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Sports Learning Innovation Based on Digital Technology at The Indonesian School of Riyadh

Anis Fuadah Zuhri[1*], Naimah[2], Sintha Sih Dewanti[3], Sri Sumarni[4], Aninditiya Sri Nugraheni[5], Istiningsih[6], Maemonah[7], Muhammad Wahyu[8]

[1]UIN Syarif Hidayatullah Jakarta, Indonesia, [2-7]UIN Sunan Kalijaga Yogyakarta, Indonesia,
[8]Indonesian School of Riyadh, Saudi Arabia
**corresponding author : anisfuadah.zuhri@uinjkt.ac.id*

Abstract

Sports learning innovation based on digital technology is an important study in developing knowledge in the digital era. Set against the Riyadh Indonesian School's unique background, hybrid learning takes place optimally. This innovation provides an effective and enjoyable learning space for students because apart from having the opportunity to study with their classmates, they can also interact and collaborate with long-distance classmates from various cities and even different countries. This research aims to discuss innovations carried out by teachers in digital technology-based sports learning in elementary schools, by applying descriptive qualitative research methods. Primary data sources came from in-depth interviews with teachers, school principals, and education attachés at the Indonesian Embassy in Riyadh. The results of this research showed that; (1) The shift from offline to online to hybrid learning had an impact on the concept of learning at the Riyadh Indonesian School; (2) This shift not only required sufficient network technology but also updated teachers' capabilities through digital-based training; (3) This quality improvement made every class lesson effective, communicative and enjoyable by establishing positive collaboration between regular students groups and distanced students groups. Hybrid learning based on digital technology was an innovation that had been successfully implemented at the Indonesian School of Riyadh and should be an example for other schools.

Keywords: *Innovation, Sports Learning, Digital Technology, Elementary School*

INTRODUCTION

Digital-based sports learning innovation is an interesting discussion in education. Innovation in learning is not only seen as the creation of something new but also interpreted as a way to introduce a new process (Sanita & Saparia, 2023; Fligstein, 2021; Rahayu et al., 2022; Syifa & Julia, 2023). The increasingly rapid development of world technology not only influences social, economic, and communication aspects but is also an important part of educational development. Technological sophistication does not weaken learning this power offers various solutions for teachers in developing learning

innovations (Abdalgane, 2023; Na'imah et al., 2022; Nebeker et al., 2021). In the past, sports learning, for example, could only be followed by students in regular classes, but now it is technology-based, and both regular and distance students can take part in learning at the same time. Advances in digital technology that are utilized optimally by teachers can provide benefits for students to participate in learning optimally, even though they are limited by long distances (Lapitan et al., 2021; Lestari & Na'imah, 2022). Students who live in different countries are accommodated and have the same rights as regular students in absorbing new knowledge from teachers.

Previous articles examined innovations in sports learning in schools but did not include digital technology bases in the innovation. Some research only focuses on teacher innovation in enlivening the classroom atmosphere with various learning methods, without touching on learning activities that combine regular students and distance class students in the same class (Ambarwati et al., 2022; Dalil Rohman et al., 2022; Fernando, 2022b). The technology-based innovations that took place previously were not as specific as sports learning based on hybrid learning but rather on pencak silat movement innovations, flipped classroom innovations, android-based volleyball innovations android (Fernando, 2022a; Jelantik & Gunawan, 2023; Sugiharto & Rejeki, 2023). Apart from that, Indonesian schools abroad in various countries do not obtain permission from the Ministry of Education of the Republic of Indonesia to carry out distance learning as the Indonesian school in Riyadh does. Hence, the research that the author conducted has its uniqueness compared to previous research.

Several previous studies have not discussed technology-based sports learning with students from regular student groups and distance students at the same learning time. For example, research conducted by Mustafa and Hakim (Mustafa & Hakim, 2023), blended learning research in sports learning focuses on the use of digital applications that make it easier for students to access learning even though they are not accompanied by a teacher in the classroom. A similar thing happened in research conducted by Fernando and Umar, et al (Fernando, 2022a) (Umar et al., 2023), in this research the researchers designed Android-based learning media to provide volleyball material in sports learning so that it was effective. These three studies focus more on research that uses digital-based applications, so the topics worked on by researchers are still very limited. The three main things that will be answered in this research are; (1) why technology-based sports learning innovation occurs, (2) what is the impact of technology-based sports learning innovation, and (3) how is technology-based sports learning innovation implemented.

