

Developing Speaking Skills in Primary Schoolchildren Taking into Consideration Cerebral Dominance

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Abstract.

The article reveals the main problems experienced by primary schoolchildren in mastering the skills of oral sentence construction. The author summarised the assessment indicators of these skills' development level, as well as analysed the influence of right-brain and left-brain dominance on the efficiency of methods applied to teach speaking skills in terms of syntactic indivisibility, discreteness of speech, difficulties in using pronouns, and the number of omitted words. Based on the experiment results, which have been conducted for five years at schools in the city of Ishim with 1500 pupils with different lateralisation of brain function, the author found out special features of developing speaking skills in pupils with right-brain and left-brain dominance. The author developed recommendations on improving the methods of teaching, taking into account the characteristics of right-brain and left-brain dominance. We estimated efficiency of using the developed recommendations based on the indicators mentioned in the article; the latter demonstrated that the recommended differential approach is relevant.

Keywords: oral sentence construction, speech, language, differentiated approach, teaching methods, lateralisation of brain function, primary school, primary schoolchildren.

INTRODUCTION

Speech is embodiment, implementation of language that finds itself in speech and only through it fulfils its communicative function. If language is a tool (means) for communication, then speech is the type of communication produced by this tool. When teachers develop oral or written speech in schoolchildren, their aim is to ensure that they successfully cope with communicative tasks, that is, communication tasks. Consequently, the aim of improving pupils' speaking skills is practical one. A person who produces correct oral or written text, that is, the one who successfully copes with communicative task, is considered to be the cultured person [1-2].

Thus, mastering the skills of faultless, rich oral speech is a necessary condition for person's successful socialization. Teachers have traditionally placed an emphasis on improving speaking skills at all stages of education: from pre-school institutions and primary schools to universities. Nevertheless, the analysis of the current situation shows that even university students may lack speaking skills (despite they are the most developed in cultural terms representatives of the youth). Conversations, interviews and everyday communication with students often reveal vocabulary and syntactic poverty of their oral speech, insufficient control over emotions, leading to major speech errors and even inability to express their thoughts or convey their feelings [3; 4]. More detailed interviews with students enable us to make a conclusion that these skills were not sufficiently developed back at the level of primary school. It is curious that some students, from their current perspective, refer to the fact that the methods used at school (the analysis of oral narrative scheme, explaining the

syntactic role of parts of speech, etc.) were not helpful, but rather hindered and irritated, and therefore, were ignored by pupils. Whereas their own, intuitively discovered mechanisms based on image perception and holistic vision, were more relevant. We established that these students were left-handed, i.e. they had explicit or latent right-brain dominance. Modern theories of lateralisation of brain function provide an explanation for these facts. Left-brain dominance promotes rational thinking, inclination to follow algorithms, requires linear step-by-step implementation of the learning process. While right-brain dominance in thinking process rests on images, perception integrity, and spatial thinking.

Therefore, one can talk about the need to develop differentiated methodological approach [5] to teaching oral presentation skills, taking into account lateralisation of brain function; developing such approach to instruction is actually the purpose of this study.

Research objectives:

- Finding out criteria for assessing the level of mastering speaking skills;
- Identification of difficulties in formulating thoughts into words in the course of oral retelling by pupils, conditioned by different brain hemisphere dominance through the experiment;
- Forming differentiated set of the most efficient methods and techniques for overcoming the difficulties arising in the course of oral retelling by pupils taking into consideration the dominant brain hemisphere.
- Assessment of effectiveness of the recommended differentiated approach.

Teaching methodology experts of the 19th century made great contribution to the issue of oral language developing at the text level (Bunakov N.F., Buslaev I.F., Yelnitsky K.V., Korf N.A., Tikhomirov, Tumim G.G., Ushinsky K.D. and others); so did the modern teaching methodology experts (Barinova Ye.A., Kurdyumova T.F., Kudryashev N.I., Ladyzhenskaya T.A., Lvov M.R., etc.) Psychological and psycholinguistic research on understanding content of texts with various degrees of complexity is analysed in the works by N.I. Zhinkina, I.A. Zimneva, N.A. Menchinskaya, N.G. Morozova, A.A. Smirnova, and others. Aspects of producing the speech utterance were analysed in the papers by Vygotsky L.S., Zhinkina N.I., Luria A.R., Leontiev A.A., and others [6; 7; 8; 9].

