The Value, Obstacle and Strategy of Digital Empowerment Physical Education in Primary School

Wei Yuan¹, Shamsulariffin Samsudin², Borhannudin Abdullah³, Noor Hamzani Farizan⁴, Muhammad Zarif Hassan⁵, Ji Cheng⁶

Abstract

With the title of "The Value, obstacle and Strategy of physical education teaching in primary school with digital empowerment", this paper discusses the value, obstacle and optimization strategy from three angles. Through the research, it is found that digital technology can bring great value in primary school physical education, including the advantages of improving teaching effect, enhancing student participation, personalized learning and all-round development. However, digital physical education also faces some obstacles, such as the problem of capital investment, the lack of teachers' digital literacy and professional ability, and the unequal investment in educational resources. In order to optimize the digital effect of primary school physical education, six optimization strategies are proposed: increasing funding investment and sponsorship, enhancing teachers' digital literacy and professional ability, optimizing the investment and distribution of educational resources, promoting students' and parents' participation and recognition, formulating privacy and security policies, and establishing a digital primary school physical education evaluation system in the digital era. Through the implementation of these strategies, the digital development of primary school physical education can be further promoted and the teaching quality and students' comprehensive literacy can be improved.

Keywords: Primary Physical Education; Physical Education Teaching; School Physical Education; Digital Education; Information-Based Education.

Introduction

With the rapid development of digital technology, its application in the field of education has gradually received widespread attention. The concept of digital enabling education has gradually emerged, injecting new vitality and possibilities into traditional teaching. Physical education, as an important part of school education, also benefits from the development of digital technology. Digital empowerment of physical education in primary schools can not only provide students with broader learning opportunities and resources, but also promote the innovation and improvement of physical education.

However, digitally empowered physical education in primary schools also faces some challenges and obstacles. First, the traditional physical education teaching model needs to be adjusted and innovated in the context of digitalization to better adapt to students' needs and learning styles. Secondly, the use of digital technology requires teachers to have the corresponding technical ability and educational concept, but there are generally differences in the digital literacy of teachers at present. In addition, digital empowerment may also raise some educational ethical and safety issues, which need to be handled carefully.

This paper aims to explore the value of digital empowerment in physical education teaching in primary schools, the obstacles faced and the coping strategies. Through the review of relevant literature and the analysis of investigation and research, we will explore the significance and influence of digital empowerment on primary physical education, analyze the teaching obstacles in the digital background, and put forward corresponding strategies and suggestions to promote the effective development of primary physical education.

¹ Faculty of Educational Studies, Universiti Putra Malaysia, 43400 Serdang, Selangor, Malaysia.

² Faculty of Educational Studies, Universiti Putra Malaysia, 43400 Serdang, Selangor, Malaysia. (corresponding Author)

³ Faculty of Educational Studies, Universiti Putra Malaysia, 43400 Serdang, Selangor, Malaysia.

⁴ Defense Fitness Academy, National Defense University of Malaysia, 57000 sungai besi camp, kuala lumpur.

⁵ Faculty of Educational Studies, Universiti Putra Malaysia, 43400 Serdang, Selangor, Malaysia.

⁶ School of Physical Education Science, Qufu Normal University, Qufu, Shandong, China.

Through the research of this paper, we hope to provide certain reference and guidance for the digital transformation of primary school physical education teaching, and provide certain ideas and references for education decision-makers, educators and the development of educational technology. At the same time, we also hope to arouse more people's attention to digital enabling education, and further promote the application and innovation of digital technology in physical education teaching.

Research background and purpose

Research Background

At present, the society is in the era of digital transformation, and the application of digital means in various fields continues to deepen, including the field of education. In the context of the 21st century information age, we increasingly find that the field of education must adapt to this trend and integrate and use digital tools to cope with the ever-changing social development patterns. Especially in the special field of primary school physical education, the importance and value of the application of digital tools is more prominent. Due to the universality and effectiveness of digitalization, more and more relevant studies have begun to involve all levels of education systems and fields, however, there are relatively few specific discussions on how to achieve digital transformation in primary school physical education teaching. The primary school stage is an important stage of individual physiological and psychological development, and the importance of physical education in this stage is self-evident. Therefore, digital empowerment of primary school physical education is undoubtedly an important issue that this field is facing. In primary school physical education, how to effectively integrate and use digital means to improve teaching effect and quality has not yet formed a mature program. In order to better inject new vitality into primary school physical education, it is particularly important to evaluate the value, difficulties and possible solutions brought by digitalization. This is the reason why we conducted this study. On the one hand, we hope to open up more research paths and opportunities through this study; On the other hand, we also hope to provide practical references and guidelines for physical education in primary schools, so as to improve the physical education learning experience and effect of primary school students. To realize this goal and transform it into practical teaching application, we need to fully understand and efficiently use digital tools, and also need to consider how to ensure its practical utility and adaptability in teaching.

Research Objectives

The research purpose of this paper is to explore the application of digital technology in physical education teaching in primary schools, reveal its value for students to learn physical education knowledge and skills, and analyze the current obstacles and problems faced. Through this research, we hope to break through the research gap in the field of primary school physical education and open up a new research path to cope with the new challenges brought by the progress of social technology. This can not only highlight the possible value of digitalization in primary physical education, but also help us to identify the obstacles that may be encountered in the implementation process, and put forward corresponding strategies and suggestions to solve these obstacles and promote the development of digitally empowered primary physical education.

We hope that this research results can provide decision-makers, educators and researchers with valuable information and guidance on digital empowered primary physical education, provide valuable references for actual primary physical education, and help them better understand and grasp the actual operation path and specific context of digital empowered primary physical education. By proposing and studying the possibilities of digitally empowered primary physical education teaching, we can deepen our understanding of modern teaching methods, especially how they can be combined with physical education teaching, so as to improve the efficiency and effect of physical education learning for primary school students and make positive contributions to their overall development. In conclusion, through our research, we expect to vigorously promote the modernization process of physical education in primary schools, promote the understanding and practice of digital empowered physical education in primary schools, and have a farreaching impact on the reform of primary physical education.