This article expresses the argument that sports learning innovations are carried out by teachers by applying digital technology which is not only implemented in classes with regular students but also in distance classes at the same time. This breakthrough is a strategic step in bridging the gap between students in one region or country and another so that they can connect in interact in hybrid classrooms. Hybrid-based learning not only has a positive impact on students but also on teachers who get their motivation to increase learning innovation. Sports learning in the past was only in a face-to-face situation and was only intended for regular students, but this is no longer the case because both categories of students can be accommodated in the same room using digital technology.

Digital-based learning innovation is a standard thing for teachers to do as facilitators in learning. Teachers in the digital era have many opportunities to innovate using technological devices. As an actor who is required to be able to serve learning with various student backgrounds, a teacher must also be able to balance hybrid learning situations (André et al., 2021; Choi et al., 2023; Moorhouse & Wong, 2022). Schools that serve hybrid learning need technologically fluent teachers (Musdalifah et al., 2021; Setemen et al., 2023; Sulistyanto et al., 2023a). Teaching in a hybrid class certainly has its challenges, because the balance of the teacher's ability to innovate to liven up the class and his or her power to use digital devices is a reference (Vaillancourt et al., 2022; Yangari & Inga, 2021). Sophisticated devices at school alone are certainly not enough, considering that long-distance students also need similar equipment. Support from student guardians is one of the important things for implementing learning in the classroom (Oppermann et al., 2021; Ribeiro et al., 2021). A comfortable hybrid class that creates a pleasant learning atmosphere will be able to have a positive impact on learning outcomes.

METHODS

Researchers explored data from a study of digital-based sports learning innovations at the Indonesian School in Riyadh, Saudi Arabia. The Riyadh Indonesian School was a strategic location to research because it was the place where this issue occurred. The issue studied in this research was a study that was relevant to the development of science because it examined the transformation carried out by teachers in sports learning by making digital technology an important part of change. Thus, the research location, the issues studied, and the unit of analysis referred to were important parts of this research.

This research was a type of descriptive qualitative research by explores primary

and secondary data. Primary data was obtained through observations of classroom learning activities and interviews with experts related to the research issue. Secondary data was obtained from the results of previous research published in reputable journals and sports learning modules that support the research issue. Excavating primary and secondary data in this research supported the success of the qualitative research carried out.

The resource persons in this research were three informants consisting of the 1st-grade sports teacher, the school principal, and the education attache at the Embassy of the Republic of Indonesia Riyadh. The three sources were informants who mastered the information, data, and facts of the issues in this research. A purposive sampling technique was used to select sources in this research. Data collection techniques in this research were observations carried out during sports lessons in class and interviews with informants at different places and times. The results of observations and interviews were processed by researchers to produce important data in this research. Both observation and interviews were very effective data collection techniques.

The data analysis technique used was the Miles and Huberman model data analysis technique with three stages, namely: data reduction, data presentation, and conclusion. These three steps support researchers in obtaining quality qualitative data. This research took place by applying the concept of computer-supported collaborative learning (CSCL) (Lämsä et al., 2021a; Zabolotna et al., 2023). CSCL was a student-centered learning concept with a combination of cooperative learning models using internet computers as a learning medium, as well as connecting regular and distance learning students (Crook, 2022a; Muñoz-Carril et al., 2021a). The CSCL concept is important as an umbrella in this research.

RESULTS AND DISCUSSION

Sports learning innovations based on digital technology required hard work from various parties, including teachers, students, student guardians, and school management in the implementation process. There were 3 findings in the following results; (1) towards online learning, (2) digital transformation in schools, and (3) innovation in sports learning.

Table 1. Towards Online Learning

Source	Data	Coding
P1, P2	For guardians of students who forgot account passwords, learning preparation took a long time and less effective time.	Mastery of technology
P1, P2	The teacher's laptop and cellphone memory was full, and low-batt, so the device got hot when used for hours.	Equipment is not standardized.
P1, P2, P3	WiFi speed was still low, so the connection was not stable, and there were network interruptions.	Weak WiFi network

Source: Prepared by the author, 2024.

Table 1 shows that there were challenges in moving offline learning to online learning. This was not only related to the readiness of equipment in the form of laptops with sufficient storage space but also should be supported by the use of WiFi which could reach all classrooms, especially in learning for teachers. Apart from that, moving from online learning to outside the network was also a challenge for parents of students, considering that not all parents could master technology, especially connecting students at home to online learning at school via personal accounts. Forgetting the password to log in to an account was a routine thing in the early days of online classes. So, online learning was not only a challenge for teachers and students but also student guardians and school management.

