57)	0,1	0.66 (0.57)	0,1	0.42	1.00	0.23

* Paired t-test, ** Comparison of pretest scores between group with independent sample t-test, *** Comparison of posttest scores between group with independent sample t-test

any of the 4 levels in pretest ($p > 0.05$); however, there was a significant difference between the experimental and control groups in the posttest regarding levels 1 n) and 2 of comprehension ($p < 0.05$).

The results of independent t-test did not reflect any significant difference between the experimental and control groups in the posttest regarding levels 3 and 4 ($p > 0.05$).

Discussion

Structural and verbal theorists state that writing is a personal structural concept that depends on the context, purpose, and audience. In 1960, the best approach for teachers in teaching essay writing and scoring essays was to focus on grammar, and surprisingly, structure and wording in hearing-impaired students. Nowadays, it is known that in addition to grammar, vocabulary, organization, and content of essays must be considered as important [10].

The aim of this study was to provide a suitable opportunity for hearing-impaired students to create writings for describe their lived experiences, which is easier than unreal events; for this purpose, the autobiography method was

applied. Autobiography can boost writing skill of hearing-impaired individuals. In this method, the students write essays about their lived experiences and provide their ideas regarding these experiences; in so doing, they get more motivation to write and become encouraged to write a comprehensible text; besides, the reader thinks critically and deeply about the text.

Fathi Vajargah, stated that "Meath-Lang is one of the researchers who applied autobiography very practically and intelligently". She believed that this method can direct teacher's attention toward students' experiences, and study curriculum based on the lived experience is important because students try to find out their own voice in their diaries, teachers also try to find out whether their voices are reflected in it or not. This is effective while writing as both teachers and students travel together and witness more control, complex structure, and fluency of the text, all those features some people think hearing-impaired students cannot have [18].

Herein, the participants were aware that the written texts that are the outcome of their lived experiences will be discussed and modified, so they were trying to give a full description of

what they had experienced and increase their lexical treasury and apply grammatical rules of writing in order for others to better understand them. All the participants were studying each other's texts carefully and critically and reading without understanding the text was not observed in this method.

The main weakness of hearing-impaired students is in understanding, which is not confined only to identifying words, but roots in their poor performance in combining words and interpreting them in a meaningful sentence [19]. The participants of this study in response to questions in the posttest indicated deeper attention to the text of the story in order to understand the author; they could also identify and extract ideas and information from the text by combining words and deriving meaning from this combination. They showed a significant difference in levels one and two of comprehension between the pre and posttests. It was found that they were able to extract meaning from the information explicitly stated in the text.

Since through the autobiography method the students were asked to read each other's texts and criticize them and to give their own interpretations of the topic, the experimental group could interpret and scrutinize (levels three and four) the information obtained from the text due to having a background of critical thinking. Although the mean scores of levels three and four were higher in the posttest compared to pretest, the difference was not significant.

Limited number of training sessions (23 sessions) could be considered the reason for lack of a significant progress in levels three and four of comprehension. Accordingly, conducting this intervention with more training sessions can help the hearing-impaired students to learn more vocabularies and better comply with writing rules; furthermore, with more time to write and criticize the content, the students can answer the questions thoroughly.

In the control group, the students did not show a deep understanding of the text of the story and skimming did not lead to mental development and thinking capacity expansion. The four levels

of comprehension were not significantly different between the pre and posttest scores since these students were unable to understand the meaning of the text.

The results indicated that if an encouraging strategy of writing is implemented for hearing-impaired students, the improved writing skills of these students will lead to positive outcomes such as enhanced comprehension and academic progress. Our results are consistent with those of other studies in that verbal communication and self-expression will improve writing reports, personal narratives, or any other type of requested information [20,21].

Former reports pinpointed weakness of hearing-impaired students in reading and comprehension skills [12-14]; however, the current study reflected a clear picture of students' improvement in different levels of comprehension, especially in levels one and two, and indicated that applying methods that hearing-impaired students can actively apply and providing them the chance to present themselves can boost their comprehension.

Our findings confirm that enhanced writing skill can improve reading comprehension in hearing-impaired students [3]. All the strategies that provide the students with an opportunity for more interaction with their peers help with the development of language and comprehension [20,21]. Written language displays one's thoughts, when a student is interested in writing his/her life experiences, s/he tries to organize her/his thoughts and present her/his experience in a correct form of writing.

Conclusion

Comprehension skill of hearing-impaired students is highly dependent on their language skills, especially writing. Autobiography is a classroom strategy, which focuses on the lived experiences of individuals. In so doing, students' experiences are discovered, expressed, and interpreted, and students are committed to improving writing through achieving a broad set of language functions. It is worth mentioning that enrichment of language skills leads to enhancement of comprehension skills.

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