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Integration of Technology in Teaching Physical Education and the Performance of PE Faculty Members in a Selected College in Hunan Province

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Abstract: *Since the outbreak of the epidemic, colleges and universities across the country have begun to adopt online courses to meet the needs of students, but this is a huge challenge for teachers, as well as for physical education teachers. The application of information technology, the setting of online courses, and the collation and mining of online resources are all significant challenges.[1] This article investigates the development of online courses in a university in Hunan, Understand the problems encountered by physical education teachers in the process and students' feedback on online courses, analyze the problems encountered, and provide solutions.*

Keywords: *Teaching Physical Education; Integration of Technology; Performance of PE Faculty Members*

1. Introduction

In the current world situation, physical education teachers like the other educators in other are maximizing the technology to deliver instruction. The integration of technology becomes to the new generation of learners as they are truly digital natives. Technology, in general, has positively reshaped physical education classes. With apps, online videos, monitors, and trackers, physical teachers are able to create customized and reasonable goals for their students. In the process, students more engaged and committed to being physically active which is essential in developing healthy habits.

The resiliency and creativeness of PE teachers were tested and challenge in many ways. The of teaching and learning from the usual face – to – face interaction to virtual meetings brought to many most specifically to the PE faculty members who are not technology incline. When pandemic hits all countries, it was observed that most of the people in the academe are not yet ready and prepared. With the current situation were majority are dependent on online learning, teachers must take actions in improving their digital skills.[2]

Based on the research on the use of educational technology during the epidemic, the digitization of education, will be the key path for the future development of education (Zhuo, 2021). The of education being affected by the digital age include not only the obvious classroom changes, but also the impact on the definition of the classroom itself. Traditionally, a classroom was defined as a fixed context in which a teacher taught, typically the process of teaching and learning inside a classroom in a school. But in the digital age, students are beginning to undertake distance learning from home, as well students learning that the teacher is no longer definitive in their study of a particular course, and the lecturers themselves are beginning to become blurred.[3] Such a situation gradually makes the of the PE classroom change significantly.

2. Thoretical background

Integrating technology can be more difficult in some school classrooms than others. Physical education class is an example of such classroom. A handful of technologies could be integrated into physical education classes, but teachers struggle with finding a great piece of technology that helps students learn and at the same time does not distract from the lesson. According to Baek (2018), the reasons physical education teachers struggle to implement technology are access to technology, lack of training and time to learn, and perceived value of technology integration. Some schools lack the funds give their physical education teachers access to technology and the time off to receive proper training. [4]

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The massive rise in digital infrastructure makes possible to most countries or regions to quickly resume to teaching and learning in the wake of the epidemic, with China's initiatives in response to the epidemic effectively addressing the country's education issues during the pandemic. On January 27, 2020 China's Ministry of Education issued a nationwide postponement of the start of school, and a week later, on February 4, issued "Guidelines on the Organization and Management of Online Teaching in Universities during the Epidemic" to guide universities nationwide in coping with the impact of the epidemic on education through online teaching. As of early April 2020, 1,454 colleges and universities in China had opened online, 952,000 teachers were teaching online, 942,000 courses were offered, 7.13 million online courses were running online, 17.75 million college students were participating, and a total of 1.18 billion students were studying online (Wu Yan, 2020), and by virtue of the large-scale adoption of digital technology-based educational technology tools, the China has undertaken the first mega-scale educational transformation campaign in human history and has finally resolved the educational dilemma faced by a group that accounts for one-sixth of the global population during this difficult period.

One of the challenges always encountered by PE teachers is the continuous evolution of the teaching profession. [5]In order to fit, PE teachers need to upgrade their knowledge content and skills to meet the demands of the changing time. The technological innovation in teaching is now being highlighted, most specifically.

During the pandemic. Failure to overcome the challenges of using technology in instruction affects the PE teachers' success in facilitating teaching and learning process.

3. Statement of the Problem

This study intends to determine the integration of technology in PE classroom and the teaching performance of PE teachers. Specifically, the study seeks to answer the following questions:

First: What is the profile of PE student respondents in terms of:

(1)Sex

(2)Specialization

Second：What is the level of technology integration knowledge of PE teachers in term of:

(1)Technology Knowledge,

(2)Technology Content Knowledge

(3) Technological Pedagogical Knowledge

(4)Technological Pedagogical Content Knowledge

Third： Is there a significant difference on the level of technology integration knowledge of teachers as assessed by the students when they are grouped according to profile?

Fourth: What is the teaching performance of PE teachers in terms of:

(1)Teaching Methodology

(2)Classroom Management

(3)Knowledge and skills in using technology

(4) Developing and conducting online assessment

Fifth： Is there a significant difference in the teaching performance of the PE teachers when the respondents are grouped according to profile?

Sixth: Is there a significant relationship between the level technology integration knowledge in PE classroom and the teaching performance of the PE teachers?

Seventh: What are the challenges experienced by the PE teachers in using technology in teaching?

Eighth: Based on the findings of the study, what professional development program for PE teachers can be proposed?

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4. Research Locale

The study was conducted in Hunan Sports Vocational College. It is a full-time public higher vocational college established in May 2002 with the approval of Hunan Provincial People's Government and the record of the Ministry of Education. It is the only full-time higher vocational college in Hunan province. 1. Cradle of champions Hunan Sports Vocational College is known as the cradle of Olympic champions and the base of high-end sports talents.