However, observations reveal that teachers pay little attention to training primary schoolchildren in oral contextual speech, considering it preparation for essay and summary writing [10]. Thus, they completely ignore special nature of oral speech and difficulties faced by pupils in the process of constructing oral stories. Syntactic speech indivisibility, repetitions, omissions of words are phenomena that acquire special characteristics in oral speech because oral speech sounds. Both oral and written utterances by pupils include special cases of using pronouns, aspectual and temporal verb categories, peculiar properties of constructing complex sentences as well as using conjunctions and connecting words.

At the same time, the need for special training in coherent speech construction stems from the tasks of the Russian Language course, which involves not only mastering the basics of the language, practical skills in reading and writing, but also the ability to speak and build coherent forms of oral utterance [11].

MATERIALS AND METHODS

The authors used in their work the methods of theoretical analysis of educational and psychological literature, course ware, school documentation, as well as methods of empirical analysis: observing teachers' activity at Literature-based reading lessons, conducting experimental research work. The obtained data were processed by means of quantitative (percentage) and qualitative analysis.

THE EXPERIMENT RESULTS

Analysis of academic and methodological literature demonstrated that curricula seldom imply more than one teaching style. Therefore, it is the school teacher who is responsible for changing and supplementing curricula, developing lesson plans with regard to the dominant brain hemisphere so that to ensure pupil success in school. Teachers' expectations from their pupils at lessons are based on their own preferences in the teaching realm. When those preferences do not coincide with pupils' psychophysiological capabilities, an internal conflict arises: the way teachers present information does not coincide with the type of perception this information by pupils. Experimental research involved 1272 right-handed pupils and 159 left-handed pupils (22 control and 22 experimental groups). The study was conducted between 2012 and 2016, covering the entire period of studying at primary school.

Among left-handed pupils there were 155 children with natural left-handedness and 4 children with forced left-handedness (in the early childhood the right hands were injured). For conducting experimental work, we selected primary school pupils since this period is sensitive in terms of developing speech competences.

We asked teachers to extend retelling training at the Russian language classes and Literature-based reading lessons at the expense of analysing the following story excerpts:

1st grade- "Snow Doll" by L.Tolstoy (26 words); "True Friends" by A. Mitt, (28 words);

2nd grade- "Misha's Friends" by V. Oseeva (28 words); "A Live Hat" by N. Nosov (36 words);

3rd grade - "The Rooks Have Arrived" according to G. Skrebitsky and V. Chaplina (77 words); "May Bug" according to G. Skrebitsky, (78 words);

4th grade - "Autumn in the Forest" by K.D.Ushinsky (59 words); "Two Comrades", L.Tolstoy (88 words) and a number of others.

The choice of story excerpts and texts was conditioned by the high degree of content dynamics and emotional intensity, reasonable complexity of the plot, relevant vocabulary, syntactic variety. The size of story excerpts was determined by the level of pupils' development.

Teaching methodology experts representing teachers and undergraduate senior students conducted direct observation of the conditions in which the preparation work on retelling training was organised; they also paid attention to applied methods and techniques, recorded the number and type of mistakes made during story retelling. In order to identify the best methods and techniques, they used various ones in control and experimental groups.

In the process of observation, the following groups of mistakes in the course of oral formulating thoughts into words were recorded:

- 1) syntactic indivisibility;
- 2) speech breaks;
- 3) the number of omitted words;
- 4) difficulties in using pronouns.

DISCUSSION

Observations made in primary school groups in the city of Ishim revealed, that one of the most common speech errors is syntactic indivisibility (observed in the speech of 13% left-brained and 17% right-brained pupils) which may be associated with lack of understanding by pupils of temporal and casual relations, underlying, for example, the following excerpt: *He did not understand it was a shell, and jumped on it the shell shut on eagle's leg and talon then he began to get out and failed.* (Punctuation marks are inserted according to the girl's speech.)