Online-based learning became a necessity when schools were affected by the Covid-19 pandemic so teachers and student guardians became the parties who guaranteed the smooth running of students learning in this situation. As a teacher, a situation that was not easy was the availability of equipment that was not up to standard, so that learning carried out online was not optimal. The need for teachers to download various applications that supported learning was a certainty, so equipment that had sufficient storage space was needed. Even long learning durations meant teachers needed stronger laptop battery power. However, the problems faced by teachers did not extend to this aspect, an unstable internet network made online learning less effective. Apart from that, when starting learning, time was often wasted confirming the student's account password because the student's guardian forgot it. Even though many problems exist, the online learning experience had become a new and important thing in a positive change.

The flow toward online learning in Table 1 showed that every change required optimal time and efforted from various parties for the continuation of effective learning

for students. Technology support that met standards, a strong internet network, and a willingness to be digitally literate were the right ways to master these changes. Apart from that, good cooperation between teachers, students, parents, and school management was a necessity that could support the success of online-based learning activities. The transition from offline learning to online-based learning, as well as the change towards hybrid learning, not only required increased technological skills but also required standardized facilities and networks. Table 2 below contains data on the digital learning transformation that occurred at the Riyadh Indonesian School.

Table 2 Digital-Based Learning Transformation in Schools

Source	Data	Coding
P1, P2	Improvement of Learning Management System (LMS)	Strengthening
P1, P2	Purchase of laptops and provision of standardized cellphones.	Provision of teacher technology

Source: Prepared by the author, (2024).

Figure 1a.

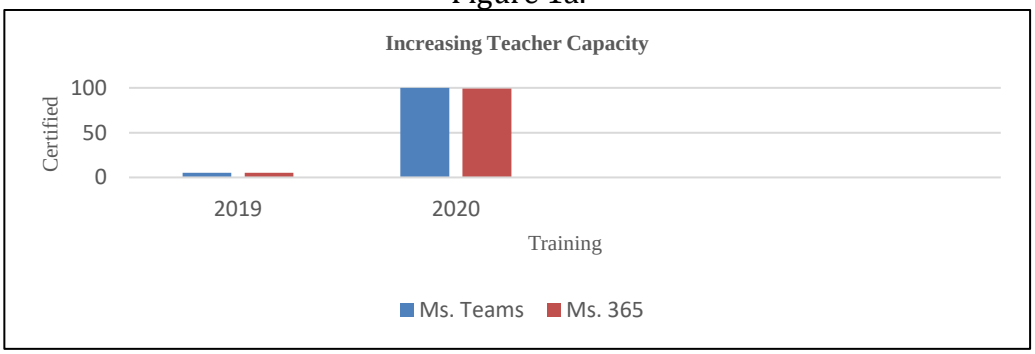
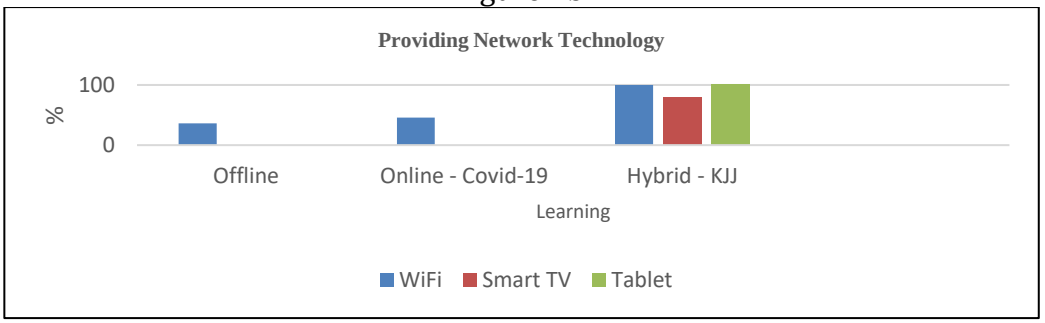


Figure 1b.



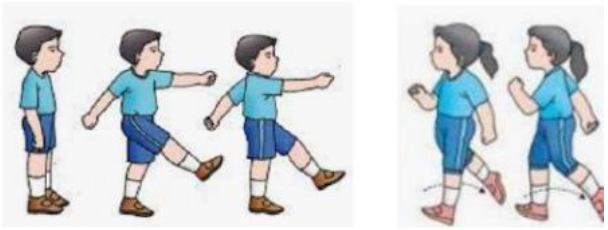
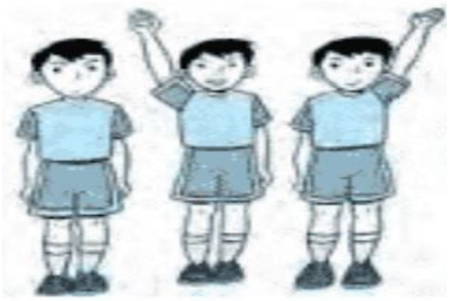
Data contained in Tables 2, Figure 1a, and 1b was an effort made by school management and teachers in order to meet the needs of changes that are occurring in schools. Improvements to the learning management system (LMS) refer to the needs

faced by teachers in ongoing learning. Providing network technology during offline learning, online learning – COVID-19, to hybrid–distance classes required different changes.