The school has sent nine Olympic champions, 45 world champions including Tang Jiuhong, and more than 200 Asian and national champions. 2. Strong teaching staff Existing staff 376 people, among them, 210 people full-time teachers, enjoy special government allowances of experts with outstanding contribution 7 people, professor, associate professor and senior coach, 69 people, the "double division type" 117 full-time teachers, of the national and provincial excellent teachers (coaches) 12 people, 7 provincial youth backbone teachers, access to domestic scholars 12 people.[6] At the same time, it employs more than 60 experts and skilled craftsmen from sports industry enterprises as part-time teachers.

Through internal training and external introduction, it has established a teaching team with "high humanistic sports literacy, exquisite physical education teaching skills, reasonable structure and combination of specialty and part-time".

5. Analysis if quality factors

The present study determined the profile of the student respondents, the level of technology integration knowledge of teachers in terms of: technological knowledge, technological content knowledge, technological pedagogical knowledge and technological pedagogical content knowledge; difference on the level of technology integration knowledge of teachers when student respondents are grouped according to profile; level of PE teachers teaching performance in terms of teaching and learning methodology, classroom management, knowledge and skills in using technology, and developing and conducting online assessment;; the relationship on the level of technology integration knowledge of teachers and the level of teaching performance; the challenges of faculty members in using technology and utilizing e-learning resources in instructional delivery. The results had lead the researcher to come up with the proposed professional program for PE teachers.[7]

5.1 Level of Technology Integration Knowledge of PE Teachers

According to the assessment of the student respondents, PE teachers are integrating technology in terms of technology knowledge, technology content knowledge, technology pedagogical knowledge and technology pedagogical content knowledge.

5.2 Difference in the level of technology integration knowledge of teachers as assessed by the students when they are grouped according to profile

The student respondents assessment on the level of integration knowledge of PE teachers is not different whether the respondents are male or female and regardless whether the students are specializing in physical education, sports training, sports operation and management, and social sports.[8]

5.3 Teaching Performance of Teachers

As assessed by student respondents, they are satisfied on the level of teaching performance of teachers in terms of teaching methodology, classroom management, knowledge and skills in using technology, and developing and conducting online assessment.

5.4 Difference in the teaching performance of the PEteacherswhentherespondents are grouped according to profile

The student respondents assessment on the teaching performance of PE teachers is not different whether the respondents are male or female and regardless whether the students are specializing in physical education, sports training, sports operation and management, and social sports.[9]

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5.5 Relationship between the level of technology integration knowledge in PE classroom and the teaching performance of the PE teachers

Teachers' level of technology integration knowledge in terms of technology knowledge is positively correlated to a small degree with their level of teaching performance in terms of teaching methodology but was not found significantly correlated in terms of classroom management, knowledge & skills in using technology, and developing and conducting online assignment.[10] Technology content knowledge was also found to be positively correlated to a small degree with their teaching performance in terms of knowledge and skills in using technology, and in developing and conducting online assessment but not significantly correlated with teaching methodology and classroom management.

Technological Pedagogical Knowledge was not significantly correlated with teaching performance in terms of teaching methodology, classroom management, knowledge and skills in using technology, and developing and conductingonline assessment. Technological Pedagogical Content Knowledge was significantly correlated to a small degree with teaching performance in terms of teaching methodology, but not correlated with classroom management, knowledge and skills in using technology, and developing and conducting online assessment. Generally, the result indicates that teachers' level of technology integration knowledge in PE classroom somehow affect the teaching performance of PE teachers.[11]

6. Improvement measures

Based on the conclusions derived in this study, this research came up with the following improvement measures.

(1)The school management must organize training for the PE teachers so they can highly integrate technology in teaching PE classes. The importance of technology integration in teaching is very obvious, so therefore, the management must ensure that the teachers were trained so they will have the confidence to incorporate the technology in teaching.[12]

(2)Intensive training must be organized where the experts in both technology integration and teaching – learning process will conduct hands on activities to assess the needs assistance of the PE teachers. This will allow the teachers to learn how to utilize different e- learning resources so they can confidently face their students in PE classes.[13]

(3)The school management must address the concerns of PE teachers with regard to the purchase of online resources, equipment and subscription to internet services. This is one important contributions the management can do for the teachers.

(4)PE teachers must continuously update themselves so that they better deliver the instruction even in online set – up.

7. Conclusions

According to the findings above, this research came up with the following conclusions.

(1)Student respondents are mostly male in, Grade Level II and III, and specializing in physical education, sports training, sports operation and management, and social sports.

(2)The PE teachers, regardless of their Technology Knowledge, Technological Content Knowledge, Technological Pedagogical Knowledge, and Technological Pedagogical Content Knowledge, integrate technology in their teaching. This means that PE teachers, no matter what is their knowledge and skills in using technology must be trained to highly integrate technology in their delivery of instruction.

(3)The student respondents assessed the teaching performance in terms of teaching methodology, classroom management, knowledge and skills in using technology, and developing and conducting online assessment as satisfied. This means that student respondents are satisfied with PE teachers teaching performance, however, there are still some areas where they can improve as they did not yet rate the performance as excellent. Teachers can create activities that will encourage active participation of the students specifically in the online environment.[14]

(4)The teaching performance of the PE teachers are significant on the profile of student in terms of sex, grade level, and specialization. The teachers must work on the factors that will improve their

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teaching performance.

(5)The results showed that the level of technology integration of PE teachers is associated with the teaching performance. The interview showed that the teachers' technology integration are somehow affecting the teacher's performance as they cannot deliver the instruction well when they have difficulty in the internet and online resources.

(6)The PE teachers challenges in using technology and e- learning resources in delivering instruction includes the lack of training, not enough educational technology, preparation in technology integration, and poor internet connections. If teachers are equipped to face the students in the new platform of teaching- learning process, quality instruction is still possible as long as there are supportive management that provides the requirements integrating technology in PE classes.[15]

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