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Clouds of words as a didactic tool in literary education of primary school children

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Abstract. The study reveals the possibilities of using the words' cloud in the literary education of primary school children. The authors consider the possibility of using a cloud of words to visualize the keywords of the text for the translation of the work of art, the interpretation of the main idea and the characteristics of the artistic image. The words' cloud can also be used as a reference summary to answer questions about the content of the work or to present the results of a school project by students. Moreover, in reading lessons, this tool can be used as a tool to identify the topic of the lesson. The study reveals the possibilities of the didactic tool of the words' cloud for the development of speech of primary school children, in particular, in composing their own texts and editing them, the ability to explore words that the student uses too often and avoid tautology. Using the method of a problem situation and visually demonstrating information through a cloud of words, the teacher pro-motes the activation of students' mental activity, the development of creative abilities and critical thinking. The study tested the use of the electronic resource WordArt in primary school – a website for creating a "word's cloud" and proved its effectiveness in reflection, as well as creating an image of the main idea of the lesson, general conversation, its use as didactic material. The authors used the technology of learning using a cloud office package Google Drive to write a draft of their own statement of primary school children. The authors investigated the use of the service in the lesson of literary reading during the organization of reading activities in the following areas: in the "cloud of words" to encrypt the topic of the lesson; using the cloud as visual material or as basic information to explain new material; encrypt certain words from the text in the cloud, students' task to guess the work; create a cloud of words of positive and negative characters of the work; write a story on the topic; create an "encrypted postcard" to the writer or hero of the work. In the course of experimental work, the effectiveness of the use of this didactic tool in the lessons of literary reading in primary school during the analysis of texts in order to identify the most important associations of students was confirmed.

Keywords: cloud of words, visualization, electronic resource, WordArt, literary education, primary education

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1. Introduction

1.1. The problem statement

The development of modern education is directly related to the informatization of society [4]. Currently, the effectiveness of the teacher is impossible without the skillful use of Internet resources in the educational process, the use of various services for learning. The use of information and communication technologies is rapidly becoming important, especially those that allow the teacher to develop tasks aimed at developing the cognitive interest of students, their activity in the learning process. Among such technologies, the "cloud of words" is becoming popular, which helps to increase the productivity of the lesson, students' interest in completing tasks, developing their critical thinking and creativity.

A word cloud, as defined by Gottron [7], is a visualization of the frequency of words in a text in the form of a weighted list. This technique is commonly used to visualize thematic content. Thus, the word cloud can be an alternative way of structuring and visualizing textual information, which is appropriate to use in educational work. Unusual in form and content, the word cloud draws attention to the object and focuses students on the markers of the text, the keys to understanding it. The shape of the cloud is usually symbolic, and its filling with words reflects the semantic accents. The symbolism of "clouds", the definition of key-words in them and the emphasis on the main thing in the text suggests the use of this tool in the literary education of primary school children. Thus, word clouds can be successfully used in the implementation of the leading tasks of literary reading in primary school, provided by the standard program, in particular: mastering the techniques of structural-semantic and figurative analysis of the text; development of figurative, critical, logical thinking and speech; formation of skills of critical use of media products; development of imagination and ability to express oneself in different types of literary and creative activity, to express one-self and communicate with others with the help of one's own media products.

1.2. Literature review

We have analyzed studies by deNoyelles and Reyes-Foster [3], Jayashankar and Sridaran [8, 9], Olefirenko et al. [17], Philip [18], Shyshkina [23], Skiba [24], Stott, Zamoyski and Alberti [25], Viveiros and Medeiros [27], Wang and Sumiya [28], Zan, Zan and Morgil [29] that focus on the use of the "word cloud" in education and provide an appropriate understanding of how this didactic tool contributes to the effectiveness of learning.

Franchuk [5], Lytvynova [14], Popel and Shyshkina [19] characterized the features of the cloud-based learning environment. Damniskaya [2] considered in its study cloud-based platforms, tools and services. Among the advantages of cloud platforms, the researcher notes the possibility of teamwork (sharing an array of data for multiple users); synchronization (updating files on different devices); accessibility (cloud is available to anyone from anywhere where there is access to the Internet).

