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THE DIALOGUE STRUCTURE IN THE WRITTEN COMMUNICATION MODEL OF DEAF CHILDREN

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ABSTRACT

The aim of the research was to examine the linguistic structure of the written form of communication for deaf children through the use of simple and complex written sentences, questions asked and answers to questions asked, as well as the extent of the used statements and messages in the form of expression. The study was conducted on a **sample of 70 deaf children**. As a **measurement instrument**, letters of deaf respondents were used on topics of their choice. In total, 45 communication contents, written correspondence were analyzed. The content analysis method and the method of descriptive analysis were used for **data processing**. **The research results** have shown that the questions were not grammatically correct but the respondents understood their essence and adequately responded to them, that although sentences were not linguistically properly written, deaf children can use the dialogue in written communication, that the respondents have problems in writing complex sentences but that there is a possibility of using complex sentences, that the highest percentage of respondents did not use complex sentences correctly, but over 17 % of respondents can use syntaxically correctly written complex sentences in the form of communication that deaf children understand the messages in a written form of communication. Deaf children in written communication have communication but not the linguistic competence.

Key words: deafness–communication–letter–writing–questions–answers–sentences

1 INTRODUCTION

Hearing impairment has direct consequences on writing or writing expression. Hearing impairment results in incorrect perception of the word by auditory means, and the misheard word is mistakenly pronounced and incorrectly written. Writing is a complex brain activity that includes visual, speech, auditory and semantic processes, and successful writing can only be achieved if the function of these processes is at satisfactory level (Salkić, 2015). Hearing children use the heard symbol to make the connection between speech and text, or, voice and letter, and that apply that symbol when writing (Kress, 1997). In hearing impaired children, any deviation from proper writing is a direct consequence of inadequate and incomplete perception of the word by auditory means. Hearing impaired children, as well as hearing children, understand that there is a relation between letters and voices, but they also use other writing strategies, such as handwritten alphabet, forms of lips in pronunciation of individual voices (Mayer, 1998). A child with hearing impairment writes the way it speaks, so its writing, or written text, is the most instructive indicator of his articulation (Savić, 1995). The problem with children with early hearing impairment is not primarily in articulation and vocal elements of speech, but in linguistic elements and word meanings. Problems arise from the use of vocabulary, meaning of words, grammatical rules, syntax, reading, writing, difficulty in word or speech comprehension, or expression (Hasanbegović, Mahmutović, 2004). Deaf persons

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due to the inability to transform the inner voice pattern into a speech expression in communication through letters maximally use shortened speech patterns that determine the communication capability (Salkić, Hasanbegović, Švraka 2018). Learning to read and write involves progressive mastering of different linguistic levels and requires placement, automation, processing of written information, and the development of two types of strategy, a visual-graphic approach that allows access to the meaning of a previously spelled word and phonographic technique that allows the use of a link between the voice and phoneme groups, and graphing, decoding new words, accessing the meaning of newly written words indirectly through their memorized sound form (Gombert et al., 2000). In the written correspondence between the deaf, there is the understanding of short sentences. These short sentences are composed of two or three words, and when a deaf person is trying to make a sentence of more than three words, grammatical and syntactic confusion results in difficult understanding (Salkić, Hasanbegović, Švraka 2018). Marschark, Lang and Alebertini (2002) indicate that about 30% of deaf and hearing-impaired high school children remain functionally illiterate, and the main obstacle to developing literacy skills for most hearing-impaired students is to overcome the basic grammatical rules and structure of language. Deaf readers are at the literacy level below their hearing peers (DiFrancesca, 1972, Allen, 1986, Reinwein, Dubuisson and Bastien, 2001, Gallaudet Institute, 2004), and the reasons for this low level of literacy are still insufficiently understood (Goldin-Meadow and Mayberry, 2001), exposure to the first language (Padden and Ramsey 2000, Mayberry 2007), and the knowledge of the language (Strong and Prinz , 2000, Chamberlain and Mayberry, 2008) (according to Belanger, Baum, Mayberry, 2012). Early diagnosis of hearing impairment enables early rehabilitation intervention, which increases the ability of children with hearing impairment to develop oral speech and writing skills, which can be compared with the hearing children of that age. Attention should be focused on the earliest beginning of writing, as experience has shown that this is most important for the success of children with hearing impairment (Barnett, 2001).

The aim of the research is to examine the dialogue structure of the written form of communication between deaf children through the use of simple and complex written sentences, questions asked and answers to the questions asked, as well as the extent of the statements used and messages in the written expression of deaf children.