The Application Value of Digital Education Technology in Primary School Physical Education Teaching

Improve the participation and enthusiasm of primary school students

In the new technological innovation, "the application value of digital education technology in primary school physical education" has become more and more significant. Through the use of digital technology, it can effectively improve the participation and enthusiasm of primary school students in physical education curriculum, so that more primary school students have a more profound understanding of and love for physical education. Digital technology provides a vivid and intuitive teaching method for primary school physical education. The traditional way of physical education teaching is often explained by teachers in front of the stage and imitated by pupils below. This way is easy to make students feel boring and difficult to form a lasting interest in learning. The digital education technology, such as software simulation, multimedia animation, virtual reality, etc., can show sports in a more intuitive and vivid way, such as the strategy of football match and the movement skills of swimming, so that primary school students can learn independently in a relaxed and happy environment instead of passively accepting knowledge, which greatly improves their participation and enthusiasm in sports teaching.

Digital technology can also provide valuable feedback, which is very important to stimulate primary school students' enthusiasm for learning. Real-time monitoring and feedback can help primary school students better understand and improve themselves. For example, through digital devices, primary school students can learn their running speed, basketball shooting accuracy, etc., so as to work towards their own small goals. This sense of progress and success will form positive feedback in the minds of students, stimulate their internal motivation, and push them to participate in physical education more actively and proactively.

Digital technology offers a personalised approach to learning. Through digital technology, primary school students can choose learning content according to their own interests and needs, instead of passively accepting a fixed curriculum. For example, virtual reality technology allows students who like soccer to practice playing soccer at home, and primary school students who like dancing can even learn dance moves at home. Personalized learning methods can empower students to learn independently, so that they can enjoy the fun of sports while improving the effect and efficiency of learning.

Digital technology provides a new standard and method for the evaluation of PE teaching quality. Through scientific data analysis, teachers can deeply understand the performance of primary school students in sports activities, and formulate teaching plans that are more in line with the actual situation of students. At the same time, through data feedback, parents can also understand their children's learning progress. This kind of transparent and fair evaluation method has played a positive role in further stimulating students' enthusiasm for sports learning and forming a healthy learning atmosphere.

Can strengthen personalized learning

In the current era, digital educational technology has shown a significant impact on primary physical education teaching. Among them, digital technology plays a particularly significant role in strengthening the personalized learning of primary school students, providing customized education programs for each child's individual needs, so that they can better participate in and improve in the physical education curriculum.

Digital technology provides a wealth of resources and tools that make individualized learning possible. In the past, due to the equipment, venue, time and other factors, students can only carry out unified and large-scale sports training. Now, with the help of digital technology, teachers can provide training materials in various fields, such as ball sports, track and field sports, dance sports, etc. Students can choose the direction they want to develop according to their interests and preferences. This kind of self-choice and self-driven learning method has been proven to be effective in improving learning effectiveness and motivation.

Digital technology enables comprehensive individual tracking and evaluation, providing scientific analysis and feedback for personalized learning. It is often difficult to evaluate a student's performance in physical

education teaching, especially in large-scale courses, where it is difficult for teachers to give accurate feedback on the performance of each student. However, the introduction of digital technology, such as motion sensors and health trackers, makes all this possible. Every training and every step of students can be accurately recorded and feedbacks. These data can not only help teachers improve teaching accurately, but also help students better understand their own behaviors and improve their ability to self-adjust.

Digital technology enables a personalized pace of learning. Each student's physique, ability and pace are different, and individual students may need more time to understand and acquire a new skill, which is often not met by the traditional group teaching mode. With the help of digital technologies, such as online learning platforms, students can self-adjust the pace and time of learning, making learning from teachercentered to student-centered, which is very much in line with the concept of "teaching according to students' aptitude".

Digital technology plays a decisive role in strengthening the personalized learning of primary school students. It provides a variety of learning resources to meet students' individual interests, comprehensive and detailed analysis and feedback, so that each student can learn at the best pace for their own. At the same time, constructive online communication environment also greatly promotes students' learning motivation. The educational innovation set off by the new technology is giving the primary school physical education with a new concept and method, which provides strong support for us to cultivate healthy, lively and independent thinking primary school students.

Improve the independent learning ability of primary school students

In today's education field, digital education technology has become an important means to promote teaching effect and improve learning quality, especially in primary school physical education, digital technology has effectively improved the independent learning ability of primary school students through a variety of ways. Whether it is the demonstration of sports skills or the learning of health knowledge, a large number of resources can be found on the Internet. This rich and diverse learning content allows students to have a wider range of choices. They can carry out in-depth learning according to their interests and needs, and decide the pace and time of learning by themselves, so as to exercise their independent learning ability.

The application of digital technology enables students to study in a more planned and orderly manner. Fixed curriculum Settings and intelligent study reminders can help students plan their study time independently and cleverly make use of fragmented time for effective study. At the same time, through the learning data tracking and analysis of various digital tools, students can clearly understand their own learning status, find their own shortcomings, timely and targeted improvement and remediation, so that independent learning ability has been comprehensively trained.

Digital education technology has also greatly improved students' self-supervision awareness. For example, with the use of exercise trackers, students can clearly see their athletic performance, understand their health status, and enhance their ability to self-evaluate and self-regulate. This ability to independently adjust learning strategies and behaviors after receiving feedback is an important part of self-regulated learning.

Digital technology has greatly improved students' learning efficiency. Using information technology, students can obtain information more easily and quickly, communicate with classmates and teachers, and learn in a more efficient way. In this process, students not only learn knowledge, but also learn how to obtain and use information efficiently, which is of great help to their future study and even life.

To sum up, digital education technology has effectively improved the independent learning ability of primary school students in terms of providing rich learning resources, planning learning process, improving learning efficiency and strengthening learning motivation. With its unique advantages, it injects new vitality into the modern primary school physical education, and also injects more possibilities for the growth of students. With the continuous progress and development of education technology, the application of digital education technology in primary school physical education teaching will be more and more in-depth, and the improvement of education effect will be more significant.

Journal of Ecohumanism
March 2024
Volume: 3, No: 7, pp. 2752 – 2768
ISSN: 2752-6798 (Print) | ISSN 2752-6801 (Online)
https://ecohumanism.co.uk/joe/ecohumanism

DOI: https://doi.org/10.62754/joe.v3i7.4415

The ability of real-time feedback and evaluation

In today's increasingly digitalized social environment, digital educational technology has become the focus of active exploration by educators. In fact, digital technology has greatly improved the teachers, parents, students and schools in the real time feedback and evaluation ability of physical education to a new level.

From the aspect of teachers, digital technology provides a large number of information tools, so that teachers can track and record each student's physical education learning data in real time, such as attendance, performance progress, etc. For example, an App called "iDoMove" shares students' sports data such as step count, heart rate and calorie consumption to teachers in real time, enabling teachers to provide accurate and personalized feedback and guidance according to each student's specific situation, thereby enriching teaching content and improving teaching effect.

