Global Social Sciences Review (GSSR)
URL: http://dx.doi.org/10.31703/gssr.2021(VI-I).26

DOI: 10.31703/gssr.2021(VI-I).26

Exploring Technology: An Aid to the Physical Training Teacher Education

Maheen Hashim Khan Burki * Muhammad Usman † Abdul Rasheed ‡

Abstract *The dominance of technology is a universal phenomenon, and like every other aspect of life, education could not spare itself from its influence. The opportunities being offered by the modern technologies incorporated in physical education can produce remarkable outcomes. This study offers an exploration into the potential use of technology as an aid in physical education. It reflects the practical prospects that new technology offers and the ways it can be applied to improve the learning process in physical education classrooms. Teachers can take help from digital technologies for better engagement of the students. For this purpose, teachers can first adapt to the technology by different formal and informal learning sources like seminar, conferences, training program, self-education and peer group discussions. To avoid technology being a source of distraction, a well-designed and practically controlled system of technology needs to be introduced into the classroom. The overall understanding of the students can be improved by using technological aids.*

- Vol. VI, No. I (Winter 2021)
- Pages: 266 – 271
- p- ISSN: 2520-0348
- e-ISSN: 2616-793X
- ISSN-L: 2520-0348

Key Words: Technology, Integration, Physical Education, Learning

Introduction

This study focuses on the use of technology as an aid in physical training teacher education. The prompt technological advancement and digitalization have posed a strong influence on physical education. The process of technological revolution has given rise to new dimensions towards the way physical education is imparted in different educational sectors. Certain digital innovations have brought along a more refined form of pedagogy techniques in physical education. It has been contributive in shaping physical education and training not only in pedagogy theory but also in its practice all across the globe (Koekoek & Hilvoorde, 2019).

Different programs like teacher education are organized with a purpose to foster such professionals and instructors who are able to improve their teaching skills while incorporating technology into it more effectively. Despite being based on certain anticipations, an abundant blend of technological opportunities in physical education, the programs like "*physical education teacher education or PETE*" still have to prove their effectiveness. To reach the usefulness of technology in physical education, or in other words, the "educational technology", the PETE pass-outs must enter into the career while applying the skills they have learnt from such programs (Krause, O'Neil, & Jones, 2019).

The use of technology can prove to be effective to overcome certain barriers in physical education. It can effectively augment teaching as well as learning among the participants. While classifying different pedagogic standards, the physical education experts are more likely to familiarize the students with technological gears like the internet, social media networks, video games, virtual reality replications etc. moreover, a tool like a laptop, iPad, mobiles tablets can be incorporated to boost the learning of physical education (Krause, O'Neil, & Jones, 2019).

Like the whole world, technology is also altering things in education systems like schools with no exceptions for physical education. The physical education experience of the students is undergoing certain modifications. It has been

* Research Scholar MPhil Sports Science, Riphah International University, Faisalabad, Punjab, Pakistan.
Email: maheenburki2608@gmail.com
† Research Scholar MPhil Sports Science, Riphah International University, Faisalabad, Punjab, Pakistan.
‡ Research Scholar MPhil Sports Science, Riphah International University, Faisalabad, Punjab, Pakistan.

Citation: Burki, M. H. K., Usman, M., & Rasheed, A. (2021). Exploring Technology: An Aid to the Physical Training Teacher Education. *Global Social Sciences Review, VI*(I), 266-271. https://doi.org/10.31703/gssr.2021(VI-I).26

observed that the infusion of technology has helped students to change their passive life routines into more physically active ones. There are focusing on their bodily fitness. Since the technology is positively participating in improving not only the learning of the students but also their physical health, still there are certain questions raised about its place in the physical education classrooms (Hanski, 2016).

On the other hand use of technology in physical education was studied differently by some researchers. The surplus incorporation of technological aids into the physical education lessons and trainings could marginalize the role of physical education instructors or teachers to a greater extent (Enright & Gard, 2015).

The notion was supported in a related study stating that although the urges in support of technology are valid and based on logical manifestations, in some case, there exists a void in explaining how the technology-based tools can help physical education teachers boost learning among the students. On the other hand, in a number of cases, technology seems to be more of a distracting kind than a supporting resource (Wyant & Baek, 2018).

Similarly, another study also revealed that in most of the cases when adoption of technology in classrooms undergoes difficulties are due to the cost and certain features, it offers for the consumers. (Mikat & Anderson, 2005). Contrary to it, an important point was also observed that the area of technology and its integration with technology had been the least studies; thus, more research is required in this regard. The research needs to be more focused so that it can add the teachers of physical education who can infuse technology-based facilities into their classrooms and to be self-assured that technology has an overall positive impact on the class they are teaching (Mohnsen, 2012).