The following research topics were set out from the general set of *research sub goals*.

- Examine the interest of deaf children to ask questions in written communication.
- Examine the interest of deaf children in answering the questions asked in the written communication form.
- Examine the use of simple sentences in the form of written communication of deaf children.
- Examine the use of complex sentences in the form of written communication of deaf children.
- Examine the proper use of complex sentences in the form of written communication of deaf children.
- Examine the use of messages in the form of written communication of deaf children.
- Examine the use of statements in the form of written communication of deaf children.

2 METHODS

2.1. Sample

The study was conducted on a sample of 70 deaf children, chronologically aged 10 to 18 years, who attended elementary and high school in education and rehabilitation centers in Sarajevo, Tuzla and Banja Luka. All respondents had a preserved intellectual status and hearing impairment above 75 dB. Considering that the respondents freely chose the contents of the letters in relation to the thematic construction, the recipients of these letters and the number of written letters, there were altogether 90 individual letters. As one sample, the communication content, the letter of the sender and receiver was analyzed. In total, 45 communication contents, written correspondence were analyzed.

2.2. Method of conducting research

Deaf students were subjected to experimental conditions, provided by the method of subjecting respondents to communication through letters. The experiment consisted in introducing the letter to the deaf students as a mysterious content they should write to their schoolmates individually. The experiment was carried out by giving the envelopes and simulating the postal delivery to students, so that the sender sent their letters to the recipients according to their own choice. Delivery of letters to written addresses was provided, whereby the recipients were not aware that they would receive letters. Letters were copied in the process of transport, and the originals were delivered to recipients. Based on the received mail, the respondents wrote the answers. The language structure of the letters was analyzed and their comprehensibility was evaluated.

Variables used:

- Number of questions asked;
- Number of adequate answers to the questions asked;
- The number of simple sentences used;
- The number of complex sentences used;
- The number of correct sentences used;
- The number of messages used;
- The number of used statements.

2.3. Data processing methods

Descriptive analysis and content analysis methods were used for data processing. The results are recorded with numerical values for which the frequencies and percentages were calculated. The content of the letters was analyzed by the method of content analysis in accordance with the set objective and underlying research. The results were evaluated by the commissions along with expert linguistic elaboration.

3 RESULTS AND DISCUSSION

Analysis of the content of the written form of expression of used free topics in relation to the number of simple and complex sentences, questions asked and answers to the questions asked, as well as the extent of the used statements and messages

3.1. Questions asked in written form

Table 1 shows that the largest number of respondents (15.60 %), in their letters, asked one question. A significant percentage of 13.30 % respondents who did not have questions asked, point to the general communication style of deaf children that they do not have a particular sense of curiosity. Five respondents (11.10 %) asked seven questions, and the same number of respondents asked four questions. Four respondents (8.90 %) asked five, three respondents two questions in their written letters. Other frequencies are distributed from one to three in the continuous percentage representation. By the method of content analysis, and based on the variability of the number of questions asked in the writing of the expression of the deaf, through the experimental program of the free topics applied in the communication chain, it was concluded that majority of respondents asked questions in their written form of expression, which leads to the conclusion that in general, deaf persons in written communication with their correspondents have a communicative interest in certain events or happenings.

Difficulties in reading and writing, also in hearing children can, in many cases, be attributed to the deficits of phonological awareness (Scarborough, 2001). Williams' research (2004) shows that hearing impaired children use the written language as a primary form of communication, and learning sign language for their own language communication, while writing is used to communicate both with hearing impaired people and with hearers. Hearing children in the process of learning to write use a sound symbol to make the connection between speech and text, or, the voice and the letter, and that sound symbol are applied when writing (Kress, 1997). In hearing impaired children, any deviation from proper writing is a direct consequence of inadequate and incomplete perception of the word by auditory means. Hearing impaired children, as well as hearing children, understand that there is a connection between letters and voices, but they also use other writing strategies, such as hand alphabet, forms of lips in pronunciation of individual voices (Mayer, 1998).