For parents, the development of the Internet and mobile terminals enables them to check their children's learning anytime and anywhere. Through various Internet education platforms, parents can intuitively understand their children's physical health and learning progress, understand teachers' teaching methods and plans, and participate in their children's learning process in a timely manner, so as to better guide their children's learning and make home-school cooperation more convenient and effective.

From the students' point of view, digital technology also brings them a new learning experience and improves their learning ability. For example, through digital sports equipment and software, students can obtain real-time exercise feedback, such as exercise time, intensity, energy consumption, etc., which is very important for them to understand their own sports performance and understand their health status. In addition, students can clearly know their learning goals through online tests and self-assessment, and carry out effective self-improvement under the guidance of teachers.

Finally, schools can also monitor and evaluate teaching quality in real time through digital technology. For example, through the big data analysis of the sports data of the whole school, the school can obtain all kinds of valuable information, such as the sports habits and sports activities of the students, so as to formulate a more scientific and effective physical education teaching plan. At the same time, digital technology can also provide a variety of teaching resources, such as online teaching videos, health education courses, etc., to help schools improve teaching quality and meet the learning needs of different students.

Innovative teaching methods and resource sharing

In the modern society with the rapid development of information technology, digital technology is particularly important. In particular, digital technology has shown great potential for innovating physical education teaching methods and realizing the sharing, communication and transmission of physical education resources. Through digital technology, teachers can innovate physical education teaching methods, make the teaching methods more vivid and vivid, and combine teaching with fun. For example, with the progress of modern science and technology, virtual reality (VR) and augmented reality (AR) are becoming increasingly mature. With the help of these new generation technologies, teachers can express some abstract and incomprehensible sports knowledge in an innovative and vivid way, helping students to better understand and master in the process of participation and experience. In addition, digital technology can also help teachers realize personalized teaching. Through data analysis, teachers can carry out targeted teaching according to each student's movement situation, so that each student can enjoy their own personalized teaching.

At the level of teaching resources, digital technology makes the sharing, communication and transmission of physical education teaching resources more convenient and fast. For example, physical education courses, teaching videos, teaching plans, etc. can be uploaded to the network, so that teachers can share them not only within the school, but also across schools and regions. This can not only save resources, but also learn from other excellent physical education teaching models and experiences, so that their teaching ability can be improved. In addition, schools can regularly organize online teaching exchange meetings through online platforms to invite excellent PE teachers from all over the world to share their experiences,

which can improve the teaching level of the entire education system. This kind of sharing can also make it easier for students to get information, such as training methods of some sports, health knowledge, etc., instead of being limited to what they learn in class. In this way, students can broaden their knowledge and improve their self-learning ability. At the same time, the network platform also provides a platform for students to communicate and share, where they can judge and share their learning experience, forming a good interactive atmosphere.

The application of digital technology in primary school physical education sharpens the teaching method and realizes the personalized teaching; At the same time, it also promotes the sharing, communication and transmission of physical education teaching resources, promotes the interaction and cooperation between teachers and teachers, students and students, and even schools and schools, and changes the traditional teaching mode. However, digital education technology is also faced with teachers, curriculum Settings, hardware facilities and other problems, therefore, we need to continue to study and explore, so that it can play a greater role in primary school physical education.

Cultivate students' information technology literacy

"Information technology literacy" refers to people's ability to solve problems, obtain and evaluate information based on the flexible use of information resources in the information society. It includes the basic operational skills of information technology, including the use of computers and Internet tools to search, acquire, store, process and transmit information, as well as the ability to think critically and make decisions about how to distinguish valuable, useful and reliable information from the vast amount of information.

Cultivating students' IT literacy in primary school is conducive to their development of modern learning abilities, such as the foundation of independent learning and lifelong learning, which has been developed in primary school. The information technology literacy of primary school students not only refers to mastering the basic information technology operation skills, but also a comprehensive embodiment of information consciousness, information ability and information morality. It requires primary school students to adapt to the development of the information society, use information technology to study, live and play, understand and evaluate information, and finally form a comprehensive ability to effectively use information and technology. In the information society, information technology literacy has become a necessary quality for primary school students.

In the primary school physical education, the application of digital technology has greatly enriched the teaching means, improved the teaching effect, and also provided excellent opportunities for cultivating the information technology literacy of primary school students. First of all, digital technology can break the traditional face-to-face teaching mode, provide a rich interactive teaching platform, introduce pictures, video, audio and other multimedia information resources in the teaching process, enhance students' interest in learning, and enable students to improve information technology operation skills in the process of operating computers and using teaching software. With the help of digital technology, students can complete the learning of physical education theory knowledge and exercises online, and improve their ability to obtain and process information independently. For example, students can watch sports teaching videos on the Internet and experience the extreme of virtual sports. Interactive learning makes students more actively involved in understanding and thinking about sports, which not only exercises their ability to screen and evaluate information, but also stimulates their active learning and problem-solving abilities.

Secondly, digital technology can track, record and analyze students' learning status and performance in real time, provide teachers and students with timely feedback, and help guide students to improve their sports skills. At the same time, through data display and data interpretation, students can see their strengths and areas to be improved more directly, so as to enhance the ability of self-evaluation and self-improvement, which is also an important content of information technology literacy.

Under the guidance of digital technology, the physical education teaching mode is also more diversified. For example, group cooperation and competition can be introduced into the teaching, the Internet can be

used for distance teaching, and diversified online sports activities can be carried out to further improve students' collaboration and innovation ability. In addition, teachers can also make use of digital technology for classroom management, set up warning and protection mechanisms, educate students to standardize the use of information technology, protect personal privacy, and improve information ethics awareness, which is an important part of information technology literacy.

Cross-regional teaching and cooperation should be enhanced

Cross-regional teaching and cooperation refers to the use of modern information technology means to break through the geographical space restrictions to achieve the sharing of education and teaching resources and cross-regional cooperation in education and teaching activities. In this mode, teachers and students do not need to gather in the same place, they can realize real-time communication and online interaction through the network platform to realize the sharing of knowledge and information. At the same time, cross-regional teaching and cooperation also include communication and collaboration among educational institutions, such as professional development among teachers, sharing of educational resources between schools, and cooperative research between educators and educational researchers.

