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Developing Logical Thinking Through Digital Resources in Mother Tongue Lessons

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Abstract: This article explores the possibilities of developing logical thinking in primary school students through mother tongue lessons, as well as the methodology of using digital resources. Interactive exercises, logical tasks, and problem-based situations created with the help of digital technologies are substantiated as important factors in increasing learners' cognitive activity. Effective use of digital resources significantly enhances students' logical thinking skills.

Keywords: digital resources, logical thinking, mother tongue, primary education, interactive method, cognition, innovation.

Introduction

In today's era of globalization and digitalization, new approaches are being introduced into the field of education. Rapidly developing technologies and the intensifying flow of information create new demands for learners. Developing logical and critical thinking skills, especially in primary education, has become one of the essential pedagogical tasks.

Logical thinking refers to the learner's ability to understand cause-and-effect relationships, compare, analyze, generalize, and draw conclusions.

These skills can be effectively developed through mother tongue lessons. Since language is a means of thinking, students' logical thinking develops consistently through language-related tasks. From this perspective, the use of digital resources in mother tongue lessons not only makes classes engaging but also enhances students' logical reasoning activity.

The aim of this article is to outline effective methods for developing logical thinking in primary school students through the use of digital resources in mother tongue lessons.

The Concept of Logical Thinking and Its Importance in Primary Education

At the primary school age, children's thinking develops mainly through concrete images and examples. Therefore, the knowledge presented to them must be simple, clear, and logically connected. The main components of logical thinking include analysis, synthesis, comparison, generalization, and conclusion-making.

Organizing exercises in mother tongue lessons on a logical basis teaches students to think independently. For example, identifying relationships between words, maintaining sequence while constructing sentences, and extracting the main idea from a text all contribute to the development of logical thinking.

This period is the most suitable stage for forming mental operations such as analysis, synthesis, comparison, and generalization. During these years, children gradually transition from concrete-object thinking to abstract thinking. Therefore, the following psychological factors should be taken into account when designing mother tongue lessons:

Encouraging learner activity – interest is the main factor of logical thinking; meaningful and interactive tasks strengthen it.

Relying on the learner's speech experience – thinking is closely linked to speech; a rich speech environment supports cognitive development.

Creating problem situations – solving a problem requires independent thinking.

Using game-based technologies – younger students better understand logical connections through games.

Visuality – visual models help children perceive cause-and-effect relationships faster.

Thus, tasks tailored to learners' psychological characteristics significantly develop their thinking potential.

Possibilities of Digital Resources in Developing Logical Thinking

Digital resources are electronic tools that allow information to be processed, stored, presented, and used in the learning process. Today, digital resources have entered almost all stages of education, and their use in primary education significantly increases learning efficiency.

Digital resources include:

Interactive presentations (PowerPoint, Canva, Prezi)

Electronic textbooks and online platforms

Animations and video lessons

Online tests (Quizizz, Wordwall, LearningApps)

Didactic games

Graphic organizers, diagrams, maps

Mobile applications

Their educational possibilities include:

Explaining topics visually and effectively

Enabling independent learning

Activating logical thinking through targeted tasks

Increasing interest in learning

Ensuring individual learning paths

For example, digital exercises such as clusters, tests, logical chains, riddles, and problem-based tasks serve as effective tools for developing logical thinking.

Use of Digital Tools in Mother Tongue Lessons

Mother tongue lessons can integrate the following digital tools:

Interactive tests – identifying the odd or illogical word, constructing sentences, choosing correct variants.

Logical riddles – drawing conclusions based on images and words.

Multimedia presentations – understanding text meaning, finding the main idea, identifying the sequence of events.

Online game-based tasks – increasing learner activity and creating a competitive environment.

For instance, in the digital exercise “From words to sentences – from sentences to texts”, students selected words based on given images, arranged them logically, and created short coherent texts, thereby improving their ability to express their thoughts consistently.

Formation of Logical Thinking Through Mother Tongue Lessons

Since primary school students’ logical thinking is not yet fully developed, guiding their thinking, teaching them analysis and synthesis, and supporting their cognitive processes is especially important. Mother tongue lessons are ideal for this because language and thinking are inseparable concepts.

The main tasks of logical thinking in primary education are:

Teaching students to think independently

Helping them identify relationships between events

Developing text analysis skills

Structuring oral and written speech logically

Enhancing critical and creative thinking

The effectiveness of mother tongue lessons largely depends on how well they activate students’ cognitive processes. Modern digital technologies can significantly accelerate and enrich this process.

Advantages of digital resources:

Visual clarity

Interactivity

Adaptability

Increased motivation

Instant feedback

Digital resources allow students to strengthen skills such as grouping and comparing words, analyzing sentence components, constructing texts, identifying logical connections, and solving problem-based situations.

Methodological Directions for Developing Logical Thinking Using Digital Resources

1. Strengthening logical thinking through didactic games

Game-based tasks are among the most effective methods for primary learners. Examples include:

“Find the correct answer”

“Identify the hidden word”

“Construct sentences from words”

“Identify the character in the text”

Such tasks encourage active participation and accelerate thinking processes.

Conclusion

Using digital resources in mother tongue lessons is gradually becoming an integral part of the modern educational process. Theoretical and practical findings indicate that digital technologies effectively activate students’ learning, promote independent thinking, and develop logical reasoning.

Digital resources not only make lessons engaging but also serve as a strong didactic tool that helps learners systematically acquire knowledge. Students taught through digital exercises demonstrate faster and more effective mastery of logical operations such as identifying relationships, reasoning, comparing, generalizing, and drawing conclusions.

Digital tools also offer methodological convenience for teachers by enabling individual assessment, identifying learning difficulties quickly, optimizing the lesson process, and enriching the content.

Moreover, the use of digital technologies contributes to the formation of 21st-century competencies, including information literacy, fast thinking, creativity, problem-solving, communication, and collaboration.

In general, integrating digital resources into mother tongue lessons is one of the most effective mechanisms for developing students' logical thinking. Implementing methodological recommendations in practice enriches the content of primary education, systematizes students' thinking, and builds a strong foundation for their future learning stages.

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