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Rethinking Comprehensive Physical Education for Young Learners with COVID-19

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COVID-19 pandemic is causing drastic changes in the exiting educational environment. Korean government guidelines on the physical distance between people, banning indoor physical activities, and restricting even outdoor physical education in educational institutions promote physical inactivity among young learners. General subjects in schools have been replaced by virtual education, but physical education still exposes the following challenges: First of all, physical education teachers and students often experience a lack of systematic platforms in virtual physical education. It is difficult to change the contents of physical education for virtual learning even if they change the contents, the environment imposed on young students varies too much by an individual to carry out and learn the contents correctly. Secondly, physical education teachers are not familiar with legal issues of various educational content needed for virtual learning, and there is a great fear of legal punishment regarding infringement of copyright and intellectual property of educational contents. Lastly, for young students, effective communication with teachers is becoming more difficult compared to the traditional face-to-face physical education setting. The paradigm shift, which boldly breaks away from existing learning objectives and provides sufficient infrastructure to prevent learners from receiving inequality in physical education, and maintains healthy physical strength through easy content, will be the way to overcome the changing educational environment due to COVID-19 pandemic.

Key words: COVID-19, Physical Education, Physical Inactivity, Virtual Learning

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Introduction

In early 2020, the pandemic spread of the Novel Corona Virus (COVID-19) has brought about a variety of challenges and changes globally in all areas of society, economy, and culture, as well as significant changes in an educational environment. People around the world experienced panic, anxiety, and numerous concerns caused by these sudden challenges. Most countries restricted and suspended various aspects of human life including business, leisure, sport, cultural-artistic performances, and educational events altogether. Based on the report of UNESCO (2020), more than 190 countries and approximately 1.6 billion learners from all continents were interrupted by their regular educational opportunities due to the closure of schools and other scholastic places.

To alleviate the direct medical threat of the virus and prevent the students from psychological depression called 'corona blue', educational institutions have launched new momentum to educate students through various means and forms based on both human and physical resources available in the context. In this context, numerous educational institutions have organized various e-learning stages, even if they have face-to-face meetings sometimes, so that the academic schedule continues to the final stage, making students stay at home (Anifowoshe et al, 2020). Technology-based education, particularly virtual learning, has become the most suitable alternatives to keeping scholastic activities functional in the world during the pandemic.

According to the Ministry of Education's policy, 8.4 million students from all public and private schools nationwide in the Republic of Korea (henceforth "Korea") were unable to start a new semester in March 2020. COVID pandemic made it difficult for schools to conduct regular pedagogical approaches in classrooms, and virtual education based on an online educational system was considered as an appropriate alternative instead of traditional face-to-face modules and implemented nationwide in Korea. The Ministry of Education and the local offices of education released countless up-to-date safety guidelines, rules, and response manuals for the prevention of loss of academic activities. At the same time, schools had a critical period to collect parents' opinions, prepare countermeasures, and operate the curriculum in consideration of the changing situation under COVID pandemic. Among many alternatives, the realistic application was the extension of learning through a virtual environment. The anxiety over COVID-19 caused schools to shut down and students to rely on a substitute educational system called virtual learning.

Virtual learning is defined as "Distance Learning conducted in a virtual learning environment with electric study content designed for self-paced or live web-conferencing online teaching and tutoring" (VEDAMO, 2020). Virtual education has steadily grown into a new paradigm for education as it has become an effective way to overcome the spatial and time limitations of education in the 1990s based on the development of computer technology and web-based information and communication technology

(ICT) (Lee & Kim, 2020; Stanchevici & Siczek, 2019). In this context, recent studies have shown that virtual education has continued to grow in the United States with more than 30% of U.S higher education taking long-distance modules in 2016, and more than 3 million taking long-distance and non-distance courses at the same time (Lee & Kim, 2020; Seaman et al, 2018). In Canada, more than 18 percent of students replied they took more than one course in higher education with virtual learning (Donovan et al, 2019; Lee & Kim, 2020). Effective virtual learning and teaching with the interaction between teachers and learners can lead to a more positive educational foundation. This development in virtual education is reported to be increasing the enrollment rate of foreign students in both public and private universities and colleges in the United States and Canada in line with the internationalization strategy in higher education in North America (Lee & Kim, 2020; Statistics Canada, 2018).