In primary school physical education, the importance of cross-regional teaching and cooperation is self-evident. First of all, from the perspective of teaching resource sharing, cross-regional teaching and cooperation can help schools break through regional restrictions and obtain more abundant and diversified teaching resources. This is of great significance for those schools which are located in remote areas and lack of physical education resources. Secondly, from the perspective of educational equity, cross-regional teaching and cooperation can enable all students, no matter where they live, to have access to high-quality educational resources and enjoy high-quality teaching services, which plays an important role in improving educational equity. Finally, from the perspective of global education, cross-regional sports teaching and cooperation can also help students to broaden their international vision, understand and contact sports events and sports methods in different cultural backgrounds, and further enhance their intercultural communication ability and global citizenship.

Driven by digital education technology, physical education in primary schools has been able to break through geographical restrictions and achieve cross-regional teaching and cooperation, thus greatly enhancing the ability of teaching concept innovation, model flexibility and resource sharing. Digital education technology makes online education possible. Through the Internet, students can communicate with teachers by watching online videos or having remote conversations, and experience a physical education learning mode that is completely different from traditional classroom teaching. In this way, the free choice of time and space is realized, which creates the possibility for all kinds of cross-regional physical education and reduces the problem of educational inequality caused by regional restrictions.

In the classroom, digital education technology has also greatly enhanced the coordination and interaction of primary school physical education. With the help of digital technology, teachers can design a variety of teaching activities in the virtual environment, obtain and share information in real time, communicate effectively with students, guide students to learn independently, and students can also communicate with each other through the interactive platform, share learning experience, and better promote knowledge and skills learning and ability improvement. At the same time, cross-regional collaborative work also enables teachers and students to communicate and cooperate with their counterparts at home and abroad, share teaching resources, and improve teaching effects.

For teachers, digital education technology provides teachers with more accurate teaching feedback through data analysis. Teachers can accurately adjust the teaching content and methods according to each student's learning situation, so as to realize truly personalized teaching. Such intelligent education mode makes primary school physical education from the past "teacher-centered" to "learning-centered", to meet the diversified learning needs of students, but also to improve the quality and efficiency of education.

Digital Empowerment of Physical Education in Primary Schools

Limitations of basic equipment and technical conditions

The limitation of basic equipment and technical conditions is an important obstacle to the teaching of physical education in digitally empowered primary schools. Although the application of digital technology in the field of education is becoming more and more popular, the basic equipment and technical conditions faced by primary school physical education still cannot be ignored. The lack of basic equipment is one of the main limiting factors of digitally empowered primary school physical education. The facilities of many primary school sports venues are simple and lack the equipment to adapt to digital teaching. For example, the lack of multimedia classrooms equipped with equipment such as cameras and projectors restricts teachers from using digital technology for demonstrations and presentations in the classroom. In addition, some primary school sports venues do not provide a good Internet environment, making it difficult for teachers and students to navigate and download online resources smoothly. The lack of proper basic equipment prevents physical education teachers from making full use of digital technology means, thus limiting the improvement of teaching effect.

The limitation of technical conditions is also a major problem in the digitally empowered primary physical education teaching. Due to the uneven distribution of educational resources, many primary school teachers have a low level of digital technology and lack the ability to cope with digital teaching. Many physical education teachers do not understand the application concept and specific operation of digital technology, and can not skillfully use the interactive teaching software and related tools based on digital technology. Moreover, due to the lack of unified training and guidance, it is difficult for teachers to follow up the update and development of technology in time. On the other hand, some schools also lack funds and resources to support the training of teachers and the purchase and maintenance of technical equipment, further exacerbating the limitations of technological conditions.

Lack of teacher training and technical literacy

Inadequate teacher training and technical literacy is an important obstacle in the teaching of physical education in digitally empowered primary schools. Although the application of digital technology in the field of education is becoming more and more common, many primary school physical education teachers still have insufficient training and technical literacy in digital teaching. There is a lack of systematic training and guidance for teachers in digital teaching. Many primary physical education teachers have not received relevant digital education training in education colleges or normal schools. They are not familiar with the concepts, methods and practices of digital teaching. Therefore, in actual teaching, teachers may feel lost and confused, and do not know how to rationally apply digital technology to enhance students' learning effect and interest.

Although modern primary school physical education teachers generally master the basic computer operation skills, they do not have a deep understanding of the application of professional digital tools and software, and teachers' literacy in digital technology needs to be improved. With the rapid development of digital technology, new application tools and platforms continue to emerge, and teachers are often unable to follow up and master the latest technical knowledge in time. In addition, teachers are often unable to solve technical failures and difficult problems independently, and need to rely on the support and help of other professionals.

Since digital technology requires teachers to devote more time and energy to learning and applying it, some teachers may be resistant or concerned about it. They worry that they will not be able to adapt to the new teaching style and that new technologies may bring additional burdens and challenges. This negative attitude and psychological state will affect teachers' teaching effectiveness and enthusiasm, so teachers' attitude and psychological quality are also very important for the application of digital teaching.

To sum up, the lack of teacher training and technical literacy is a significant obstacle in digitally empowered primary physical education teaching. To promote the development of digital teaching, it is necessary to

Journal of Ecohumanism March 2024 Volume: 3, No: 7, pp. 2752 – 2768

ISSN: 2752-6798 (Print) | ISSN 2752-6801 (Online) https://ecohumanism.co.uk/joe/ecohumanism

DOI: https://doi.org/10.62754/joe.v3i7.4415

strengthen teacher training and improve their literacy in digital technology. At the same time, it is also necessary to improve the attitude and psychological quality of teachers to help them overcome difficulties and better adapt to the requirements of digital teaching. Only in this way can we make better use of digital technology to improve the quality and effect of physical education in primary schools.

Imbalance of educational resources

The imbalance of educational resources is a major obstacle in the physical education teaching of digitally empowered primary schools. The uneven distribution of primary school physical education teaching resources in different regions has led to the imbalance of education quality and physical education teaching level. Regional differences are one of the important reasons that lead to the imbalance of educational resources. In cities and developed areas, physical education teaching resources in primary schools are relatively sufficient. These areas have better sports facilities and equipment, and the level of teacher training is relatively high. However, in rural areas and economically underdeveloped areas, physical education teaching resources in primary schools are relatively scarce. Lack of professional sports facilities and equipment, can not provide a good teaching environment, quality education and training institutions are relatively few. This difference between regions leads to the imbalance of educational resources, which affects the improvement of the physical education teaching level in primary schools.

Economic conditions are also an important factor leading to the imbalance of educational resources. The investment of educational resources needs economic support, but in some poor areas and places with poor family economic conditions, the investment of educational resources is relatively insufficient. This will lead to the low quality of physical education teaching facilities and equipment in primary schools, and the training and introduction of teachers are limited, unable to provide high-quality teaching resources. However, in areas with relatively good economy, due to sufficient investment in educational resources, the teaching conditions of primary school physical education have been significantly improved.