Teachers increased their capacity by participating in Ms. Teams and Ms. 365 which made teachers 100% certified and easy to absorb new applications needed in learning. In 2019, there were still limited teachers who could master Ms. software. Teams. A year later, in 2020 all teachers received Ms. training. Teams. Thus, this technological transformation was welcomed positively by increasing the capacity of teachers to adapt to the demands of digital-based education.

Increasing WiFi points, increasing the number of smartboards, and providing tablets in each class helps learning much better. Increasing WiFi points from 25% to 50%, to 100% was a very good push for change. Other supporting facilities such as SmartTVs and Tablets that were able to be prepared by schools which reached 80% and 106% were no small achievements in increasing the school's capacity to support learning. Teachers' awareness of upgrading their devices, whether in the form of laptops or cellphones, had a big influence on innovation in ongoing learning. All these changes had a positive impact on teachers and students. Learning innovation was a priority for teachers in digital-based learning. The shift from online learning to hybrid learning affected teachers in preparing for classroom learning. Table 3 provides information on what teachers did in classroom learning

Table 3. Digital-based Sports Learning Innovation

Source	Data	Coding
P1	Basic locomotor movements	 Walk forward – Walk Backward.
P1	Basic non-locomotor movements	

P1	Basic manipulative movements	
P1	Exercise	
P1	Physical fitness	
P1	Get to know body parts.	

Source: Prepared by the author, 2024

Digital-based sports learning innovations (Table 3) consist of basic locomotor movements, basic non-locomotor movements, basic manipulative movements, gymnastics, physical fitness, and getting to know body parts. In Table 3, the basic locomotor movements were that students carried out forward and backward movements. The basic non-locomotor movement was that students stopped and moved their right and left hands alternately. The function of basic non-locomotor movements was to measure stability. Basic manipulative movements were movement abilities carried out by students using objects or tools. Some of these movements were carried

out using a ball in soccer or volleyball. In Table 3, this basic movement showed students using a barrier to run through the barrier. Gymnastics, namely students doing gymnastic movements. In physical fitness, students carried out movements as physical fitness sports. Getting to know body parts, students were introduced to body parts to understand how to move appropriately and functionally.

This sports program was taught to regular students and distance learning students. The teacher taught regular classes, then the teacher focused on distance learning classes which were carried out via tablets that had been prepared by the school. Apart from distributing sports modules to students, teachers also guided distance learning students through assistance from students' guardians to prepare sufficient sports equipment at home or their respective study locations spread across various countries. This hybrid learning was quite effective for students with equal abilities in both regular and distance classes. The achievement of distance class students was also equivalent to regular classes. Even in several National Achievement Center competitions and other competitions, long-distance class students represented the school.

The sports teacher's strategy of dividing sports lesson opportunities into regular classes and distance classes is effective for all students. After regular students had finished taking sports lessons, they were asked to cool down and rest. Teachers used this opportunity to focus on remote classes. The sports movements that the researchers observed were carried out the same as in regular classes. Online students showed the tools that had been prepared by the student's guardian. This approach and method open up the same access and quality obtained by students. Perhaps in some types of more strenuous sports such as Pencak Silat (Tapak Suci), distance learners did not receive enough expert care if a wrong movement occurred. Teachers needed to explain to parents and guardians of students what treatments need to be prepared.

The shift from offline to online to hybrid learning had had a positive impact on the development of science, especially optimizing the use of technology in learning. Both teachers, students, and student guardians were an important and inseparable part of progress (Chiu, 2022; García-Morales et al., 2021). This transition also impacted the need for students, student guardians, and teachers to learn new technologies, new software, and new approaches (Ortan et al., 2021) (Ho et al., 2019; Wisetsat & Nuangchalerm, 2019) (Istiq'faroh, 2020). Schools provided sufficient time to explain to students' guardians and parents for both regular and distance classes regarding software and the use of digital-based technology. This change process was not without obstacles, because, both terms of capability and technology procurement, efforts should

be made to follow standards. School management should take an important role, considering that this shift should also be accompanied by improvements to the internet network in schools. The various components needed to fulfill this shift were points of change that were beneficial for various parties, especially students.