Similarly, in Korea, there are 21 distance education and virtual education-oriented universities, including Korea National Open University, and many universities and colleges also operate some virtual courses (KERIS, 2020). Higher education has been developing even though there is not enough experience in virtual classes. However, in the case of elementary, middle, and high schools, which were entirely dependent on face-to-face classes, the coronavirus pandemic led significant waves to the entire education system in Korea. Schools and families have been urgently establishing a virtual education environment and making efforts for young learners of the age group who need childcare. Each family had a diverse virtual learning environment, such as computers, tablets, smartphones, and more difficulties in teaching online in the case of multiple children. The more difficult reality was that there was no policy for families to refuse virtual education, even though Korea is considered a technologically advanced country in the world.

In particular, one of the difficult subjects of these virtual education programs is a physical education module. Physical movement is a significant part of students who are in critical development stages as humans. Unlike other subjects, physical education requires a wider physical education environment such as gyms and playgrounds, and the learning processes and performance can vary depending on the characteristics of the educational setting. The difficulties of learning in a virtual education environment can only be taken more seriously in physical education where practical modules are required (Choi, 2020; Hwang, 2020; Oh, 2020; Yang, Cho, & Yoo, 2020).

The learning environment can be considered as an important influential factor that can significantly affect learners' cognitive learning outcomes or behavior changes (Park & Lee, 2016). Other academic subjects may suitable and sufficient to achieve the educational purposes of the subject through virtual education, but in the case of physical education, it would be difficult to clear up doubts that physical body movement, athletic experience and development, spatial perception, situational coping response,

and cooperative exercise skills can be achieved via virtual learning environment, even many studies have proved the positive influence of physical education to learners. For example, the ministry of education of Singapore understands physical education as the pedagogical foundation. Physical education in Singapore emphasizes five key values that humans should cultivate through physical education. The Ministry of Education in Korea also aims for the ultimate education purpose of developing and cultivating their own lives by improving their athletic skills, developing necessary skills in life, and exercising desirable characteristics. In other words, these core values define the goal of physical activity as the goal of physical education to develop desirable social knowledge, function, attitude, and interaction capability among others in pursuing a healthy life. Particularly, school sports in Korea are taught by teachers in physical education with five achievement criteria; health, challenge, competition, expression, and safety (Xin, Lee, & Oh, 2019).

Even though the World Health Organization recommends guidelines for physical activity for young and adolescents as shown in Table 1, COVID-19 pandemics severely restrict students' physical activities, resulting in indoor isolation and adverse effects on obesity and psychological depression (Burtscher, Burtscher, & Millet, 2020).

Table 1. *Evidence-Based Physical Activity Recommendations for 5-17 to Improve Health*

Children and youth aged 5-17 should accumulate at least 60 minutes of moderate- to vigorous intensity physical activity daily
Amounts of physical activity greater than 60 minutes provide additional health benefits
Most of the daily physical activity should be aerobic. Vigorous-intensity activities should be incorporated, including those that strengthen muscle and bone, at least 3 times per week.

However, at every educational institution facing the first time in virtual learning, the leaders are experiencing various complications in how to guide physical activities throughout the online circumstance. This is because the situation of remote education classes is the first and unfamiliar experience for teachers as well as educating consumers and the governing body of Education. It was a critical burden for teachers at a time when virtual education settings and class models, including prior experience, were not developed. Based on the current situation in which face-to-face classes are not possible, nevertheless, the need for physical education continues to draw attention to strengthening student's immunity and vital movements. Therefore, it is urgent to find ways to maximize the efficiency of physical education classes in both virtual learning environments and partially allowed face-to-face classes.

For this study, related news articles were provided from January 29, 2020, to February 28, 2021,

utilizing 11 major brand newspapers and eight economic newspapers via Bigkinds, a news analysis system of the Korea Press Foundation. A total of 188 articles were found using keywords such as physical education, sport, virtual learning, and Corona Virus.

Starting from January 29, 2020, when the first confirmed case of COVID-19 was released in Korea, we checked and analyzed meaningful keywords such as physical education, sport, physical activity, and virtual learning mentioned in the media. As we can see in Figure 1, several related articles appeared, especially in March, April, August, and September, when the new semester began.