The problem caused by the imbalance of educational resources is not only the difference of teaching conditions, but also affects the training and development of teachers. In areas where resources are relatively scarce, the opportunities for teacher training and training are limited, leading to the lack of teachers and the imperfection of their quality. In contrast, areas with abundant resources are able to attract more excellent teachers to join and provide better training and development opportunities. This difference exacerbates the imbalance in educational resources.

Attitudes and acceptance of students and parents

The attitude and acceptance of students and parents is another important barrier in the teaching of physical education in digitally empowered primary schools. Different students and parents have different degrees of resistance and inadaptability to the application of digital technology in physical education teaching, which affects the effective implementation of digital empowerment.

There are differences in students' attitudes and acceptance towards digital technology. Some students are interested and curious about new technologies and are willing to take the initiative to contact and learn. For these students, digital empowerment can stimulate their interest in physical education teaching and provide more opportunities and ways to learn. However, there are still some students who have reservations about digital technology, who may prefer traditional physical education teaching methods and are less receptive to the application of digital technology. This difference leads to inconsistent implementation of digital empowerment, which fails to comprehensively cover the needs of all students.

At the primary level, parental support and engagement plays an important role in students' learning and development. However, some parents have doubts about digitally enabled physical education, are reluctant to accept the application of new technologies, and even fear that digital technology may have a negative impact on students' physical and mental health. This attitude and acceptability of parents is not high, which will affect the decision and implementation of digital empowerment in schools and teachers, and may lead to the limited application effect of digital technology in physical education.

Students' and parents' acceptance of the application of digital technology is also related to their experience and educational background. In some economically underdeveloped areas or families with poor economic conditions, students and parents may lack the opportunity to contact and understand digital technology, and hold a more conservative attitude towards its application. In contrast, students and parents in areas or families with more adequate educational resources are more likely to accept and support the application of digital technology in physical education teaching.

Data privacy and data security issues

With the popularity of digital technology applications and the increase in data collection, personal privacy and data security have become a concern. The further promotion of the application of digital technology has brought about an increase in data storage and transmission, but at the same time, it also increases the risk of data leakage and security breaches. Without proper security measures and safeguards, students' and teachers' personal information, students' learning data and assessment scores, among others, may be at risk of being hacked or accidentally leaked. This will not only have an impact on the rights and interests of students and teachers, but also damage the trust in the application of digital technology in the teaching of physical education in primary schools. Digitally empowered physical education in primary schools may involve the collection and analysis of students' personal information and health data, such as students' physical measurement data, sports performance and learning progress, which may be collected and recorded by digital technology applications. However, the collection and processing of such personal information may lead to the risk of personal privacy disclosure. Students and parents are very concerned about the protection of personal privacy and worry that such personal information may be improperly used or abused.

On the other hand, the issue of data privacy and data security is also related to the lack of laws and regulations. At present, there is a lack of clear legal provisions and regulatory mechanisms for data privacy and data security in the physical education teaching of digitally empowered primary schools. This has led to a lack of unified standards and norms for the use and protection of data, which is prone to disputes and disputes. At the same time, the lack of effective supervision and regulatory agencies also makes it difficult for data privacy and data security issues to be effectively addressed.

To sum up, data privacy and data security issues are a major obstacle in the physical education teaching of digitally empowered primary schools. The protection of personal privacy and the guarantee of data security are issues of great concern to students and parents, and the lack of appropriate security measures and regulatory mechanisms may lead to the risk of data leakage and abuse. In addition, the lack of clear legal provisions and regulatory mechanisms also adds to the challenges of data privacy and data security issues.

The evaluation system lags behind

The lagging evaluation system is another important obstacle in the physical education teaching of digitally empowered primary schools. The lag of the evaluation system indicates that the evaluation method, evaluation standard and evaluation content do not adapt to the changes brought by the application of digital technology, and can not fully reflect the real performance and ability of students in physical education teaching. The traditional student evaluation system often relies on subjective teacher observation and simple examination when measuring students' physical education ability. This evaluation method is difficult to fully and accurately understand the students' comprehensive ability and accomplishment in physical education teaching. However, the application of digital technology can provide more comprehensive and objective data and information, which can record the performance and progress of students in different sports. However, the current evaluation system does not make full use of the advantages of digital technology application, fails to integrate and apply digital student data effectively, and the objectivity and accuracy of evaluation results are limited.

The curriculum evaluation system also has the problem of lagging behind. Curriculum evaluation of physical education teaching often still relies on traditional teaching evaluation methods, such as oral evaluation of teachers, written reports and simple questions and answers. This evaluation method fails to make full use of the data and information provided by the application of digital technology, and fails to gain an in-depth

understanding of students' understanding and mastery of different sports and skills. At the same time, the traditional curriculum evaluation system also attaches too much importance to the imparts of knowledge and the quantification of training, and neglects the evaluation of students' comprehensive literacy and creative ability.

The school evaluation system also lags behind in the physical education teaching of digitally empowered primary schools. The school evaluation system often takes students' academic performance and examination results as the important basis, but ignores the uniqueness and comprehensiveness of physical education. The traditional school evaluation system lacks a comprehensive evaluation of students' sports ability and accomplishment, and often takes academic results as the main measurement standard, ignoring the importance of physical education to students' physical and mental health. This makes students' comprehensive performance in physical education teaching not fully recognized and evaluated.

Digital Empowerment of Primary School Physical Education Optimization Strategies

Increase financial input and sponsorship

To solve the problem of "limited infrastructure and technical conditions", increasing financial investment and sponsorship is an important solution. By increasing funding, it can be used to purchase and update digital equipment and technical tools needed for physical education, such as smart sports equipment, virtual reality (VR) devices, sensors, etc. This can improve the level of digital equipment in schools and provide a better digitally empowered environment for teachers and students. In addition to increasing financial input, sponsorship is also an effective way to solve the problem. Schools can partner with businesses, community organizations, sports brands, etc., to seek sponsorship or donations. These partners can not only provide financial support, but also advanced digital sports equipment, technical resources and related training and support to help schools improve their basic equipment and technical conditions. The government can also address the issue through policy guidance and funding programs. The government can provide grant funds for schools to purchase digital sports equipment and technology tools. At the same time, a digital education fund or special fund should be established to provide financial support to schools to speed up the development of digital sports teaching.

