

METHODS OF USING ALTERNATIVE THINKING IN DEVELOPING THE CONCEPT OF FRACTIONS

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Abstract

The article analyzes the role of the divergent thinking approach in the formation of the concept of fractions in primary school students. Divergent thinking is the ability to look at a problem from different angles and propose several solutions. This approach, which provides a deep and correct understanding of the concept of fractions, allows students to imagine fractions in different ways, compare them, find equivalent fractions, and apply them in different models and contexts. The article explains with practical examples how this approach can be applied in the educational process.

Keyword: Fractions, alternative thinking, divergent thinking, visual models, mathematical competence.

Introduction

The concept of fractions is an important part of the elementary mathematics curriculum. However, understanding fractions—that is, how many parts of a whole a fraction is, its quantitative and geometric meaning, and its comparison with other fractions—is a complex skill for students. Therefore, using an alternative thinking approach to teaching this topic is effective.

What is divergent thinking?

Alternative thinking is:

Looking at a situation or problem from multiple perspectives;

Proposing different ideas and solutions;

A type of thinking that requires creativity and flexibility.

This approach to fraction development leads to:

Seeing fractions in different contexts (e.g., a piece of chocolate, a piece of a circle, pieces of paper);

Representing a fraction in different ways (e.g., $\frac{2}{4} = \frac{1}{2}$);

Comparing or explaining fractions using different methods.

Ways to develop alternative thinking when explaining fractions

This approach to the formation of the concept of fractions leads to the following: Seeing fractions in different contexts (for example: a piece of chocolate, a piece of circle, pieces of paper);

Expressing a fraction in different ways (for example,);

Comparing or explaining fractions using different methods.

Methods for developing alternative thinking when explaining fractions

a) Working with visual models

Showing students the same fraction through circles, rectangles, lines, and other models.

Example: Showing " $\frac{3}{4}$ " as a circle, a piece of paper, a piece of cake.

b) Understanding fractions through different contexts

What do you imagine when you think of " $\frac{1}{2}$ "?

Half a chocolate bar, half a glass of water, 30 minutes (half of an hour), etc.

c) Expanding thinking through games and tasks

For example: – find the common denominator of these fractions.

The student understands that they represent the same amount (all).

d) Reverse tasks

For example: "Which fractions can be equal to?"

Amaliy mashg'ulotlardan namunalar

Task 1. Express the fraction " $\frac{3}{4}$ " in at least 3 different ways.

Task 2. Write the fraction represented in the figure below and make it equal to other fractions.

Task 3. Write a fraction that is less than half but greater than $\frac{1}{4}$.

Task 4. Write at least 3 other fractions that are equal to the fraction " $\frac{1}{3}$ ".

Task 5. Come up with a situation in which the fraction $\frac{2}{5}$ is used (an example from real life).

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