Of the many works on cloud technology, we have relied on those relating to primary school in general and the literary industry in particular. Sheina [21] has developed guidelines for the use of SMART boards in primary school lessons. The researcher noted that with the help of modern information and organizational systems happens the creation of intelligent, high-tech,

comfortable for human educational environment. Shustakova [22] researched the problem of forming students' cognitive activity by means of Google services. The researcher noted that "in the process of using Google services, the teacher can more flexibly man-age the process of cognition, motivation, organize independent work of students in the form of individual or group tasks".

In accordance with the problem of our study, our attention attracted the work of Kaser and Lemire [12], which associate the drawing of cloud tags with algorithms for visualization in the cloud. Bilousova and Zhytienova [1] consider cloud services as an effective visualization tool, which makes it possible to: "intensify the educational process at the expense of economic in volume and time figurative representation of educational material; to focus students' attention on the main semantic elements of the educational material, highlighting them in the visual image and at the same time filtering out secondary and unnecessary details; to create a positive emotional background during the lesson, to awaken the cognitive interest of students; to promote the formation of the initial correct ideas of students about the object of study".

Makhachashvili et al. [15, 16] consider the technology of visualizing the text of poetry using emoticon symbols on the Emoji Maker platform, which not only activates students' thinking, but also develops creative attention, allows to briefly reproduce meaning poetry in an unusual way. The authors note that emojis in the study and development of literature is a completely logical tool because emoticons, emojis, installed in the digital continuum, express the feelings, emotions and moods of the lyrical hero. It was found that sensuality can be reconstructed using this type of metalinguistic digital continuum. This study prompts us to create eidos of works of art through a cloud of words using the WordArt service.

Jayashankar and Sridaran [10] created a superlative model using word cloud for short answers evaluation in e-learning. The unique model created by the authors provides increased accuracy by constructing word clouds. The model uses appropriate semantics with visual appeal to partially automate the evaluation of free text. The use of tag cloud as a tool for visualizing information and finding information to raise awareness is discussed in the study of Ram [20]. The results of this study show that tag clouding helps to create a visual effect and helps users learn about the availability of resources in the library, along with joint activities such as reviews and feedback, choose the right type of reading material. Godwin-Jones [6] believes that web browsing, and reading should be complemented by the ability to sort, navigate, and think critically. The author considers the means, tools, services, and approaches to search, create, and convert texts on the Internet, as well as their opportunities for language learning.

Many teachers are actively using cloud technology in their work. In particular, Kalinkina [11] suggests using the word cloud as follows: as didactic material in lessons (electronically or printed); to provide information about oneself or about a person (in the portfolio, in generalizing the experience, in presentations, on the site and / or in the blog); to create bright products (leaflets, information and advertising booklets, newsletters, presentations); to focus on important dates, events, key moments (in generalizing the experience, in analytical materials, in presentations, etc.); as a visualization of the criteria for evaluating something; to present the results of a survey or discussion, etc. Teachers' forums are actively discussing the use of cloud technologies in the classroom, which indicates the urgency of the problem and its practical significance.

1.3. The aim of the research

Thus, word clouds are increasingly used in various fields of education, teachers-practitioners create a variety of media educational products for students to visualize and structure texts, it's easier remembering, but the methodology and effectiveness of "clouds" in reading lessons in primary school remains unexplored.

The purpose of this article is to substantiate the prospects of using the word cloud as a didactic tool in the literary education of primary school children, organizing and testing the effectiveness of reading activities of primary school children by activating students' work with visualized keywords in the weighted list.

To achieve this goal, it is *necessary to solve the following tasks*:

- to analyze scientific sources on the problem of using the word cloud in education;
- to characterize the possibilities of using the word cloud in working with younger students in reading lessons;
- to check the effectiveness of reading activities of primary school students, provided that the work with the word cloud is intensified.