In the process of solving the limitations of basic equipment and technical conditions with financial investment and sponsorship, the following points should be paid attention to. First, ensure the reasonable allocation and use of funds. Funds should be reasonably allocated according to actual needs and teaching plans to ensure the maximum improvement of physical education teaching effect. Secondly, establish long-term and stable cooperative relations with partners, strengthen communication and resource sharing, and jointly promote the development of digitally empowered physical education in primary schools. Finally, the effectiveness of the use of funding and sponsorship should be evaluated and tracked on a regular basis, and strategies should be adjusted in a timely manner to ensure maximum benefits and sustainability.

In a word, by increasing capital investment and sponsorship, we can effectively solve the problem of basic equipment and technical conditions in primary school physical education. This will provide students with a better digital enabling education environment and promote the innovation and development of primary school physical education.

Enhance teachers' digital literacy and professional competence

Establish a comprehensive teacher training program. Schools can organize regular training activities, including topical lectures, workshops and seminars, to enhance teachers' digital literacy and professional competence. The training content may include theoretical knowledge of digital physical education, teaching methods and strategies, and the use of digital equipment and technical tools. At the same time, teachers are encouraged to participate in professional learning communities to share experiences and ideas with other teachers to improve their educational skills. Professional teacher guidance and support teams will be provided. Schools can form teacher guidance and support teams made up of professionals to provide personalized, targeted training and guidance to teachers. These teams can provide real-time technical

support, answer questions and solve problems to help teachers overcome technical difficulties and better apply digital technology to promote physical education teaching.

At the education platform level, online education platforms and resources will be actively promoted and applied. Schools can introduce online education platforms and provide teachers with corresponding accounts and training, so that teachers can learn relevant knowledge and skills online. Online education platforms can also provide rich teaching resources, and teachers can choose appropriate courses and textbooks according to their own needs to improve their teaching level.

Policies should also be introduced to encourage teachers to participate in professional digital education research and practice. Schools can set up special research projects or teaching practice projects to encourage and support teachers to participate in digital education research and practice. This can not only improve the professional ability of teachers, but also promote the innovation and development of digital physical education teaching. Schools can develop incentive mechanisms to encourage teachers to actively participate in the learning and practice of digital education. A reward system can be set up to recognize teachers who have made outstanding achievements in digital education and encourage more teachers to join the ranks of digital education.

To sum up, the problem of inadequate teacher training and technological literacy can be effectively addressed by enhancing teachers' digital literacy and professional competence. This will provide strong support and guarantee for physical education teaching in primary schools and promote students' comprehensive quality and development.

Optimize the input and distribution of educational resources

To solve the problem of unbalanced educational resources and optimize the input and distribution of educational resources is the key solution. First of all, we should increase the investment in education. The government and schools should increase funding for physical education teaching in primary schools to ensure a balanced distribution of educational resources. This includes increasing investment in equipment, equipment and venues, and improving the level of provision of teaching facilities and equipment to provide students with a good learning environment and conditions.

Promote and apply digital educational resources. With wide coverage and convenience, digital educational resources can make up for the imbalance caused by geographical and resource differences. Schools can introduce online education platforms and resources to provide online learning opportunities for areas that do not have enough educational resources. At the same time, digital educational resources can provide rich and diverse learning content to meet students' different learning needs. Establish a reasonable mechanism for allocating educational resources. Schools may establish scientific and reasonable rules for the allocation of educational resources and reasonably allocate teaching equipment, equipment, venues and other resources according to the actual situation and needs. At the same time, a monitoring and evaluation mechanism shall be established to ensure the fair distribution and effective use of resources.

Cooperation and sharing of regional educational resources should be strengthened. Schools and education departments can establish a regional educational resources cooperation network to complement and learn from each other's high-quality educational resources through resource sharing. At the same time, the optimal allocation and common development of educational resources can be promoted by means of cross-school cooperation, exchange and learning.

We will strengthen the construction of teaching staff. Teachers are the most important educational resources. Improving their teaching ability and quality is crucial to solving the problem of imbalance in educational resources. Schools can increase input in teacher training and development, provide professional training and guidance, and improve teachers' professional ability and teaching level. At the same time, teachers should be encouraged to participate in professional learning communities and teaching research, so as to jointly improve the quality of education.

To sum up, the imbalance of educational resources can be effectively solved by optimizing the input and distribution of educational resources. This will provide fair resource support for physical education teaching in primary schools and promote the all-round development of students. The government, schools and teachers should work together to provide fair educational opportunities and quality educational resources for every student.

Promote the participation and recognition of students and parents

It is very important to address student and parent attitudes and acceptance and promote their participation and recognition. First, raise students' and parents' awareness of digital teaching resources. Schools and teachers can introduce the value and advantages of digital teaching resources to students and parents through publicity, lectures and parent-teacher meetings. They need to understand that digital teaching resources can provide personalized and diverse learning experiences that can increase the interest and effectiveness of learning.

Second, strengthen the participation and feedback mechanism of students and parents. Schools and teachers should take the initiative to invite students and parents to participate in the development and evaluation process of digital educational resources. Through questionnaires, seminars and other means, we should understand their needs and opinions on digital teaching resources, and make timely adjustments and improvements. Provide targeted training and guidance to students and parents. In response to students' and parents' possible unfamiliarity with and lack of confidence in digital teaching resources, schools and teachers can provide targeted training and guidance to help them master the skills and methods of using digital teaching resources. In this way, their acceptance and engagement can be improved.

Relevant departments should also establish effective communication and cooperation mechanisms. Schools and teachers should establish good communication and cooperation with students and parents to fully understand their needs and opinions. Applications and platforms can be used to regularly publish and share the use methods and cases of digital teaching resources to respond to their doubts and questions.

Finally, stimulate students' and parents' interest and desire to participate. Schools and teachers can design interesting and challenging learning tasks and activities that stimulate students' interest in learning. At the same time, by organizing competitions, displays and sharing activities on a regular basis, students and parents can experience and witness the value and effect of digital teaching resources, and enhance their recognition and acceptance.

To sum up, the problem of students' and parents' attitude and acceptance can be effectively solved by promoting their participation and recognition. This will improve the practical application effect of digital teaching resources, promote the active participation of students and parents in digital education, and further promote the development of physical education in primary schools. Schools and teachers should pay attention to the needs and opinions of students and parents, establish a good cooperative relationship, and jointly promote the innovation and improvement of education.