There are few digital technology-based features that can be incorporated by the physical education teachers into their classrooms; still, there can witness a constant struggle among the teachers while finding a certain piece of technology that can help their students to learn physical education with more effectiveness. This struggle can be traced to the fact that teacher is concerned only with that feature or gadgets of technology that do not distract students but offer greater learning among them. Similarly, this scuffle of the physical education teachers is also due to the lack of proper training and insufficient time to learn the infusion of technology in the physical education classes (Wyant & Baek, 2018).

The financial resources are also closely related to the implementation of technological features into physical education and training. A related study observed that some schools do not release sufficient funds to provide their physical education teachers with the required facilities of technology; at the same, they cannot manage to give time in order to arrange training sessions for them. Consequently, the whole system lack in adopting the technology-based function in physical education (McVicker, 2018).

Results of another study suggest that perception of technology among the teachers of physical education and training also serves to be an impacting factor in the whole process. Most of the teachers perceived that there is a lack of technological infusion in physical education classes, and if any technology is to be incorporated in such classroom, then it must serve to be vigorous, reliable and designed in such a way that purely fulfils the aims of physical education training and learning (Medlin, 2019).

No doubt there are certain gains while integrating technology with physical education, and it positively impacts the whole learning process. But technology can also play as a form of distraction for the students in physical education classrooms if it is not adopted in a proper way. In the education sector role of technology is significant, but when it comes to physical education, I seem to be absent or lack in numerous ways. This study tries to explore the use of technology as an aid in physical education, and teacher training with proper programs can incorporate it into their teaching with promising prospects among the students in terms of their learning.

Scope of the Study

The impact of technology is universal, and like all other aspects of life, education has no exceptions. When it comes to physical education, the function of technology becomes more significant. On the one hand, a widely known perception is that the technology is more of a distraction, especially for the young generation, but when operated in a well-designed and measured way, such accusations seem invalid. This study is an effort to know the role of digital technology in learning and teaching

© 2021 The Author(s). This work is licensed under a Creative Commons Attribution-NonCommercial-NoDerivatives 4.0 International License

lessons of physical education. Using different features and gadgets of technology can serve as an aid for the teachers of physical education. Precision and planning is the key function that teacher can ruminate to get best out of the technology to meet their goals in a class.

Objectives of the Study

The research focuses on the following objectives

- To examine the scope of technology infusion in physical education.
- To analyze the impact of technology on learning and teaching of physical education.

Research Questions

1. Does the incorporation of technology in physical education classes improve the engagement of the students?
2. Does the use of technological features facilitate teachers while teaching physical education lessons?

Literature Review

It has been a while since the world has introduced itself to technology. It has posed a visible impact on all aspects of life. But for education, it is comparatively novel. As it is changing continuously, it is reshaping its role in education (Avedisia, 2019). Since the technology is constantly changing and reforming thus there is a chance of constant learning (Totoraitis, 2018).

A study suggested that physical education teacher do not find it easy to implement technology in classrooms. They struggle while handling technology as a mean of teaching. The reasons behind such struggles are numerous. For example, technology sometimes causes distraction among the students, teacher lack professional training to adapt to technology; it can lead to waste of time and deprive teachers to complete their planned lesson in a specific period. The proper use of technology, appropriate training of the teachers, and careful planning of the lesson can serve as the solutions for the struggles of the physical education teachers. This will also help them to effectively incorporate technology into their classrooms (Hyndman, 2018).

It was suggested in a study that it is very significant to have physical education classes equipped with technological features for these encourage the students. Similarly, with technology, the students can learn more effectively and can easily relate physical education to the external world they live in (McVicker, 2018).

The infusion of technology into education is not a new phenomenon; there have been decades since this bond with a more dynamic impact on education. The rise of technology is traced back to the 1800s, and film projectors were introduced in the 1900s (Gray, 2019).

The important development in this regard happened in 1963 when the "*Vocational Education Act*" approved funds for the use of technology in schools; that was the time when technology began to be witnessed in education. After that, computers were seen in classrooms, and the computer-related course was taught to the students. Mid 1980's were the time when Apple computers grabbed the attention of the education sector. About a decade, internet connection altered the computers inset in the classrooms. The 2000s saw a modified setup in education focusing on "*STEM, i.e. Science, Technology, Engineering and Mathematics".* Today it has become "*ISTE; International Society for Technology in Education".* These are the standards that help to formulate innovations in education. Thus technology and it used in education have undergone a lot of changes during the course of time. In 2017 about 50 percent of the teacher had a student device ratio that has risen to 75 percent recently. The whole phenomenon I pointing out to a very interesting count that number will increase in the coming years and technology will be seen more prevalent in education (Christensen, 2019).