2. Discussion and results

Within the framework of this problem, a study was conducted to study the possibility of using the "word cloud" as a means of activating the analytical thinking of younger students in the process of reading. Based on the state requirements provided by standard educational programs, several tasks with a cloud of words for students of 3rd–4th grades of primary school were developed for the introduction of the subject "Literary Reading". 5 topics from literary reading were selected, which relate to the study of various genres of fiction works of children's literature (literary tales, stories, poetry) and the study of paremias. In the distance learning process, students worked with word clouds from home computers, tablets, and smartphones during online lessons, adhering to the standard requirements for such work by younger students. Clouds of words printed on paper were used as didactic material to work in the classroom.

On the topic of "Oral Folk Art" in the 3rd grade, word clouds were created from proverbs and sayings, which were offered to students for analysis and recognition of familiar paremias. Viewing, analysis, interpretation of visual media products in the form of a team game contributed to the effectiveness of awareness of the content and memorization of small folk genres, ensured the activity of students and their interest in oral folk art.

During the study of epic works (stories, literary tales, excerpts from stories), word clouds were created in accordance with the tasks: the formation of skills in younger students to find in the text words, expressions, sentences that are key to understanding the text, character's characteristics; independently determine the theme of the work and the main idea with the help of visual media products; cor-relate the main idea of what is read with the title, proverb, illustrations. Students were asked to consider a cloud of words that visualized the key words of the text to translate the work of art, interpretation of the main idea, the characteristics of the artistic image. Analyzing any text, students must activate the creative imagination. Keywords will help you easily remember and reproduce the content of a work of art (figure 1, 2).

Figure 1: Clouds of words based on the works of Zirka Menzatyuk.

Figure 2: Clouds of words based on the works of Lesya Voronina.

The word cloud was also used as a clue to answer questions about the content of the work. The means of visualizing the frequency of words in the form of a weighted list in the works about children accentuated their feelings, hobbies, dreams, character traits; in works about nature – the state at different times of the year, artistic means of depicting literary landscapes; in works about the Mother-land – native language, traditions, history, native land; in works about outstanding people – discoveries, achievements, character traits, peculiarities of life, etc.

In order to determine the theme of the work of art, students were asked to work on word

clouds composed of unfamiliar text, so that students can guess what in its content is. To emphasize the bright artistic means of the work, students were offered a text with spaces accompanied by a task to fill them with a cloud of words. During the generalization on the topic, students were asked to collect in a cloud of words the names of the heroes with the title of the work, the names of the authors and the names of the works.

In the process of studying poetry for children, the study of the means of artistic expression, finding words with figurative meaning in the text with the help of a cloud of words was updated. This ensured the development of the skills of younger students to highlight in the text vivid images, artistic means that help to convey the overall emotional tone of the work, mood, to recreate in the imagination pictures of nature, its state, place of events and more.

With the help of visualization of keywords in the form of a weighted list, younger students were invited to present the results of the school project. With the help of WordArt service, students created a cloud of words that they associate with writers who write for children. Note that students were able to work with English-language service due to the specialization of the school (learning a foreign language).

Didactic materials and students' examples from word clouds were created using the electronic resource WordArt (https://wordart.com). This online service allows one to create a mosaic of keywords and phrases, attach links to each of the words to make the cloud interactive. For visual design of the word cloud, additional settings were used: shapes – choosing the shape of the cloud from the library (one can upload your image); choice of fonts; layout formation – choosing the location of words in space; choice of colors and animation options.

Using the method of problem situation and visual demonstration of educational information with the help of a cloud of words, the teacher promotes the activation of mental activity of students, the development of creative abilities and critical thinking. It is appropriate to use the word cloud as a didactic tool for the development of speech of junior schoolchildren, mainly in composing their own texts and editing them. Younger students were asked to create a cloud of words from their own statements about the children's book of a modern Ukrainian writer. In this way, students had the opportunity to explore the vocabulary of their own utterances, to see the words they use too often. This technique has become effective in detecting one's own mistakes to avoid a tautology in the future. In order to enrich the oral and written speech of primary school children, the task was formulated to form word clouds on various topics, such as: "Why is it so important to have friends", "Meeting with a writer", "My favorite book".

