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Research Article

EDUCATION OF CODE, PROBLEM SOLVING, ALGORITHMICAL THINKING IN PRIMARY CLASS PUPILS

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ABSTRACT

In this article, early learning classically includes reading, writing, and mathematics. The importance of addition in "counting" as a basic skill that every child should learn. The goal is development. Computational thinking does not come naturally and requires training and guidance. This study was conducted to determine the effects of coding education on elementary school pupils. It has a positive effect on elementary school pupils' attention, problem solving, and algorithmic thinking skills.

In particular, the ideas of Turkish scientists about the concepts of coding education in primary grades should first be reflected in human thinking. The coding training used in this study contributed to the development of basic algorithmic skills in pupils, such as "when faced with any problem, they can easily write an algorithm for that problem or perform an algorithmic procedure when performing any task." happy

In our country, the attention paid to elementary school textbooks and the impact of changes in them on the educational process is known to a significant extent. Topics in primary school textbooks are becoming more and more complex. As a result, the school assigns a more responsible task to primary school teachers.

KEYWORDS

Coding, concentration, calculation - thinking, formation of algorithmic thinking in the educational process.

INTRODUCTION

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Turkish scientists Yasemin Çakıcı, Soner Mehmet Özdemir have mentioned in their article that coding education serves to develop algorithmic thinking skills of elementary school pupils. In particular, the coding training used in this study contributes to the development of basic algorithmic skills in pupils, such as "when faced with any problem, they can easily write an algorithm for that problem or perform an algorithmic procedure when performing any task." added Algorithm is an activity that requires intelligence and understanding from a child. In this context, given that algorithmic thinking skills are one of the skills that an individual must have in order to be successful in their future education and professional life and to contribute to the development of the country, it is important to start with this skill. must be acquired at the school level. Many pupil-centered learning and teaching methods, techniques, and activities, as well as computerized, or rather non-computerized, coding activities and practices can be implemented both in the course curriculum and at the master's level. is one of the important options.

"It was conducted to determine the effect of computer-free coding education on the attention level, problem solving and algorithmic thinking skills of elementary school pupils"[1].

Providing algorithmic logic can also significantly contribute to the development of pupils' 21st century problem-solving skills. From this point of view, the relationship between algorithmic thinking and the ability to solve problems has been studied. In addition, programming and math classes are important for acquiring algorithmic thinking and problem-solving skills.

Programming concepts are important and similar to computational thinking skills. "Knowledge of computer concepts means knowing and defining concepts used in programming, such as ``variable,'' which is one of the computational skills. Application awareness refers to the understanding of problem-solving applications, such as loops, iterations, and conditionals, that are necessary in the programming process and add direction to the program. In addition, since computational thinking and the design of appropriate algorithms are necessary to solve the problem, this concept is closely related to each other" [2].

It is generally accepted that a child should learn reading, writing and arithmetic at an early age. Mental arithmetic provides a foundation for mathematical logic and problem solving. In the early years, children learn to add and subtract, memorize time tables, learn division, etc. Nothing in the classical approach to education has been overcome by new technology. The benefits of computational thinking are additive and do not interfere with accepted key aspects of a child's educational development. Computational thinking is an extension of problem solving and therefore can be introduced when word problems are introduced. Math word problems describe a situation and ask the pupil to formulate a mathematical solution. The solution actually comes from what you might call a mathematical model.

"We offer computational thinking at the elementary level in school. We agree with the existing literature that computational thinking is essential for the workforce in today's world and that it should be taught in school alongside other core areas such as reading, writing, and mathematics. To argue the importance of computational thinking, we provide several examples

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involving basic algebra where the use of spreadsheets goes beyond just problem solving" [3].

Before talking about the development of algorithmic thinking, it is necessary to clarify this concept and distinguish its components. If we talk about general thinking, it means the study of various scientific disciplines.

There are examples and methods of pupils' learning process. The formation and development of algorithmic thinking occurs in the process of solving problems. The algorithmic way of thinking is formed not only in science classes, but also in teaching mathematics.[4]

Human life is structured in such a way that throughout our life we have to solve many problems and tasks - everyday, educational, specialized, professional problems. Dividing the problem (task) into components - actions, determining their order, putting them in a sequence for execution. There is some connection with the concept of algorithm, which is defined as a finite sequence of actions or instructions that are understandable to the doer in science. It is during this period that the development of thinking, in particular algorithmic thinking style or algorithmic thinking, takes place.

CONCLUSION

Algorithmic thinking is important not only in technology tasks but in all science tasks. It is also reflected in our actions during our daily life. So we use some sort of sequence in everything we do. we agree with the existing literature that modern computational thinking is necessary and that it should be taught in school alongside other core areas such as reading, writing and mathematics.

Information is the main factor affecting the formation of human thinking and thinking ability. Therefore, the development of modern civilized society is characterized by the process of informatization.

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