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## NEEDS ANALYSIS OF DEVELOPMENT DIGITAL-BASED PHYSICAL FITNESS TEST APPLICATION

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### Abstract

This article aims to describe a needs analysis related to the development of a digital-based physical fitness test application. This physical fitness test application will later help physical education teachers to be able to evaluate the physical fitness of students. The target respondents in this study were students and physical education teachers in South Sumatra. The results showed that, from 115 respondents who filled out questionnaires distributed online via google form, it showed that 105 (91.30%) respondents had done physical fitness tests to students, 3 (2.61%) respondents had never, and 7 (6.09%) respondents answered maybe. And 103 (89.57%) respondents want the development of test and measurement applications related to physical fitness, 2 (1.74%) respondents think "no", and 10 (8.70%) respondents think "maybe". The conclusion of this study is the need for a digital-based physical fitness test and measurement application, either in the form of a website or mobile application.

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## INTRODUCTION

Technology has developed in various sectors, including education and learning. Technology is changing many things in schools, including physical education learning. (Juniu, 2011), argues that technology can help students experience physical education learning to change their inactive lifestyle into an active and physically fit lifestyle.

Technology is like two sides of a coin, there are contradictions regarding technology support for physical education teachers, because physical education teachers fail to provide arguments and concrete examples of technology support in physical education learning (Wyant & Baek, 2019). (Enright & Gard, 2016) states that there are concerns with the use of digital technology in physical education and how it can marginalize the role of physical education teachers.

Integrating technology can be more difficult in some school classrooms than in others. Physical education classes are an example of such a class. Another thing that (Mohnsen, 2012) points out in his book is that specific studies for technology in physical education have been limited and further research is urgently needed in this area. One of the main objectives of learning physical education is to improve and maintain the level of physical fitness of students. Teachers are required to be able to provide learning oriented to physical activity to support the fitness of the students.

Some technologies can be integrated into physical education classrooms, but physical education teachers have a hard time finding great technology that helps their students learn and at the same time doesn't distract from the lesson. But (Baek et al., 2018), reveals that the reason physical education teachers struggle to implement technology is access to technology is the lack of training and time to learn, and the perceived value of technology integration.

Physical Education teachers struggle to implement technology for a variety of reasons. (Wyant & Baek, 2019), explained the reasons teachers struggle to implement technology are as follows: technology is a distraction for students, teachers need more professional development, and technology can affect the timing and flow of lessons. Using the right technology, being trained properly, and planning lessons can help avoid these difficulties and enable teachers to apply technology to the classroom.

The purpose of this study was to determine the need for technology for physical education teachers to help manage learning. It is important to have technology in the physical education classroom because it motivates and energizes students and allows students to further connect the physical education classroom with the outside world, (McVicker, 2018).

## METHODS

This research is a survey research using a non-structural questionnaire

which has been prepared to be filled in by the research subjects. Eight questions were compiled in this research questionnaire to find out how big the need for physical fitness test applications with digital results.

**Table 1.** Questions on the questionnaire used

No.	Question
1	Do you know about the main duties of a Physical Education Teacher?
2	If you are a Prospective Physical Education Teacher/Teacher, are you sure you can become a good and right physical education teacher?
3	If you are a Prospective Teacher / Physical Education Teacher, do you know what will be evaluated for students?
4	One of the duties of a physical education teacher is to evaluate the physical fitness of students, have you ever conducted a physical fitness test on students?
5	What types of physical fitness tests do you use to evaluate the physical fitness of students?
6	With so many types of physical fitness tests, do you think standardization is needed in measuring the physical fitness of students?
7	In conducting the physical fitness test, is it necessary to have a supporting application (website and/or mobile application) that is used as a guide for the implementation of the physical fitness test?
8	If there is an application that supports physical fitness tests, are you willing to participate in socialization and training activities to use the application, and apply it to your students?

Purposive accidental sampling was applied to obtain research data with the research subjects being students and teachers of physical education in South Sumatra. The questionnaire was sent as a link via a google form with the link <https://forms.gle/eNNyyZEX7EVkFVvA6> conducted in August 2021. Participants in this study received information at the beginning of the questionnaire about the purpose of the survey and informed consent. Participants gave an assessment according to the actual situation, and they agreed to participate in this study. The average time needed to answer the questionnaire is five minutes. Statistical analysis used is descriptive data from the results of respondents' answers to the questionnaires that have been sent.