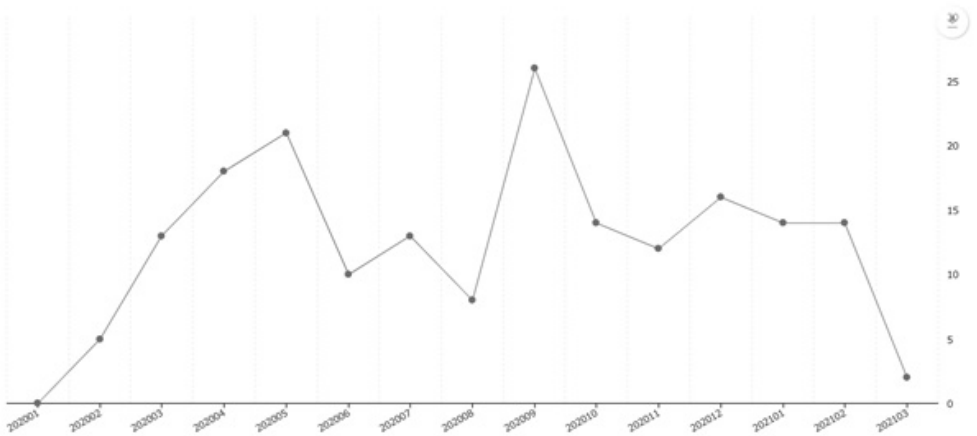

Figure 1. *Number of news articles related to physical education, sport, physical activity and virtual learning*

Figure 2. *Keywords from 188 news articles related to physical education, sport, physical activity and virtual learning*

As shown in Figure 2, keywords such as virtual learning, social distance, children, the Ministry of Education, parents, and long-term education are repeated in articles related to keywords such as physical education and physical activities. Besides, keywords such as arts, sports, non-face-to-face, underprivileged people, and educational gaps are also shown. It shows that there are groups whose educational equality is not maintained and marginalized in education through virtual learning. This also has the risk of leading to situations that could ultimately lead to educational gaps within the same learning group.

Challenges by Virtual Learning with Young Learners

Lack of experience and systematic platforms in virtual physical education

With the introduction of the first-ever virtual learning in almost every elementary school class, various problems arose in terms of class preparation and design, technical preparation and supports, class operation, and the quality of virtual education situations and learning efforts. Despite considerable investment in the virtual education system in Korea, improvement of delivery and education quality of physical education for young learners is still problematic. Since most teachers conducted virtual learning for the first time, they realized that there was a lack of time for individual teachers as well as a lack of time to prepare their teaching materials and develop teaching techniques for physical education modules. Teachers had to learn technical systems such as remote-based learning platforms related to virtual learning as soon as possible, and they had to figure out what the problems were and take expected countermeasures against each problem. In particular, there was serious difficulty in virtual learning for young learners because immediate feedback on classes was challenging and educational efforts could not be confirmed due to the absence of communication and interaction activities between teachers and students. As a mechanical defect, the number of platform use increased in a short period in the early stages of virtual learning, causing serious difficulties even with access and log-in issue. However, as the expectation of real-time interactive classes increases over time, learners are demanding an environment where virtual learning classes can quickly and easily receive abundant educational contents that are no different from face-to-face classes.

In the fall semester in 2020, the number of daily visitors to the e-learning center got over 1,600,000 students, the cumulative number of classes opened to approximately 310,000 students, the overall number of content uploads reached more than 77,000,000, and the number of content views and downloads reached 130 million a day (as of 2020.09.18) (KERIS, 2020). As virtual learning modules are likely to expand further in near future, it is necessary to develop a standardized virtual learning

platform at the Ministry of Education. Besides, a standardized learning environment should be established that fully reflects the needs of students using it, and customized teaching methods for learners in special situations should be supported. Moreover, interest in the real-time two-way class system is increasing socially, which seriously leads to discussions on cooperation between the Ministry of Education and private education platforms. This collaboration would be an essential effort to accelerate the deployment of an easy-to-use virtual learning environment.

Lack of policy for copyright and sharing of class content on virtual learning

Copyright is one of the serious problems faced by most teachers preparing for virtual learning classes. There was no critical problem when teachers had face-to-face classes with textbooks and materials distributed by the Ministry of Education, but it was difficult to clearly define the limitations and legal aspects of using photos, video contents, fonts, and other technical matters including video editing programs on the virtual learning environments. Copyright is an exclusive right recognized by the Copyright Act to the creator and other right holders (Korea Copyright Commission, 2015) only for a certain time to promote the use of works, and prescribes certain reasons for copyright restriction for fair use.

