

The Place Of Steam Education In The Korean Education System

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Abstract: This article scientifically analyzes the formation and development of STEAM (science, technology, engineering, arts, and mathematics) education in Korea. The article reveals the theoretical foundations of interdisciplinary integration on the basis of pedagogical and psychological approaches and substantiates its role in developing creativity. The role of STEAM education in the Korean education system, its effectiveness, and future prospects are discussed. The article also presents scholars' opinions and provides a list of references.

Keywords: STEAM education, interdisciplinary integration, pedagogical approaches, psychological approaches, creativity, Korean education system.

Introduction: The development of STEAM education in the Republic of Korea has been taking place rapidly in recent years. This process is aimed at providing students with modern knowledge and skills in order to increase the globalization and competitiveness of the country's education system. STEAM (science, technology, engineering, arts, and mathematics) education gives students the opportunity to integrate interdisciplinary knowledge, develop creative thinking skills, and apply innovative approaches in solving real-life problems. The renewal of educational strategies by the Korean government is of great importance in preparing students for the modern economy and social life. Through STEAM education, students acquire not only theoretical knowledge but also practical experience, which serves to increase their creativity, analytical thinking, and problem-solving abilities. Such an approach creates the necessary conditions for students to gain deep knowledge in areas that correspond to their interests and abilities. STEAM education helps students develop self-awareness, independent thinking, and the ability to actively participate in society. This approach plays an important role not only in renewing the education system, but also in the economic and social development of the country. The

development of STEAM education in Korea is becoming important not only in the field of education, but also in a broader social context.

Main Part

Theoretical Foundations of STEAM Education
Interdisciplinary Integration: interdisciplinary integration refers to establishing connections between different subjects and combining them in the educational process. This approach creates the opportunity to expand students' knowledge and apply it in practice. In STEAM (Science, Technology, Engineering, Arts, Mathematics) education, interdisciplinary integration is strengthened by the following theoretical foundations:

Constructivism: According to the constructivist approach, students construct their own knowledge independently. In this process, they connect new information with their previous knowledge and use their personal experiences [1]. In STEAM education, this approach helps students integrate knowledge obtained from different subjects and leads them to a deeper understanding.

Collaborative Learning: The process of collaborative learning ensures cooperation among students. By

working together, students have the opportunity to solve problems and develop new ideas [2]. This process develops collective thinking and creativity, and also helps strengthen social skills.

Goal-Oriented Learning: This approach develops a goal-oriented approach in students during the process of solving problems. Students use different subjects to achieve the goals they have set [3]. This approach plays an important role in forming students' self-management and independent thinking skills.

These theoretical foundations ensure the effective implementation of STEAM education and encourage students' activities aimed at integrating interdisciplinary knowledge. Through interdisciplinary integration, students acquire not only theoretical knowledge but also practical skills, which is of great importance in preparing them for their future professional activities.

The pedagogical approaches of STEAM education are based on the following main principles:

Experience-based learning: Students acquire knowledge through practical experiences. This approach allows students to apply theoretical knowledge in practice [4].

Problem solving: In STEAM education, the process of solving problems is of great importance. Students apply their knowledge by solving real-life problems [5].

Developing creativity: Creativity is one of the main goals of STEAM education. Students are encouraged to develop new ideas and find innovative solutions [6].

Psychological approaches play an important role in increasing students' motivation and developing their creative thinking abilities in STEAM education:

Intrinsic motivation: Intrinsic motivation arises from students' desire for self-development. Students increase intrinsic motivation by participating in interesting and useful activities [7].

Self-management: Students must have the ability to manage their own activities. This develops their independent thinking and decision-making skills [8].

Emotional intelligence: Emotional intelligence allows students to manage their emotions and communicate effectively with others. These skills increase cooperation and creativity in STEAM education [9].

STEAM education in Korea has been developing rapidly

in recent years. The main stages of this process are as follows:

1. **Educational policy:** The Korean government has developed strategies aimed at developing STEAM education. This includes updating educational standards and introducing new programs.

2. **Infrastructure:** The necessary infrastructure for STEAM education is being created in educational institutions. Laboratories, technological tools, and innovative schools are being established.

3. **Teacher training:** Special training programs on STEAM education have been developed for teachers. This helps improve their pedagogical skills.

4. **Projects and activities:** Educational institutions are conducting various projects and activities for students. This helps increase students' practical experiences.

STEAM education plays an important role in developing creativity. Students integrate the knowledge they have acquired from different subjects and develop new ideas. Their creative thinking abilities develop through the following aspects:

Innovative solutions: Students are encouraged to develop innovative solutions in solving real-life problems.

Developing new ideas: Through interdisciplinary integration, students have the opportunity to develop new ideas.

Creative processes: Students increase their creativity by participating in creative processes.

Discussion and Results. The development of STEAM education in Korea is being carried out in order to increase the globalization and competitiveness of the education system. This educational model gives students the opportunity to integrate the knowledge they have acquired from different subjects, develop creative thinking skills, and increase their ability to solve problems. The success of STEAM education depends on a number of factors. Attention should be paid to teachers' training, the availability of infrastructure, and the quality of educational programs. Students' motivation and participation are also of great importance. The formation and development of STEAM education in Korea are being carried out on the basis of pedagogical and psychological approaches. Through

interdisciplinary integration, students are gaining the opportunity to develop creative thinking skills. This educational model will help develop innovative solutions in the future and increase the country's competitiveness.

Conclusion

The theoretical foundations of STEAM education are of great importance in forming students' interdisciplinary integrated knowledge and developing their practical skills. Approaches such as constructivism, collaborative learning, and goal-oriented learning encourage active participation in the learning process and strengthen students' creativity, problem-solving, and teamwork skills. By giving students the opportunity to integrate knowledge acquired from different subjects, STEAM education helps them acquire not only theoretical knowledge but also practical experience. As a result, such an approach plays an important role in preparing students for their future professional activities and develops them in accordance with the requirements of modern society. Thus, STEAM education not only expands students' range of knowledge, but also serves to strengthen their personal and social skills.

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