3.2. Adequate answers to the questions asked

Table 1. Variability of number of questions asked in written expression

Variable	f	%
One question asked	7	15.60
Two questions asked	4	8.90
Three questions asked	4	8.90
Four questions asked	5	11.10
Five questions asked	4	8.90
Six questions asked	3	6.70
Seven questions asked	5	11.10
Eight questions asked	2	4.40
Nine questions asked	1	2.20
Twelve questions asked	2	4.40
Thirteen questions asked	1	2.20
Fourteen questions asked	1	2.20
No questions asked	6	13.30
Total N=45	45	100.00

By looking at Table 2 it can be stated that the distribution of answers to the questions asked is by frequency dispersed. A large percentage of respondents do not have adequate answers to the questions asked in the letter received (24.40 %). However, a large percentage of respondents have a maximum of three (24.40 %) and four (6.70 %) responses to the question asked, which is a significant frequency. Given that the largest number of respondents asked one question in the letter, the significant response rate was 20 %. A large percentage of respondents (15.60 %) gave two answers to the questions asked. By the method of content analysis, and based on the variability of the number of adequate responses to the questions asked in the written form of deaf children, through the experimental program of the free topics applied in the communication chain, it was noted that the respondents who received the letter and answered the questions asked. In addition to the fact that the questions were not grammatically correct, the respondents understood their essence and respond adequately to the questions, indicating the communication competence of deaf persons in the written form of communication.

Deaf readers have a lower level of skills such as words, vocabulary, understanding, and therefore do not develop higher levels of independent strategy, such as questions about themselves, activating previous knowledge, concluding, predicting and tracking misunderstanding (Strassman, 1997). Understanding reading deaf people has the effect and development of vocabulary in a deaf person. In this context, Garrison, Long and Dowaliby (1997), as a result of their study, state a direct link between the knowledge of the deaf vocabulary and that reading comprehension is influenced by the general knowledge of the deaf person. Beijsterveldt and Hell (2010) analyzed the texts of deaf children and adult deaf people and found that deaf people have significant difficulty with lexics and that children are more skilled in spelling than adults. According to Hasanbegović (2008), the deaf child will associate the learned concept with its situational experience.

3.3. Use of simple sentences

By looking at Table 3 it can be concluded that the deaf children in their written communication, at the free choice

Table 2. Variability of the number of adequate answers to the questions asked

Variable	f	%
One adequate* answer	9	20.00
Two adequate answers	7	15.60
Three adequate answers	11	24.40
Four adequate answers	3	6.70
Six adequate answers	1	2.20
Eight adequate answers	2	4.40
Twelve adequate answers	1	2.20
There are no adequate answers	11	24.40
Total N=45	45	100.00

*There is a correspondence between the word adequate and words correct and accurate.

of topic, reached the number of thirty-two of the simple sentences used. The use of simple sentences is in the growing continuity from one to thirty-two. Most of the respondents used eight simple sentences (11.10 %). Four of the respondents (8.90 %) used thirteen and fourteen simple sentences. The highest frequency representation is between eight and fourteen simple sentences, on the basis of which it can be stated that the use of simple sentences frequency appears in a growing extent. Other frequencies are grouped in relatively equal frequency-represented numbers of simple sentences. By the method of content analysis, and based on the variability of the number of readings in the written expression of deaf children, through the experimental program of applied free topics in the communication chain, it has been shown that although sentences are not linguistic properly written, deaf children can use the spoken structure in a written communication form.

Writing of deaf people is characterized by the use of short sentences, several subordinate sentences, and several independent linked sentences with simple verb forms (Yoshinaga-Itano, Suyder and Mayberry, 1996). Hearing impaired children produce short sentences of a simpler syntactic structure than their hearing peers, have a poorer vocabulary and show lexical rigidity, have problems with the use of alternates, show problems in the lexical, morphological, syntactic, pragmatic aspect of written speech, and the most pronounced problems in the field of morphology (Yoshinaga-Itano and Downey, 1992). Yoshinaga-Itano, Suyder, and Mayberry (1996), through the study of deaf persons writing, came to the conclusion that deaf persons use simple verb forms within the short sentences that characterize their writing.