The use of technology in learning, which was new and occurred quickly, required sufficient time for various parties to digest it properly. However, this was not a problem that took a long time to find a solution. Both teachers, guardians, students, and school management were people who easily adapted to developments so that progress became easy to do and could be implemented (Al-Ansi et al., 2023) (Mhlongo et al., 2023; Songkram et al., 2023a) (Dwiprabowo et al., 2024). This change had also sparked the availability of technology that met standards for teachers, thus having an impact on the availability of technological equipment that supported teachers' efforts to innovate in classroom learning (George & Wooden, 2023; Selwyn et al., 2023) (Alexandro & Basrowi, 2024). The same thing also happened with the provision of an adequate internet network, so that online communication that took place in learning runs well and without problems.

Digital transformation was going well in schools. The increasing number of wifi networks, smart TV devices, and tablets empowered schools to carry out effective learning. The shift from offline-based learning, to online, to taking place in a hybrid manner, which was previously something that felt difficult to implement, was now changing with the ongoing changes. The desire to learn and develop following developments was a power in itself that supported effective learning (Crawford et al., 2023; Songkram et al., 2023b) (Oktradiksa et al., 2024). The close collaboration between teachers, guardians, students, and school management had produced results, namely improvements to the learning management system (Ashfaq et al., 2024; Rahmah Hafiz, 2024; Wael, 2024). The presence of change also motivated teachers to improve the quality of their abilities, namely through their participation in Ms. Teams and Ms. 365 to all certified teachers. This effort was certainly a very positive thing, especially in improving the quality of hybrid learning in the classroom.

Several previous studies stated that the impact of Computer Support Collaborative Learning (CSCL) in hybrid learning produced a positive impact for both regular and distance students (Crook, 2022b; Lämsä et al., 2021b; Muñoz-Carril et al., 2021b). The concept of technology-based collaboration was indeed something new, but it was a fun new experience for students because, in various learning activities, they not only interacted and collaborated with their classmates but also had the opportunity to

learn with friends from various regions and countries different at one time (Abuhassna et al., 2020; Janssen & Kirschner, 2020). This of course also strengthened the teacher's stimulus to balance technological abilities and the use of innovative methods in the classroom.

Sports learning innovations based on digital technology present challenges for teachers. Hybrid-based classroom management was certainly different from offline and online learning that had been implemented before. Innovation in classroom learning encouraged teachers to develop knowledge and use learning methods that were fun for students based on digital technology (Herodotou et al., 2019; Näykki et al., 2019). Hybrid-based learning was considered capable of improving students' critical thinking skills, apart from that, the approach implemented by teachers by applying game elements had a positive effect on students' activeness in learning in class (Arufe-Giráldez et al., 2022; Sulistyanto et al., 2023b). The teacher's efforts to innovate in the classroom not only made the atmosphere in the hybrid class fun but were also able to increase cooperation and good communication between regular students and distance classes.

Learning innovation was a necessity, especially in hybrid learning. The motto promoted by schools to present classes in remote classrooms or eliminate the barrier between regular students and remote classes encouraged teachers could balance their attention in class (Ferraz et al., 2024; Yu & Li, 2024). Sports learning which not only provided material in class but also practiced on the sports field was a challenge that the teacher could overcome well in enlivening the class atmosphere. Grade 1 students consisting of the 7-year age group had been able to follow and actively participate in learning activities. Of course, teacher success did not come suddenly but occurred because of good preparation in compiling learning modules, standardized network technology, good classroom management, and systemic communication with student guardians

CONCLUSION

This research produced findings that sports learning innovations based on digital technology have optimal impacts, especially in implementing hybrid learning which accommodated regular and distanced students. This illustrates that the teacher's ability to innovate made sports learning not only direct students to master sports learning theories, but also be able to optimally use digital applications both in the classroom and in the field. Based on this experience, students will feel a pleasant atmosphere in learning and have important experiences, that digital technology has a

positive influence on aspects of learning.

This research not only contained teacher innovation in digital-based sports learning but also provided information that the concept of computer-supported collaborative learning (CSCL) was an important concept that should be considered in the world of education. Every teacher was expected to utilize this concept so that learning can take place optimally. It was hoped that future research will be able to find a similar focus but expand the study to other classes and different subjects. Because the study in this research was limited to sports learning in grade 1 of elementary school, it is hoped that expanding the study will produce more diverse data. In general, this research is an important finding that teacher innovation in learning by using digital technology as the basis for its steps is a very important thing to implement.

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