**Table 2.** Descriptive Characteristics of Respondents

Characteristics	Count	N (%)
Gender		
Man	86	74,78%
Woman	29	25,22%
Respondent Cluster		
Physical Education Student	107	93,04%
Physical Education Teacher	8	6,96%

## RESULTS

The research data are the results of answers from respondents who filled out a questionnaire sheet via google form on 29-31 August 2021. The results of the respondents' entries will later affect further research in the process of

developing physical fitness test applications. Table 1 shows the results of the respondents in this study.

**Table 3.** Results of Respondents

Do you know about the main duties of a Physical Education Teacher?	Jumlah	%
Yes	112	97,39%
No	0	0,00%
Maybe	3	2,61%
If you are a Prospective Physical Education Teacher/Teacher, are you sure you can become a good and right physical education teacher?	Jumlah	%
Yes	104	90,43%
No	0	0,00%
Maybe	11	9,57%
If you are a Prospective Teacher / Physical Education Teacher, do you know what will be evaluated for students?	Jumlah	%
Yes	111	96,52%
No	1	0,87%
Maybe	3	2,61%
One of the duties of a physical education teacher is to evaluate the physical fitness of students, have you ever conducted a physical fitness test on students?	Jumlah	%
Yes	105	91,30%
No	3	2,61%
Maybe	7	6,09%
What types of physical fitness tests do you use to evaluate the physical fitness of students?	Jumlah	%

Indonesian Physical Fitness Test (IPFT)	88	76,52%
Bleep Test/Pacer Run Test/Multistage Fitness Test/20-metret shuttle run test	22	19,13%
FitnessGram	5	4,35%
EuroFit	0	0,00%
What types of physical fitness tests do you use to evaluate the physical fitness of students?	Jumlah	%
Yes	103	89,57%
No	2	1,74%
Maybe	10	8,70%
If there is an application that supports physical fitness tests, are you willing to participate in socialization and training activities to use the application, and apply it to your students?	Jumlah	%
Ready	106	92,17%
No	0	0,00%
Maybe	9	7,83%

## DISCUSSION

The results showed that physical education teachers needed technology to assist their task in managing learning. One of the tasks that must be done by the teacher is to evaluate the learning outcomes of students. One that must be evaluated is related to physical fitness.

Physical education and fitness assessments offer learners the opportunity to assess, track, and improve their fitness levels. Physical education teachers can integrate physical fitness tests into instruction as a link between fitness, health, and physical activity. Sharing the results of individual student

assessments with parents can help increase parental awareness and involvement in the overall health of students.

Physical fitness is a person's ability to carry out activities regularly with enthusiasm and prudence, not to get tired easily, and still have sufficient energy reserves to enjoy free time and prepare for emergencies (Pangrazi & Beighle, 2016). Physical education teachers must not only have instructional strategies on fitness education, ways to identify students' physical fitness and activity achievements (Pangrazi et al., 2020), and communication tools to increase awareness and understanding of fitness education and its assessment process (Morgan et al., 2004), but also must have ways to evaluate students' physical fitness (Yildiz, 2013).

However, how is technology applied to physical education courses? This can actually be a huge advantage. Many middle and junior high school students, and in some cases, younger students, always carry a smartphone with them. This reality is part of today's evolving society which places great emphasis on connectivity. Learners often see mobile devices as extensions of themselves. Smartphone usage isn't going to diminish any time soon, so it makes sense to take advantage of the power of these devices.

Applications involving video and image analysis can be used to examine athletic movements (Pereira et al., 2014), and ultimately help improve physical skills (Hoyos Cillero & Jago, 2010). This

article shows that there is a need for technology to be applied in evaluating the physical fitness of students. With the right technology in evaluating physical education learning has changed the way we collect and evaluate data on individual students. Not only evaluate, but also provide feedback from daily activities. All of these activities can be carried out with the help of technological tools such as pedometers, smartwatches, and heart rate monitors which are increasingly being used (Craig et al., 2010). With this technology, students will be able to track and analyze their heart rate, activity level, or the number of steps they need to take within a certain time frame.

## CONCLUSION

The explosion of mobile technology has provided physical education teachers with many tools. There are many applications to take advantage of, with some allowing movement tracking and nutritional assistance, while others helping to improve physical activity or sport skills. We all know that the use of technology in learning is a big focus for schools. Physical fitness measurement applications will also provide many benefits, not only for physical education teachers, but also for students and parents. This is related to physical fitness data that can be stored on each student's smartphone. With this data, they can analyze each other's physical fitness and do some problem solving to maintain and improve their fitness level. The mindset that students have like that can be used

not only to improve their physical fitness, but can also provide lifelong lessons about being responsible for their own health. If we can get students excited about how technology can improve their health and well-being, then we've provided valuable lessons that will help them grow into adulthood. However, these results are not used as a comparison between students.

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