The study used the technology of learning using a cloud office package Google Drive to write a draft of the own statement of younger students. Thanks to the possibilities of this technology, students created their own texts, had the opportunity to get acquainted with the texts of their classmates, to enter an imaginary dialogue with them, to use the most successful language constructions. In addition, Google Docs tools allow students to see and correct their own spelling mistakes.

Moreover, in reading lessons, the word cloud tool was used as a tool to identify the topic of the lesson through the visualization of keywords. It is important that the generated cloud can be embedded on the teacher's website or blog, saved in JPG, PNG, or PDF photo format, printed as didactic material, sent by e-mail, placed on interactive whiteboards.

In order to test the effectiveness of the use of the word cloud in reading lessons in 3rd–4th grades of primary school on the basis of reading competence of primary school students one

has determined criteria, indicators and levels of testing the results of experimental research. The structure of reading competence according to Vashulenko [26] was taken as a basis, which identified the following components: cognitive (which includes semantic perception, mental processing and interpretation of what is read); communicative (speech development, which is determined by the coherence, content and imagery of speech, accuracy and appropriateness of the use of language in creating an artistic image, the ability to talk about what is read, to create their own statements on the content of what is read); value (understanding of social, moral and ethical values reflected in the literature); activity (analysis of the work, the ability to think outside the box, to enter into a dialogue with the author or hero), personal and creative (motivation for literary and creative activities).

In table 1 we will define criteria and indicators of check of activation of reading activity by means of a cloud of words according to characteristics of reading competence.

Table 1
Criteria and indicators for checking the activation of reading activity by means of the cloud

Criteria	**Indicators**
Cognitive	Student comprehends the read work of art; logically structures it with a cloud of words; clearly retells the content based on keywords; identifies the main components and semantic accents with a word cloud.
Analytical	Student analyzes the work based on words read with the help of a cloud. Based on keywords – characteristics of the literary hero builds his dialogue with the character of the work of art, the writer. Determines the main idea of the work, analyzes the artistic means.
Communicative	Based on the associations of the work with the cloud of words, the student formulates his own opinion about what is read, creates his own statements on the content of what is read. Based on keywords one can predict what will be discussed in the new text. Creates your own visual media products based on the read text.
Reflexive	Student understands the values reflected in the literature. Based on a cloud of words, it creates a review of a read children's book.

According to the defined criteria and their indicators we will define levels of results of reading activity of younger schoolboys who worked at lessons of literary reading with clouds of words.

Cognitive criterion of reading results. The high level is determined by a balanced understanding of the read work. The student, guided by a cloud of words, logically structures the content of the work, clearly retells the content based on keywords. The student emphasizes the important points of the work of art with a cloud of words. Sufficient level is characterized by understanding of the read work, the ability to logically structure the work. Acceptable inaccuracies in the translation of the content. Understanding of key words and events in the work. The average level is determined by students who make significant mistakes in determining the structure of the content of the work, the translation of the work. Keywords from the word cloud do not help to identify important accents in the work. A low level indicates a lack of understanding of what is being said in the work. The word cloud does not help the student to navigate in the key

points of the read text.

Analytical criterion. The high level determines the ability of the junior student to analyze the work, mainly to determine the theme and idea of the work of art, to characterize the main characters, artistic means, emotions and feelings. The student easily creates word clouds based on what he has read. Based on key words – characteristics the student without obstacles builds a dialogue with the heroes of the work of art, the writer. Determines the main idea of the work, analyzes the artistic means. It is easy to navigate in certain categories of analysis if it is possible to use a word cloud. A sufficient level is characterized by the student's ability to analyze a work of art with minor errors and to form word clouds based on the analysis. Using the keywords of a balanced list, characterizes and establishes a dialogue with literary heroes. Focuses on word cloud hints. The average level is determined by gross errors in the analysis of the work of art and features of its poetics (characters, events, theme, idea, etc.). It is difficult for a student to use a cloud of words in analytical activities. A low level indicates the difficulty experienced by the student in formulating opinions about what he has read. The student cannot match the work to the visual content.