Such phenomenon as **speech breaks** (observed in 11% left-brained and 18% right-brained pupils) [2] indicates the difficulties experienced by pupils during speaking process. The most frequently observed interrupted speech is associated with difficulties in understanding the reading material content.

Interrupted speech can also be caused by pupils' lack of ability to choose words correctly.

Table 1. Dynamics of repetitions in pupils' oral retellings (Average number of repetitions per pupil)

Repetitions	3rd grade (Autumn)	3rd grade (Spring)	4th grade (Autumn)	4th grade (Spring)
Justified				
Left-brained pupils	0.2	0.2	0.2	0.2
Right-brained pupils	0.4	0.3	0.2	0.2
Unjustified				
Left-brained pupils	0.8	0.4	0.2	0.2
Right-brained pupils	0.9	0.7	0.5	0.3

For instance: *He fought and cried, but could not pull out his legs... his claws ... Legs with talons; When he sees it... a fish or some marine animal, he attacked as swift as an arrow.*

Degree of breaks in speech in the experimental classes was recorded taking into account the average number of repetitions during story retelling (Table 1).

Thus, the number of unjustified repetitions is almost 50% less by the end of the fourth grade. This indicates that pupils' speech becomes smoother, less stilted, that pupils can at once express the necessary thought and at the same time they use repetitions in cases when repetitions help make utterances more accurate and more expressive. The latter is proved by the presence of justified repetitions, the number of which remained unchanged (one should take in to consideration that the size of stories for retelling increases).

A large number of omitted words (observed in 23% left-brained and 30% right-brained pupils) is determined by rapid speech rate, the lack of self-control in speakers. In some cases, such inappropriate omissions are explained not only by some negligence in the course of formulating speech, but also by the fact that pupils do not know for sure how to use a particular word correctly. Such omissions are also found in children's written summaries, for example: *The shell kept hold of (the eagle was omitted) for six hours, and when (water was omitted) began to come in and drowned the eagle.*

It should be emphasized that the cases of inappropriate word omission during text retelling were overcome by the end of the fourth grade by means of developing speaking skills in classes, which attracted pupils' attention to the way they speak.

Pupils often face difficulties while choosing pronouns (documented in 19% left-brained and 21% right-brained pupils). Although in some cases a pronoun replacing a noun is separated from it, the listener understands the meaning of summarised text due to wide context and intonation. For instance: *She pinched his leg with its valves and he could not lift it. It is clear from the context that "it" here means "the shell" rather than eagle's leg.*

During observation process, we found out that teaching left-handed schoolchildren should be bright, colourful, as well as based on their right brain dominance, visual and kinaesthetic perception, integrity, system of images, involuntary memory. It is necessary to include in educational process models, patterns, schemes, drawings.

For left-handed pupils, it is difficult to work in large groups under strictly regulated conditions and hard subordination. They need their own initiative and intuition, individual work which does not imply strict regulations and regime. Left-handed schoolchildren's high verbal capacity is determined by the fact that their language centres are represented symmetrically in the left and right brain hemispheres. These language centres' joint work acts as a condition for the emergence of special giftedness. However, right-brained pupils intuitively grasp the general text meaning without being interested in details. Thus, using pictures as sources of coherent oral utterances proved to be highly efficient in work with right-brained pupils due to the following conditions:

- 1) Visual content of pictures corresponds to visual thinking, which is the principal way of thinking at the early stages of studying at school;
- 2) Picture images affect both child's mind and feelings, attract interest to the picture and positively impact the speech figurative and emotional content;
- 3) Interest attracted by the images in the pictures has a significant influence on visual memory, which in turn helps to form working memory necessary for constructing the context of oral speech;
- 4) Pictures facilitate the organization of the learning process itself because it limits the number of observed objects based on which the oral utterance is constructed. Looking at a picture, teacher and pupils see the same events and characters depicted by an artist.