Develop privacy and security policies

It is very important to address data privacy and data security issues and develop privacy and security policies. Schools and educational institutions should develop clear privacy and security policies to ensure that students' and parents' data is reasonably protected and used securely. Policies should clearly specify the purpose, scope and manner in which educational institutions and teachers use student data, and clearly prohibit unauthorized data access and sharing. Data management departments Huo institutions should strengthen data security management and technical measures. Schools and educational institutions should establish a sound data security management system, including data collection, storage, processing and transmission. Technical means such as encryption, permission management and access control should be used to ensure the security and integrity of data.

There is also a need to strengthen privacy and security training for teachers and staff, as well as establish an effective monitoring and evaluation mechanism. Schools and educational institutions should provide the necessary training and guidance to enhance teachers' and staff's awareness and awareness of data privacy and security. Teachers and staff need to understand how to properly collect, use and protect student data, and adhere to strict privacy and security practices. Schools and educational institutions should establish monitoring mechanisms to conduct regular inspections and evaluations of the implementation of data privacy and security. Professional institutions can be commissioned to conduct third-party assessments to ensure the effectiveness and compliance of policies and measures, and to identify and address existing problems in a timely manner.

At the same time, schools and teachers should establish good communication and cooperation with parents and students to fully understand their concerns and needs regarding data privacy and security. Provide parents and students with knowledge and information on data use and protection on a regular basis to answer their doubts and questions.

To sum up, data privacy and data security issues can be effectively addressed through the formulation of privacy and security policies. Schools and educational institutions should establish a sound data security management system, strengthen the training and awareness of teachers and staff, conduct regular supervision and evaluation, and establish good communication and cooperation with parents and students. This will ensure reasonable protection and safe use of students' and parents' data, and further promote the development and construction of physical education teaching in primary schools.

Establish a digital primary school physical education evaluation system in the digital era

To solve the problem of lagging evaluation system, it is very crucial to establish digital primary school physical education evaluation system. The digital primary school physical education evaluation system should be based on modern educational ideas and technical means, and make full use of digital technology and tools. Students' sports performance, skill mastery and physical quality can be measured and recorded digitally, and data can be obtained through sensors, intelligent devices and other technical means for real-time monitoring and analysis. The digital primary school physical education evaluation system should also meet the diversified and comprehensive needs. In addition to the traditional physical examination and assessment, it should also include more comprehensive evaluation and personalized evaluation methods. Different types of evaluation tasks and items can be designed to assess students' physical ability and quality from multiple dimensions, including motor skills, collaboration ability, psychological quality and so on.

The digital primary school physical education evaluation system should pay attention to the combination of quantitative and qualitative. The use of digital technology can effectively obtain students' sports data and behavior records to achieve quantitative evaluation. At the same time, it should also pay attention to students' subjective evaluation and self-reflection, and obtain students' subjective feelings and opinions through questionnaires, self-evaluation and other ways to achieve qualitative evaluation. In this process, the establishment of digital primary school physical education evaluation system needs to rely on appropriate software and hardware platforms and tools, and should choose digital tools and platforms suitable for primary school physical education evaluation, including data acquisition equipment, data analysis software and so on. At the same time, it is also necessary to establish a unified data management and sharing platform to ensure data security and privacy protection.

Finally, training and guidance for teachers and students should be strengthened. Teachers need to understand the basic principles and operational methods of the digital evaluation system, and master the use of relevant technical tools. Students need to accept the training and guidance of digital evaluation, understand the purpose and method of evaluation, and improve the cognition and understanding of their own sports ability and quality.

To sum up, by establishing the digital primary school physical education evaluation system in the digital era, the problem of lagging evaluation system can be effectively solved. The system should be based on modern educational concepts and technical means, make full use of digital technology and tools, and

evaluate students' sports ability and quality in a diversified and comprehensive way. At the same time, it also needs to rely on appropriate hardware and software platforms and tools to strengthen the training and guidance of teachers and students. This will promote the modern development of physical education evaluation in primary schools, better stimulate students' interest in learning and active participation, and improve the quality of education and teaching.

Conclusions

Research Summary

In this paper, the value, obstacles and strategies of digitally empowered physical education in primary schools are deeply discussed, and the following conclusions can be drawn from the analysis.

Firstly, digital empowered physical education in primary schools has great potential in improving the quality and effect of students' physical education. The application of digital technology can provide students with rich and diverse learning resources and interactive ways to stimulate their learning interest and motivation. In addition, digital teaching can also provide objective and accurate data and evaluation to promote the individuation and differentiation of physical education.

However, digitally empowered physical education in primary schools also faces some obstacles. Among them, insufficient funding and sponsorship is one of the most important. The acquisition and maintenance cost of digital equipment is high, and the support and sponsorship of digital sports teaching by enterprises and institutions is relatively insufficient. In addition, the lack of digital literacy and professional competence of teachers limits the effective application of digital technology. Issues such as uneven investment and distribution of educational resources, insufficient participation and recognition of students and parents, and lack of privacy and security policies have also constrained the development of digitally empowered physical education teaching in primary schools.

In order to optimize the digital empowered primary physical education teaching, this paper puts forward six optimization strategies. The first is to increase funding and sponsorship to ensure that schools can get the financial support needed to purchase digital equipment and carry out digital teaching. The second is to enhance teachers' digital literacy and professional competence by providing them with relevant training and support. Third, optimize the input and distribution of educational resources to ensure a balanced distribution and fair use of digital teaching resources. Fourth, actively promote the participation and recognition of students and parents, and encourage them to actively participate in the interaction and evaluation of digital teaching. Fifth, develop privacy and security policies to protect students' and teachers' personal information and data security. Finally, a digital primary school physical education evaluation system should be established in the digital era to make full use of the advantages of digital technology to accurately and scientifically evaluate students' performance and ability in physical education teaching.

Through the implementation of the above optimization strategies, it can promote the development of digital empowered primary school physical education, give full play to the maximum value and potential of digital technology in physical education, and improve the quality and effect of teaching. However, in order to verify the feasibility and effectiveness of these strategies, further research and practice are needed. It is hoped that the research in this paper can provide useful reference and guidance for the digital empowerment of physical education in primary school.

Outlook on the future development of physical education in primary schools

Looking forward to the future, physical education in primary schools will further realize digital, personalized and comprehensive development. With the rapid development of digital technology, digital empowerment will become the main trend of primary school physical education. Schools will gradually be equipped with advanced digital equipment and platforms, and teachers will be better equipped to apply digital technology to design innovative teaching content and activities. Students will experience more fun and motivation through digital teaching resources and gamified learning, and personalized learning will become possible.