Another study that interviewed different physical education teachers and students revealed that teachers used pockets of PCs, heart-rate monitors, and activity watches to reach physical education. While others used projectors and videos to teach the lessons of physical education so that students can learn more effectively. The teachers were found to be of the opinion that taking help from technology can increase the involvement of the students. The students find it a different mode of learning than that of the conventional ways. Technology appeals to more students, thus ensuring maximum engagement (Eberline & Richards, 2013).

Similarly, it was found that for meaningful learning, engagement of the students in certain learning activities ensures active knowledge about the lesson being taught. The study further suggested that if the teachers of physical education equip their classrooms with technology while focusing on the student-centred approach coupled with certain strategies of instruction, the engagement of the students might increase to a greater extent. The change in behavior of the students can also be observed by the teachers. Thus overall learning would be strengthened (Gubacs, 2004).

The perception of physical education teachers about technology is also very important. A related study suggests that teachers and instructor who want to introduce technology into their classrooms must have precise knowledge about different pieces of technology. It is the role of the teachers that can enhance the part that technology is more likely to play in physical education. In case if the student lacks prior knowledge about digital gadgets and technological features, there can be a negative impact on the students. Thus the teacher is required to know a lot about the problem that may happen while handling technology in the classroom. Most importantly, they should know about how to use or handle the technology they choose to implement in the class. This will help them to trace the part it can play in the learning of the students of physical education (Yaman, 2008).

Technology and its Impact on Physical Education and Training

In physical education and training use of technology imparts in multiple ways. Studies revealed certain positive impacts of technological integration into physical education. The students who were instructed through flipped learning shown visible improvement in their learning when exposed to the lessons of physical education. Students reflected improvements in their academic motivation, problem-solving techniques, utilization of assigned classroom time, positive interaction with the fellows and teachers and showed a greater willingness to test and exam. Thus, the flipped learning helped students to improve not only academically but also physically.

How can Physical Education Teachers Adapt to Technology?

Most of the times, teachers undergo certain barriers while using technology in their classrooms. First of all facilitation of teachers is the key to the problem. Since teachers are the key agents in introducing different pedagogical methods, they need access to digital and technological resources. This is because they can improve their own understanding in the first place, and then they become capable of incorporating even the most advanced form of technology for teaching the certain lesson of physical education to their students. The second most important element is kind of internal barriers of the teachers. These are influential in terms of internal effects for the teachers while dealing with technology. When the question of technology infusion in physical education classes arises, personal knowledge of the teachers, their skills, efficiency, instructional opinions and attitudes play a significant role. Among all such internal aspects, knowledge of the technology incorporation is leading to successfully use technology well incorporated in the classroom. For the effective incorporation of technology, the teacher is needed to cultivate a form of specialized knowledge, also called "*TPCK or Technological Pedagogical Content Knowledge*". This is basically the integration of three forms of knowledge; technological knowledge (the understanding of the technology), pedagogical knowledge (instructional and teaching expertise) and content knowledge (knowledge of the teachers for the content/material that is to be taught to the students). For technological integration, the teachers are required to improve all these three forms of knowledge (Mishra & Koehler, 2006).

Technological Learning Sources for Teachers

There are certain learning sources that can help physical education teachers to learn educational or instructional technology for effective use in teaching. These sources can be divided into two types, i.e., formal education and informal

education. Formal education sources include school level workshops, higher education studies, and national or international level conferences. These can provide proper training to the teacher to integrate technology into their lessons. On the other hand, informal means of education comprise self-education, peer group discussion and debates. Here teachers could learn without any formal aid of any sort rather;, they explore for themselves using different sources like the internet etc., to improve their understanding of the technology. In general, both of these formal and informal learning sources are accommodating so that teachers may have a better understanding of the technology so that they can productively incorporate it into the physical education classrooms.

Technologies that can be Integrated into the Physical Education

The variety of technological features, gadgets and most recent application can be used to improve the learning of physical education students. Laptops, mobile phones, iPad etc., are the more conventional form of the technologies being used in the classrooms. Recently different advancement has been witnessed in technology that is precisely related to the physical fitness, physical exercises, sports activities and health that can be used to engage students for improved leaning. Among them is activity tracking devices, physical fitness tracking application, GPS components, motion analysis device, sports video gaming, diet tracking apps etc. These can serve to produce good results among the students and promote active learning. No doubt these are not used at the elementary or secondary level by physical education teachers but are more liable to be adopted in the near future. Proper funds

Impact of Technology on Learning of Physical Education Students

The use of digital modes in teaching can have positive impacts on students. They can improve learning abilities to a greater extent. Since the age is widely spreading young technology generation seems to be more engaged with it and can easily adapt to it without any much struggle. Thus this habitual practice can be better used by using it for educational purpose. Almost everyone in the contemporary digital world has access to modern technological gadgets and have perfect knowledge about their function; this knowledge can help them to improve their academics. Properly prescribed video games, videos, clips, physical fitness measuring application, and other similar content can impart it the physical education lessons and their understanding among the students with more effective outcomes. Both parents and teacher have been heard complaining about children being addicted to technology. This can be turned into a blessing by mutual cooperation and planning so that technology can make them more physically active than passive and least interested in somatic activities.