The integrity of observed object combined with its vivid images helps the teacher to guide the selection of material for the content of utterance, making an emphasis on important episodes and details, as well as using vocabulary and syntactic constructions, which pupils may need while constructing the story.

In the first grade, series of pictures representing the story plot with a limited number of characters (from one to three) were used; events developed in beforehand given sequence, which facilitated developing skills at constructing stories in children. In each new part, the environment in which the plot developed became more and more complicated: At first, pictures were presented in which the action took place indoors, then, it happened against the background of the landscape. The number of details which helped to establish the reasons making the character to act as shown in the picture increased.

The work with children's parents also took place. The workshop on the following topics was prepared and conducted:

Topic 1. The origins of left-handedness. Methods for detecting left-handedness.

Topic 2. Psychological and physiological characteristics of left-handed pupils.

Topic 3. Speech disorders in left-handed children and ways to overcome them.

The evaluation of the conducted work efficiency took place during the control experiment, which was arranged using the modified technique of diagnosing story retelling skills by AA. Pavlova and L.A. Shustova [10].

After the research, the following results were obtained (Table 2).

Table 2. Dynamics of the number of language errors (% of the number of pupils)

	Syntactic speech indivisibility							
	1st grade		2nd grade		3rd grade		4th grade	
	control	experimental	control	experimental	control	experimental	control	experimental
Left-brained pupils	13	7	11	7	7	4	4	2
Right-brained pupils	17	10	15	8	12	8	8	5
Speech breaks								
Left-brained pupils	11	7	9	4	7	3	4	1
Right-brained pupils	18	13	16	10	13	10	8	4
Omissions of words								
Left-brained pupils	23	17	18	13	13	11	7	5
Right-brained pupils	30	21	25	19	19	11	12	7
Difficulties in using pronouns								
Left-brained pupils	16	19	9	14	8	5	4	2
Right-brained pupils	15	21	10	16	12	10	7	5

Note: *Control groups; **Experimental groups

CONCLUSION

Analysing pupils' retelling skills, one could find out that children with right-brain dominance do not control the accuracy of their speech. They poorly perform this type of activity, requiring constant self-control. While speaking they face problems in terms of grammar and word selection. There are omissions of meanings, especially in cases of right-brained children with increased impulsiveness.

Pupils with dominant left cerebral hemisphere control their own utterances, although they are insufficiently successful in terms of free conversion (word formation). They face certain problems when summarizing. Left-brained children need help in improving oral speech fluency. However, the accuracy of their choice of words, as a rule, is higher than the one in their right-brained classmates.

As a result of experimental work, we have found out that right-brained pupils experience less difficulties in formulating thoughts into words in the course of oral retelling, if in the process of preparing for retelling they use gestalt (images). They learn to formulate thoughts into

words, when retelling texts related to real events or practical activities of pupils, and when they use creative types of retelling. In the course of preparation for retelling, they can also use the background music, speech and musical rhythm.

In work with left-brained pupils it is necessary to follow the process of formulating thoughts step-by-step, to focus attention on details, to offer linear style of presenting information and multiple repetition of material, and finally, to keep quiet both during preparation for retelling and retelling itself.

Pupils with different learning styles can in fact help each other. For instance, a child with right cerebral hemispheric type of thinking, while working with the left-brained child over an exercise in which it is necessary to assess the importance of text part, can demonstrate to his companion ways of applying schemes, using data from context, highlighting the essence, search for known information, and comparing facts. Left-brained pupils can share with their classmates with ways of highlighting the necessary

text components, identifying differences, creating categories.

In case of regular, properly organized work, left-brained and right-brained pupils' retelling skills become more coherent and smooth. They overcome speech breaks associated with lack of understanding of read text. Interrupted speech and unjustified repetitions, caused by pupils' vocabulary and syntactic poverty, reduce.

Teachers should periodically organise oral retelling training sessions during the Russian language lessons, as well as combine them with summary writing classes, or arrange the sessions independently. The use of retelling training in order to enrich pupils' speech and provide them with basic techniques, necessary for working with texts and preparing for their summaries, is the critical and important task for the primary school teacher.

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