3.4. Use of complex sentences

By looking at Table 4, it can be concluded that the respondents have more problems in using complex sentences than in the use of simple sentences. It can also be concluded that the respondents from the total sample of the analyzed letters only used in one case a maximum of ten complex sentences. Out of the total percentage, 20% of respondents do not even use complex sentences in a written form of communication. The highest percentage (33.30 %) has used a single complex sentence, and 11.10 % up to four complex sentences. By the method of content analysis, and based on

Table 3. Variability of the number ofsimple sentences used

Variable	f	%
One simple* sentence	2	4.40
Three simple sentences	3	6.70
Four simple sentences	2	4.40
Six simple sentences	3	6.70
Seven simple sentences	1	2.20
Eight simple sentences	5	11.10
Nine simple sentences	3	6.70
Ten simple sentences	3	6.70
Eleven simple sentences	2	4.40
Twelve simple sentences	3	6.70
Thirteen simple sentences	4	8.90
Fourteen simple sentences	4	8.90
Sixteen simple sentences	3	6.70
Seventeen simple sentences	2	4.40
Twenty simple sentences	1	2.20
Twenty-five simple sentences	1	2.20
Twenty-seven simple sentences	1	2.20
Thirty simple sentences	1	2.20
Thirty-two simple sentences	1	2.20
Total N=45	45	100.00

*Simple sentence- sentence with only one verb.

the variability of the number of complex sentences used, in the writing expression of deaf children through the experimental program of applied free topics in the communication chain, it is proved that the respondents are weaker in the writing of complex sentences but that there is a possibility of using complex sentences in writing communication of deaf children.

Table 4. Variability of the number of complex sentences used

Variable	f	%
One complex* sentence	15	33.30
Two complex sentences	4	8.90
Three complex sentences	2	4.40
Four complex sentences	5	11.10
Five complex sentences	2	4.40
Six complex Sentences	3	6.70
Seven complex sentences	1	2.20
Nine complex sentences	3	6.70
Ten complex sentences	1	2.20
No complex sentences	9	20.00
Total N=45	45	100.00

*Complex sentence- sentence with two or moreverbs.

3.5. Proper use of complex sentences

By examining the Table 5 it can be concluded that in relation to the syntax structure of the sentence, the proper use of complex sentences was investigated. The largest number of respondents in the analyzed letters (82.20 %) did not use a single complex sentence correctly, but 11% of respondents used a single complex sentence correctly. In two letters, two complex sentences were used correctly, and in one letter six correctly written complex sentences were used. The method of content analysis, based on the variability of the number of correctly used complex sentences, in the free writing of the expression of deaf children through the experimental

program of applied free topics in the communication chain, has proved that the largest percentage of respondents did not correctly use complex sentences but there is a fact that over 17 % of respondents can use syntax correctly in written complex sentences in free writing style.

The achievement of the systematic relation between spoken and written texts is of primary importance for deaf students and is considered the only causative and not correlative variable in the development of literacy in deaf children (Scarborough, 2001). In deaf people the sentences are short, simple, rigid and stereotyped. Rodriguez, Garcia and Torres (1997), (according to Herrera, 2005), came to the conclusion that deaf people are analyzing and treating simple sentences in the same way as their peers. Problems arise when confronted with sentences of a more complex structure, then the debilitated syntactic abilities of the deaf come to light and then the deaf need extra help. Williams (2004) states that the development of literacy in hearing impaired children in the early period follows the development of hearing children. In the first two phases of early literacy, hearing children and hearing-impaired children go in parallel paths and have similar basic strategies for learning writing. In the third stage, when writing and reading begins to depend on the adoption of oral speech, which understand morphies and depend on the ability to associate with the written sequence of their meaning, the differences appear and hearing-impaired children begin to lag behind their listening peers. Schirmer (2003) states that for the understanding of reading in deaf people, their ability to develop knowledge about the structure of the story and to properly use it is very important.

Table 5. Variability of the number of correctly used complex sentences

Variable	f	%
One properly used* complex sentence	5	11.10
Two properly used complex sentences	2	4.40
Six properly used complex sentences	1	2.20
No properly used complex sentences	37	82.20
Total N=45	45	100.00

*Properly used sentence-grammatically correct sentence

3.6. Use of messages

The variable was used because of the assumption that communicative competence in the written form of communication of deaf children is largely based on messages that are an integral part of any form of communication. By looking at Table 6 it can be concluded that 28.90 % of respondents use the message as the bearer of the communication process. The amount of message used in a communication depends on the content of the communication topic. Content analysis shows that these are mostly topics related to the situations and activities of everyday life, so in relation to these contents it is not realistic to expect the use of more messages in the written communication chain. Ten respondents (22.20 %) used two messages, four respondents (8.90 %) three messages, and one respondent (2.20 %) used seven messages in their letters. The content analysis method, based on the variability of the number of text messages used in writing communication of deaf children, through the experimental program of free topics in the communication chain, has demonstrated that deaf children understand how much the messenger with their messages has enriched communication and understand messages in the form of communication. Understanding the message is noticeable in respondents' responses to the received letter.