Communicative criterion. The high level is determined by the fact that the student carefully and meaningfully formulates his own opinion about what is read, actively without hindrance produces his own statements on the content of what is read. Based on keywords determines the content of unknown text. Creates his own word clouds based on the read text to determine the main idea of the work, to reproduce an important event or literary portraits, or landscapes, etc. Sufficient level is characterized by the logic of formulating an opinion about what is read, the ability to create their own statements with minor errors on the content of what is read. One has little difficulty in identifying keywords to create a cloud of words by reading. The average level is determined by the desire to express their own opinions about the read work, but there are difficulties in formulation. The utterances do not fully understand the text read, the keywords do not help to accurately reproduce the characteristics of the characters, the events of the work of art. The low level indicates a lack of understanding of the literary text to formulate a complete idea of what is read and create several key words to emphasize the main idea of the work.

Reflexive criterion. A high level is determined by a deep perception and understanding of the values reflected in the literature, the ability to defend them in discussion. Based on the associations of the read with the word cloud, the student creates a review of the read children's book, determines its value for himself. A sufficient level is characterized by an understanding of the values reflected in the work, the ability to create feedback on the read work or book with minor flaws. The middle level is characterized by an understanding of the values of the work, but the student has difficulty in compiling a response to what is read. A low level indicates a partial understanding of the values reflected in the work.

Research of reading activity of junior schoolchildren with the use of word cloud were conducted in the Kyiv gymnasium of oriental languages No. 1. Student of 3rd-4th grades of primary school took part: experimental classes (EC) – 128 students; control classes (CC) – 129 students). Comparison of the results of reading activities of EC and CC students are shown in table 2.

The study confirmed the effectiveness of the visualized content of the work in the form of a weighted list of keywords (figure 3, 4).

Thus, in our opinion, the use of cloud services in reading lessons during the organization of

Table 2
Criteria and indicators for checking the activation of reading activity by means of the cloud.

Cognitive		Analytical		Communicative		Reflexive	
EC (128)	CC (129)	EC (128)	CC (129)	EC (128)	CC (129)	EC (128)	CC (129)
18	10	18	9	19	10	19	10
73	60	71	58	74	60	73	62
32	52	34	55	32	55	32	50
5	7	5	7	3	4	4	7

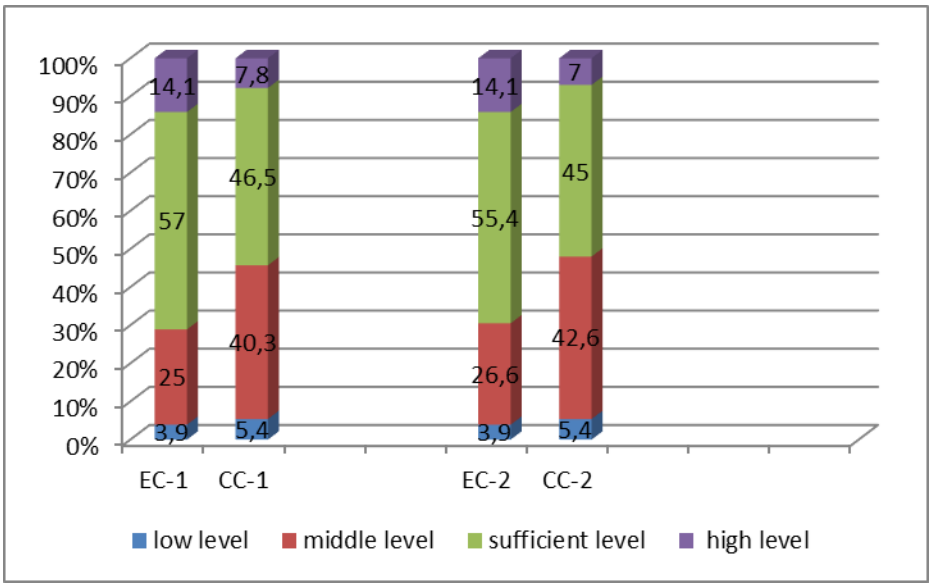

Figure 3: The results of the study of the effectiveness of the use of the word cloud as a didactic tool in reading lessons in primary school during the analysis of texts (1 – cognitive criterion and 2 – analytical criterion).

reading activities has several advantages:

- formation of the ability to work with media products, development of communication skills, creative approach;
- methodological advantages (expanding the possibilities of providing educational information, creating heuristic conditions for organizing the study of a work of art);
- activation of creative thinking processes, promotion of its divergence, in particular originality, initiative, ingenuity of junior schoolchildren;
- development of creative activity of students, which is determined by the ability to generate ideas, discover new ones;
- the opportunity to involve in the analysis of the work of art the maxi-mum number of students, increase productivity and efficiency of reading activities of primary school children;

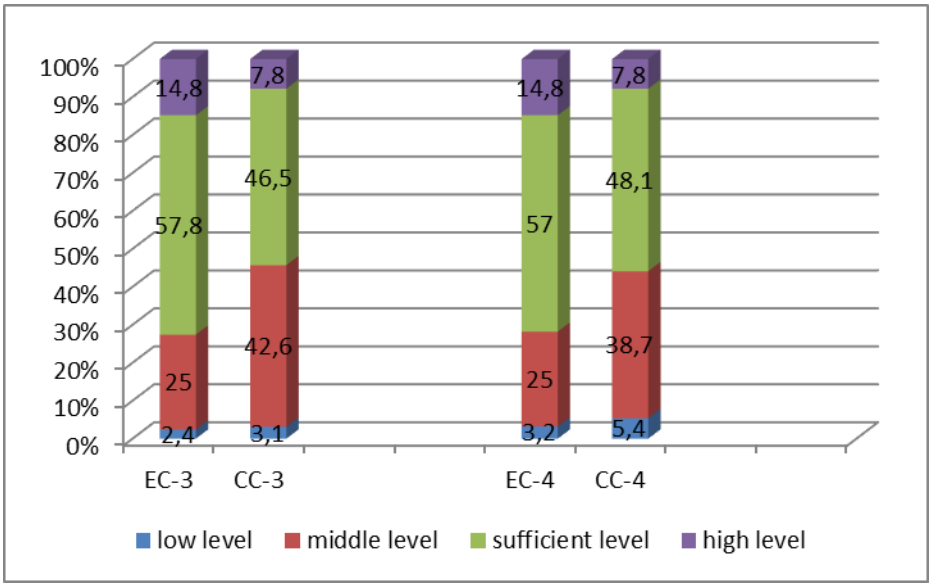

Figure 4: The results of the study of the effectiveness of the use of the word cloud as a didactic tool in reading lessons in primary school during the analysis of texts (3 – communicative criterion and 4 – reflexive criterion).

- development of cognitive interests, strengthening the motivation of reading, creating a positive mood and a situation of success in the lesson of literary reading;
- ease of demonstration (on the website or in the blog, printed as didactic material, on interactive whiteboards, etc.).

3. Conclusions and prospects for further research

The study tested the use of the electronic resource WordArt in primary school – a site for creating a "word cloud" and proved its effectiveness in reflection, as well as creating an image of the main idea of the lesson, general conversation, use as didactic material. A word cloud or a visual reproduction of a list of words of a certain topic on one common image allows one to create a situation of success in the lesson, to intensify the work of all participants in the educational process, promotes better learning.

The authors investigated the use of the service in the lesson of literary reading during the organization of reading activities in the following areas: in the "cloud of words" to encrypt the topic of the lesson; using the cloud as visual material or as basic information to explain new material; encrypt certain words from the text in the cloud, students' task to guess the work; create a cloud of words of positive and negative characters of the work; write a story on the topic; create an "encrypted postcard" to the writer or hero of the work.

In the course of experimental work, the effectiveness of the use of this didactic tool in the lessons of literary reading in primary school during the analysis of texts in order to identify the most important associations of students was confirmed.

The study proved the advantages of this service: one can add words to the cloud both manually and using links; the ability to change the shape of the cloud and other parameters to one's liking; display selected words in a certain color; free download of ready-made "clouds" from the resource. We consider the disadvantage of the difficulty in the use of primary school students of foreign language services without special training.

The authors of the article see prospects for future research in the development of didactic materials for literary reading for students at the New Ukrainian School [13] with the use of the word cloud, finding opportunities for the use of cloud technologies in the language and literature of primary education.

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