In addition, cooperation between schools and social resources will also be further strengthened, with sponsors and enterprises more involved in the digital development of physical education teaching in primary schools and providing more resources and support. To sum up, in the future, physical education in primary schools will develop towards digitalization, personalization and cooperation, providing students with more diversified learning experiences and opportunities to promote all-round development.

References

- Na Z "Jiping W "Xin L , et al. The digital competence of Chinese higher education students and the linkage with their career adaptability[J]. Education + Training, 2,023,65(6-7).
- Anselm B, Gotz S,Illie I. Digital Teaching and Learning in Higher Education:Culture, Language, Social Issues[M].transcript Verlag:2023-11-14.
- Yun J C "Jeong E R "Xin J . Effect of self-management education using pictogram-based content of health information on outcomes in Korean patients with chronic obstructive pulmonary disease: A randomized controlled trial. [J]. Geriatric nursing (New York, N.Y.),2023,54.
- Domel S B. Accessible Digital Technology in Nutrition Education and Behavior Change Interventions. [J]. Journal of nutrition education and behavior, 2023, 55(11).
- Chen Y ,Yang M . Transformation of Law Education in Digital Age—Take Legal Professional Ethics Class as An Example[J]. Journal of Educational Research and Policies,2023,5(10).
- Lanndon O ,Celbert M H ,Rosendo I C , et al. Modelling the Utilization of Digital Technology in Education During the COVID-19 Pandemic Through an Expert-Based Analytic Tool[J]. International Journal of Information and Communication Technology Education (IJICTE),2023,19(1).
- Xu S ,Chen P ,Zhang G . Hot Topics and Trends in Information Education Research: Higher Vocational College Teachers' Informatization Instructional Competence in China [J]. International Journal of Journal of Higher Education, 2,023,12(5).
- W. H B G ,A. V G ,Taija P , et al. Bridging the gap between building information modelling education and practice: a competency-based education perspective [J]. International Journal of Construction Management, 2023, 23(15).
- Massimiliano G ,Giulio C ,Maurizio C . Management of hospital admission, patient information and education, and immediate preoperative care. [J]. Saudi journal of anaesthesia, 2023, 17(4).
- Martin S D,Ortega Z F,Molero P P, et al. Relationship between Physical Activity, Mediterranean Diet and Emotional Intelligence in Spanish Primary Education Students [J]. Children, 2023, 10(10).
- Markoviic, Bubanj S, boheme kelji G, et al. Efficiency of an Alternative Physical Education Program for the Lower Grades of Elementary School Children [J]. Children, 2023, 10 (ten).
- JAG, Therese RD, Nicholas W, et al. Online Patient Education Resources for Anterior Cruciate Ligament Reconstruction:
 An Assessment of the Accuracy and Reliability of Information on the Internet Over the Past Decade. [J]. Cureus, 2023, (10).
- [13] Alejandro Q, Carlos J B. Effects of gamified didactic with exergames on the psychological variables associated with promoting physical exercise: results of a natural experiment run in primary schools [J]. Physical Education and Sport Pedagogy, 2023, 28(5).
- Zhu X ,Li Z ,Liu Y , et al. Research on Ideological and Political Teaching of University Physical Education Curriculum Based on OBE Concept[J]. Curriculum and Teaching Methodology,2023,6(17).
- Daniel M M ,Paloma F B . The subject 'music' from inside versus outside the music teaching profession: a comparative case study on the views of music and non-music primary education teachers in Spain[J]. Music Education Research, 2023, 25 (4).
- Agency Information Collection Activities; Comment Request; Teacher Education Assistance for College and Higher Education Grant Eligibility Regulations [J]. The Federal Register / The FIND, 2023,88 (140).
- Susan M ,Frances M ,Vasiliki P , et al. Inclusion in Physical Education in primary schools in Europe through the lens of an Erasmus+ partnership [J]. Education 3-13, 2,023,51(5).
- Veronica A,Alonso I J R,Yuste L J L. How do Girls and Boys Feel Emotions? Gender Differences in Physical Education in Primary School [J]. Physical Culture and Sport. Studies and Research, 2023100 (1).
- A. S K K, Lesley W. Guidelines for action learning as professional development to transform Physical Education in low resourced primary schools in South Africa[J]. Action Learning: Research and Practice,2023,20(2).
- Athanasios K ,Marios G . Acute enhancement of executive functions through cognitively challenging physical activity [J]. games in elementary physical education. European Physical Education Review,2023,29(2).
- Echeverria L S,Lacruz C I,Pardo M B. Whole Systems Thinking and Context of the University Teacher on Curricular Sustainability in Primary Education Teaching Degrees at the University of Zaragoza[J]. Education Sciences,2023,13(4).
- Carolina L,Tommy R, Therese S. Unexcused absence from physical education in elementary school. On the role of autonomous motivation and body image factors[J]. Body Image,2023,45.
- Ruben L,Mikel V, Angel M L, et al. Intervention Programme Based on Self-Determination Theory to Promote Extracurricular Physical Activity through Physical Education in Primary School: A Study Protocol[J]. Children,2023,10(3).
- Vicky R . 'We want to, but we can't': pre-service teachers' experiences of learning to teach primary physical education [J]. Oxford Review of ,49 Education, 2023 (2).

- Katrijn O ,Frans P ,Frank J , et al. Physical education teachers' perceptions and operationalisations of personal and social development goals in primary education [J]. European Physical Education Review,202,28(4).
- Yubin Y ,Xueyan J ,Xiaoming Y , et al. The Effect of Persistence of Physical Exercise on the Positive Psychological Emotions of Primary School Students under the STEAM Education Concept [J]. International Journal of Environmental Research and Public Health, 202, 19(18).
- Jingen T, Huijian D, Chicheng L, et al. Research on Ancestral Causes of Knowledge Hiding Behavior of Primary and Middle School Physical Education Teachers' Workshop Network Study Members Based on Grounds Theory [J]. Applied & Educational Psychology, 2022, 3(2).
- Irina K ,Ginas C ,Saule S , et al. Effects of a Physical Education Program on Physical Activity and Emotional Well-Being among Primary School [J]. International Journal of Environmental Research and Public Health, 21,18(14).
- Cruz B A . Post-primary School Students' Attitudes Toward Physical Education and Physical Activity Preferences: Philippines' K-12 Program[J]. The Asia-Pacific Education Researcher, 2021, 31(5).
- Zhang J. The Realistic Predicament and Path Dispelling of the Integration of Physical Education Curriculum in Universities, Middle Schools and Primary Schools. Frontiers in Sport Research, 2021, 3.0(2.0).