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# Cultivating Digital Talents Using Realistic Educational Content in Korea: During the Pandemic and Amid Literacy Decline

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**Abstract.** Digital education and the use of 3D contents are needed to solve medical problems in the medical field. The importance of 3D education has emerged due to COVID-19, and human resources with multifaceted case analysis skills should be nurtured in Korea. In addition, 3D education can be introduced in Korean language education and Korean language education to improve the learning process. This is expected to help foreign learners and contribute to the branding of Korean industries.

**Keywords:** Digital education, 3D content, Multi-pronged Case Analysis Capabilities.

## 1 The Necessity of Setting Specific Paths of Digital Education Transformation

In South Korea, evolving societal identity and lifestyle changes with digital devices are naturally fostering a culture that values indicating differences and seeking digital convenience. These changes are focusing on the cultivation of digital talents [1]. However, the concept of "digital talent cultivation" extends beyond merely educating students with digital edutech. It indicates Korea's commitment to understanding and leading global trends, adopting a holistic approach to talent development that underscores creativity.

In these days, recent students tend to show a keen interest in individualized subjects and competencies, craving various feedback. Educators must acknowledge the disconnect between the realities of adults and the reality of current students and provide appropriate educational directions.

In this context, it is important to focus on nurturing creative medical talent' and 'realistic language education content talent.' Such a transformation promises to enhance highly-interactive classes with 3D stimuli than conventional 2D approaches. Aligned with these needs, the research question of this poster will be: How can the integration of digital and 3D educational technologies into medical and Korean language education in South Korea enhance the cultivation of creative talents and improve learning outcomes, in light of the demonstrated successes in addressing global health challenges and language acquisition barriers?

## 2 Literature Review

### 2.1 Creative Medical Talent

First, integrating digital education into medical training to foster creative medical talents is critical to address the production of underachieving doctors and to solve social issues in the medical field. The digitization of educational equipment and the use of domestically produced 3D contents are necessary for this purpose, so that students can naturally derive curiosity and inquiry skills. The importance of 3D education is also what the COVID-19 pandemic has to suggest for training medical talent. Jason McLaren (a research team led by a professor at the Department of Molecular Biology at the University of Texas in the United States) was the first in the world to implement the protein molecular structure of COVID-19 in 3D in February 2020, when COVID-19 was discovered [2]. Subsequently, a vaccine clinical trial began, followed by a 3D model that accurately embodied the internal structure of the virus in October, followed by the 3Dization of antibodies [3]. It is worth noting that this process

was all accomplished overseas and that all but the last case were successful in the United States. In particular, the tool used is a cryogenic electron microscope, an item that received the Nobel Prize in Chemistry in the United States in 2017, which immediately provides a 3D image of the object during filming. It can be seen that American talents, who quickly recognized the importance of the 3D realization function of objects, have actively used 3D when developing scientific tools, developing vaccines for solving health problems, and subsequent studies. Given these points, Korea also needs high-quality 3D education to foster talented people who have the capacity to analyze issues from multiple perspectives if unpredictable global medical problems arise in the future.

As one of the examples of Korean university education, there is a successful case in which anatomy students create their own 3D content on the subtemporal cavity, where it is difficult to directly observe blood vessels and nerves [4]. This shows the possibility that realistic classes may be possible even for students under high school.

### 2.2. Realistic Language Education Content Talent

Second, the value of 3D education is also critical in Korean language education. Language education, in particular, progresses naturally to develop required skills including(e.g., reading, writing, and speaking), However, the current Korean language curriculum does not cater to this natural progression, attempting to cover various areas simultaneously without prioritizing them. To address this issue, the curriculum should stop fragmenting grammar into separate components. Instead, grammar should be divided into individual subjects at the beginning of secondary education and taught through a consistent and cohesive approach. Given the challenges posed by the complexity of learning, it will be possible to encourage students in the lower grades of secondary school to successfully understand and learn using 3D content by constructing strategic textbooks, such as learning oral structure in three dimensions. 3D content should be used in Korean language education for foreigners. Through this, it is expected that it will provide a learning process that contains sufficient consideration for foreign learners and will be of great help in branding various industries in Korea.

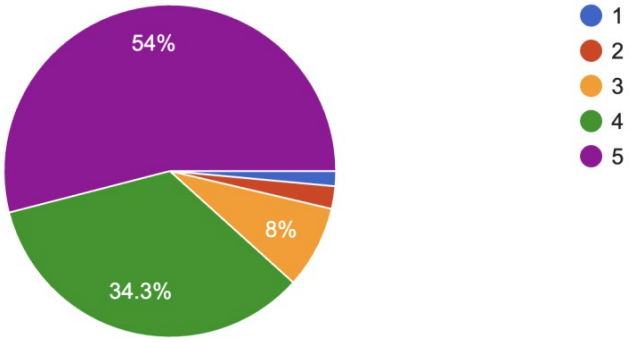


**Fig. 1.** The grade of recognition of the importance of Korean grammar answered by middle school students.

## 3 Conclusion

Education practices in Korean currently face a shortage of 3D educational content, resulting in a lack of delivering immersive learning experiences for students. To address this issue, educators who deeply understand the curriculum across subjects play a critical role. Moreover, a systematic support system through a partnership is essential to foster collaboration between companies and teachers. In addition, educators should be mindful of embracing new technologies and adopt a forward-thinking attitude. Specifically, it is crucial to pursue meaningful changes that reflect the desires of student learning experiences. In conclusion, creating an environment of collaborative communication among educators, technicians, and 3D content creators is vital for the effective implementation of immersive learning in education. If realistic content education is successful in medicine and language, where practicality is emphasized, the need and demand will increase in other subject areas as well. The need for realistic content education in language, which is knowledge that humans naturally acquire, and medicine, which is the most difficult to learn, delivers an important message to various disciplines in between.

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