Copyright is a part of intellectual property rights and is distinguished regarding terms. Intellectual property is defined as knowledge, information, technology, expression of ideas or emotions, representation of business or objects, variety of living things, genetic resources, and other intangible ones that are created or discovered by human creative activities or experiences and where property value can be realized(Korean Law Information Center, 2020). To avoid intellectual property issues, teachers cannot avoid the hassle of much effort or expense in developing new educational materials due to the expansion of virtual interactive learning. Even if it was to make data for educational purposes, there was a restriction that the photos, videos, phrases, and other information contained in the material were also subject to the copyright holder's permission or those already licensed.

In the meantime, new teaching methods should put more attention on the learners' physical activity level in the virtual learning environment. Virtual learning in physical education cannot be guaranteed success without the re-processing of exiting education content. In re-processing such education contents, educators face difficulties in approaching the infringement of intellectual property rights. Additional education on current teachers and legislation will be necessary to have sufficient digital literacy for the re-processing of educational materials, but in reality, the Ministry of Education's efforts alone do not make it easy to change the educational environment from the infringement of intellectual property in virtual education.

Inability to adapt to the new educational environment and communicate effectively

Teachers play a significant role in transforming the teacher-centered approaches into learner-friendly learning based on education through ICT (Duraku & Hoxha, 2020). Even if education and learning through virtual environments is not ICT-friendly, it should try to pay attention to the needs and expectations of learners rather than delivering topics only from the teacher's perspective.

Providing accurate and immediate feedback to students, as often as possible, is effective in learning strategies (Cole & Chan, 1994). However, teachers complained of difficulties in immediate feedback in the virtual learning setting. Even though teachers understand that interactions in learning and immediate feedback are essential elements of learning. This is the critical problem with virtual learning. To solve this problem, the proportion of virtual learning classes should be expanded to real-time interactive classes, enabling interaction and immediate feedback.

According to a parent survey on virtual learning environment, most of the opinions were that two-way interaction classes would be expanded than one-way online education tools in Korea such as Education Broadcasting System (EBS) contents, SamTube, and other educational Internet sites. This is because both parents and students have many advantages of real-time interactive virtual learning classes rather than traditional one-way online modules. Not only classes but also announcements and sharing of learning plans between teachers and parents were not easy.

However, it is difficult for both teachers and young learners such as elementary or middle school students in the virtual physical education learning environment to communicate effectively. With virtual physical education learning, young students have more freedom and feel lazy due to low self-motivation and a lack of goal-oriented learning attitude. Furthermore, it is very difficult to interact virtually with young learners who lack time management skills, technological preparation, or utilization of space.

Discussion

Physical Education is considered the most important educational subject that distinguishes it from other subjects. It is a curriculum that pioneers one's life and cultivates one's qualities by developing the skills necessary for life along with physical strength and athletic ability and exercising desirable personality. These key points define that the goal of physical education is to cultivate the knowledge, function, attitude, and other personal characteristics of socially desirable humans in a healthy living environment. Although physical education has many positive effects, it is also a somewhat under valuated subject in the educational field of Korea. In this context, physical education teachers in elementary and middle schools in Korea experienced many challenges to deliver high-quality physical education.

They struggled with educational settings such as lack of facilities, poor equipment, and an

inconsistent and small budget (Chung, 2021). Under these circumstances, physical education in Korea is facing other challenges. COVID-19 pandemic, as a public health emergency of international concern labeled by the World Health Organization (WHO), is causing drastic changes in the exiting educational environment. Korean government guidelines on the physical distance between people, banning indoor physical activities, and restricting even outdoor physical education in educational institutions promote physical inactivity among young learners.