Conclusion

Modern trends of technology are inevitable in education. Technological features can serve in a better way when integrated into the physical education learning process. Teachers can use the technological addiction of the students to improve their learning. Students understand better when instructed through videos, games, mobile augmented reality, and virtual reality and more recently through different applications. All these can be infused into their classroom learning so that there can be improved engagement with the lessons being taught. Teacher's attitude and precision of the technology can also play an important part in his regard, so with a prior understanding of technology, teachers can get the best results from their students. The teacher can improve their understanding through self-understanding as well as other formal trainings. Use of digital applications, students can be avoided from getting bored while learning physical education lessons. It can persuade them to practice physical exercises and related activities that they learn in the classroom. Thus technology integration into physical education visible improvements among the students can be witnessed.

References

Avedisia, A. (2019, January 4). *Emerging technologies that will reshape education in 2019*. www.edsurge.com: https://www.edsurge.com/news/2018-12-29-3-emerging-technologies-that-will-reshape-education-in-2019

Christensen, D. (2019, August 13). The history of the emergence of technology in education. www.classcraft.com: https://www.classcraft.com/blog/features/the-history-of-the-emergence -of-technology-in-education/

Eberline, A. D., & Richards, A. R. (2013). Teaching with technology in physical education. *Journal for Physical and Sport Educators, 26(6)*, 38–39.

Enright, E., & Gard, M. (2015). Media, digital technology and learning in sport: A critical response to Hodkinson, Biesta and James. *Physical Education and Sport Pedagogy, 21(1), doi: 10.1080/17408989.2015.1043258* , 40–54.

Gray, L. (2019). History of technology in the classroom. study.com: https://study.com/academy/lesson/history-of-technology-in-the-classroom.html

Gubacs, K. (2004, September). Project-based learning: A student-centered approach to integrating technology into physical education teacher education. search-proquest.com: https://search-proquest.com.ezproxy.nwciowa.edu/docview/215758224?accountid=28306

Hanski, M. (2016, July 14). Gym classes go digital: How tech changes physical education. blog.capterra.com/gym-classes-go-digital: https://blog.capterra.com/gym-classes-go-digital-how-tech-changes-physical-education

Hyndman, B. (2018 , August 13). Ten reasons teachers can struggle to use technology in the classroom. theconversation.com: http://theconversation.com/ten-reasons-teachers-can-struggle-to-use-technology-in-the-classroom-101114

Koekoek, J., & Hilvoorde, I. V. (2019). Digital Technology in Physical Education. Routledge.

Krause, J. M., O'Neil, K., & Jones, E. (2019). Technology in Physical Education Teacher Education: A Call to Action . *Quest* , 241-259 .

McVicker, D. (2018, November 1). How technology changes physical education classes. learn.g2.com: https://learn.g2.com/technology-in-physical-education

Medlin, P. (2019, March 25). *T*he rapid growth of '1:1' technology and how it's changing the classroom. www.northernpublicradio.org: https://www.northernpublicradio.org/post/rapid-growth-11-technology-and-how-its

Mikat, R. P., & Anderson, M. (2005). Choosing the best digital camera for your program. *JOPERD: The Journal of Physical Education, 76(3)*, 20-21.

Mishra, P., & Koehler, M. (2006). Technological pedagogical content knowledge: A framework for teacher knowledge. *The Teachers College Record, 108(6),*, 1017-1054.

Mohnsen, B. S. (2012). Using Technology in Physical Education (4th ed.). Big Bear Lake: BonnieS Fitware, Inc.

Totoraitis, A. (2018, January 11). *Tec*hnology is always changing, so you need to be always learning. https://blog.directionstraining.com/azure/need-to-be-always-learning: https://blog.directionstraining.com/azure/need-to-be-always-learning

Wyant, J., & Baek, J. H. (2018, January 11). Re-thinking technology adoption in physical education. Curriculum Studies in Health and Physical Education. www.tandfonline.com: https://www.tandfonline.com/doi/full/10.1080/25742981.2018.1514983

Yaman, C. (2008). The abilities of physical education teachers in educational technologies and multimedia. . *Turkish Online Journal of Educational Technology, 7(2).*