Hearing impaired students rarely use lower-order automatic writing skills (Mayer 1999, Evans 2004). In hearing impaired students, there is a need to develop higher-order writing skills, such as writing on a topic, organizing ideas, planning, and understanding basic messages when writing, hearing impaired students should know different writing styles. According to Kiessling et al. (2003) for a successful communication, it is necessary to develop listening skills and understanding, skills between silence and adequate communication. Authors define blindness as an approach to the auditorium world through perception of sound, listening as a cure with attention and intent, understanding as the reception of information, meaning or intent, and communication as a two-way exchange of meaningful message.

Table 6. Variability of the number of messages used

Variable	f	%
One used message*	13	28.90
Two used messages	10	22.20
Three used messages	4	8.90
Seven used messages	1	2.20
No used messages	17	37.80
Total N=45	45	100.00

*Message -a discrete unit of communication

3.7. Use of the statements

Statement are communication content that in some way reduces information and often do not require a response in the form of a written communication, so the purpose of this research is to examine how deaf children use this communication content in a mutual written dialogue. By observing Table 7, it can be concluded that 20 % of respondents use up to four statements, and that the frequency of 11 % prevails, where it is noticed that the respondents used eight statements in their communication content. Two respondents used fifteen, sixteen and eighteen statements in the exchange of letters. Frequency characteristics that show the variability of the number of constants used indicate that written dialogue with deaf children is abundant with the findings. By the method of content analysis, based on the variability of the number of statements used in the writing of the expression of deaf children, through the experimental program of applied free topics in the communication chain, it is proved that the findings are prevalent in free writing of deaf children, probably because of the poorly developed vocabulary which makes it difficult oral, and thus written communication and forcing the hearing impaired children to reduce the information they send in a certain way.

The adoption of the language, or the formation of language competence, arises exclusively under the conditions

of active speech communication that enables the understanding and use of numerous spoken language structures, or operations with meaningful language units, phonemes, morphs, words and sentences (Lurija, 2000). According to By Katherine (2008), studies by Beck, McKeown and Kucan (2002), Biemiller and Boote (2006), Snow, Porche, Tabors and Harris (2007) have shown that word development has a positive correlation with reading the text with understanding, so that a person should read comprehension must know the meaning of the word, and therefore the dictionary development should start as early as possible. According to Beech (1989), each new word is a combination of visual characteristics of newly-derived and previously learned words. As words share common features, the process of learning a new word for a child can often be confusing, as if in the initial stage there is no need for full-accurate word presentation.

Table 7. Variability in the number of used constants

Variable	f	%
One used statement*	1	2.20
Two used statements	2	4.40
Three used statements	2	4.40
Four used statements	9	20.00
Five used statements	3	6.70
Six used statements	4	8.90
Seven used statements	4	8.90
Eight used statements	5	11.10
Nine used statements	2	4.40
Ten used statements	3	6.70
Eleven used statements	1	2.20
Twelve used statements	1	2.20
Thirteen used statements	1	2.20
Fifteen used statements	2	4.40
Sixteen used statements	2	4.40
Eighteen used statements	2	4.40
No used statement	1	2.20
Total N=45	45	100.00

* Statement-a definite or clear expressionof something in speech or writing.

4 CONCLUSIONS

- Majority of deaf children in their written communication on free choice topics ask questions, indicating the fact that there is a general interest in the deaf population in certain events or happenings.
- Deaf children in their written expression on free choice topics ask questions that are not
- grammatically correct, but the recipients of letters understand their essence and adequately answer them, indicating the communication competence of deaf people in the written form of communication.
- Through the experimental program of applied free topics in the communication chain, it has been proved that although sentences are not linguistically correct, deaf children can use the spoken structure in the form of communication.
- Deaf children are less likely to write complex sentences than writing simple sentences, but there is the possibility of using complex sentences in the form of communication in the free choice topics.
- A large percentage of deaf children in written communication on the free choice topic inadequately use the complex sentences.
- Over 17% of deaf people can use syntaxically correctly written complex sentences in free writing style.
- Deaf children through the written form can recognize and understand the non-grammatic and asymptotic constructed messages and in the same way respond to the written content.
- These findings are prevalent in the free writing of deaf children, probably due to the poorly developed vocabulary that makes oral or vocal speech difficult, and thus written communication, and forces the hearing-impaired children to reduce in some way the information they send to the interlocutor.

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