Fortunately, general subjects in schools have been replaced by virtual education, but physical education still exposes several challenges. First of all, physical education teachers and students often experience a lack of systematic platforms in virtual physical education. It is difficult to change the contents of physical education for virtual learning even if they change the contents, the environment imposed on young students varies too much by an individual to carry out and learn the contents correctly. Secondly, physical education teachers are not familiar with legal issues of various educational content needed for virtual learning, and there is a great fear of legal punishment regarding infringement of copyright and intellectual property of educational contents. Last but not least, for young students, effective communication with teachers is becoming more difficult compared to the traditional face-to-face physical education setting. It is ambiguous to give immediate feedback on the implementation of actual demonstrations or wrong performance, and there are many restrictions on the exercise and physical activity contents that can be trained. The Ministry of Education in Korea and local educational institutes should present institutional cooperation and various directions so that more realistic physical education can take place even if it is virtual learning. The paradigm shift, which boldly breaks away from existing learning objectives and provides sufficient infrastructure to prevent learners from receiving inequality in physical education, and maintains healthy physical strength through easy content, will be the way to overcome the changing educational environment due to COVID pandemic.

References

Anifowoshe, O., Aborode, A. T., Ayodele, T. I., Iretiayo, A. R., & David. O. O. (2020). Impact of COVID-19 on education in sub-saharan Africa. *Preprints, 2020070027*

Burtscher, J., Burtscher, M., & Millet, G. P. (2020). (Indoor) isolation, stress, and physical inactivity: Vicious circles accelerated by COVID-19? *Scandinavian journal of medicine & science in sports,30*(8), 15441545.

Choi, Y. A. (2020). *A study on changes and measure of outdoor PE lessons due to fine dusts* [Unpublished Thesis], Inha University.

Chung, H. J. (2021). An archaeological discourse analysis of physical education as challenging in South Korea primary schools. *Asia Pacific Journal of Education.*

Cole, P. G., & Chan, K. S. (1994). *Teaching principles and practice.* New York: Prentice Hall.

Donovan, T., Bates, T., Seaman, J., Mayer, D., Martel, E., Paul, R., Desbiens, B., Forssman, V., & Poulin, R. (2019). *Tracking online and distance education in Canadian universities and college 2018.* Canadian Digital Learning Research Association.

Duraku, Z. H., & Hoxha, L. (2020). *The impact of COVID-19 on education and on the well-being of teachers, parents, and students: Challenges related to remote (online) learning and opportunities for advancing the quality of education.* https://www.researchgate.net/publication/341297812

Hwang, G. (2020). *A study on the difficulties and improvement plan of virtual physical education class in elementary school* [Unpublished Thesis], Inha University.

Korea Education and Research Innovation Service (KERIS) (2020). 2020 White Paper on ICT in Education in Korea.

Korean Copyright Commission (2015). Introduction of the Korean Copyright System.

Korean Law Information Center (2020). *Enforcement Decree of the Framework Act on Intellectual Property.* https://www.law.go.kr/LSW/eng/engLsSc.do?menuId=2&section=lawNm&query=intellectual+property&x=0&y=0#liBgcolor0

Lee, D. J.,& Kim, M. (2020). University students' perceptions on the practice of online learning in the COVID-19 situation and future directions. *Multimedia Assisted Language Learning*, 23(3), 359-377.

Oh, J. S. (2020). *The difficulties and improvement of elementary English teacher in Distance Education: A qualitative analysis through in-depth interview* [Unpublished Thesis], Gyeongin National University of Education.

Park, T., Lee, J. (2016). The effect of class environment of P.E. class on high school students' flow and education satisfaction. *The Korean Journal of Sport, 14*(3), 339-348.

Seaman, J. E., Allen, I. E., & Seaman, J. (2018). *Grade increase: Tracking distance education in the United States*. Babson Survey Research Group.

Stanchevici, D., & Siczek, M. (2019). Performance, interaction, and satisfaction of graduate EAP students in a face-to-face and an online class: A comparative analysis. *TESL Canada Journal, 36*(3), 132-153.

Statistics Canada (2018). *Canadian post-secondary enrollments and graduates*, 2106/2017.

UNESCO(2020). *Education during COVID-19 and beyond*. The United Nations Educational, Scientific and Cultural Organization. Paris, France.

VEDAMO(2020). *What is virtual learning*? https://www.vedamo.com/knowledge/what-is-virtual-learning/

Xin, X., Lee, K., & Oh, S. (2019). A comparative analysis on the new revised physical education curriculum of high school in Korea and China. Korean Journal of Sport Science, 31(4), 540-554.

Yang D. S., Cho, G. S., & Yoo, E. H. (2020). The reality and improvement plan of elementary school physical education class to deal with corona-19. *The Korean Society of Elementary Physical Education, 26*(2), 131-144.

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