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Direct Instruction with Task Sheet-Based Learning Model: An Alternative Approach to Encourage Learning Motivation during the Covid-19 Crisis

Lutfi Nur
Universitas Pendidikan Indonesia, Bandung, Indonesia, *lutfinur@upi.edu*

Fan Hong
Bangor University, Bangor, United Kingdom, *h.fan@bangor.ac.uk*

Muchamad Arif Al Ardha
National Dong Hwa University, Taiwan, China, *muchamadalardha@unesa.ac.id*

Erick Burhaein
Universitas Ma'arif Nahdlatul Ulama Kebumen, Indonesia, *erick.burhaein@umnu.ac.id*

Arief Abdul Malik
Universitas Siliwangi, Tasikmalaya, Indonesia, *arief.abdulmalik@unsil.ac.id*

The transformation of physical education learning into online learning during the covid-19 pandemic impacts student participation in learning, requiring new techniques that might motivate students to engage in online learning activities. This research investigates the effectiveness of using a task sheet-based direct instruction learning model to increase elementary school students' physical education learning motivation. Experimental research with a pretest-posttest group design was employed in this research. Twenty-four fifth-grade students (16 male and eight female students) were employed in this research. They were grouped into two groups, the experimental and the control group. The research instrument used in this research was Elementary School Students' Learning Motivation Instruments in Physical Education to measure students' learning motivation levels. The data obtained were analyzed using a t-test. The results of this research revealed a significant effect of applying the task sheet-based direct instruction learning model to increase students' motivation in learning physical education in elementary schools. In this study, the researchers concluded that applying the task sheet-based direct instruction learning model was more effective in developing elementary school students' motivation than the conventional learning model in physical education learning. The use of Task Sheet-based Direct Instruction learning model can be used as an alternative for teachers in teaching physical education at elementary schools, both in online and offline learning.

Keywords: direct instruction, task sheet, motivation, physical education, learning

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INTRODUCTION

A challenge in teaching and learning during the covid-19 crisis is that almost all the learning activities are conducted online (Mishra et al., 2020). After the covid-19 crisis, the learning activities are done offline by implementing health protocols following the conditions of the school environment (Kwon et al., 2021). Rapanta et al. (2020) mentioned that the significant challenge in online learning during the pandemic is pedagogical content knowledge (PCK) which covers the pedagogical foundations and knowledge about the principles needed to design and facilitate meaningful online learning. Other research indicates that pre-service teachers are unfamiliar with learning shifts during the Covid-19 pandemic, which hinders their capacity to exert influence in physical education learning, where physical contact between teachers and students was formerly commonplace (Varea et al., 2020). In addition, other studies indicate that a unique approach is required for dealing with changes in learning, particularly in physical education learning, because of the Covid-19 pandemic and that teachers must be prepared to deal with the problems that arise both during and after the pandemic (Howley, 2021). Besides, physical education learning, which 70-90% is a practical activity in the field, either in the form of individual exercises or group games which are usually carried out in school with joy, must be able to adapt to learning at home. This is a special concern for teachers and parents, especially in the development of students. When learning is carried out at school, students' extrinsic motivation indirectly appears when they see their friends playing and there is an interaction between individuals and groups in the classroom (Yli-Piipari et al., 2012). However, when students currently carry out learning activities at home independently, there is a tendency for students to be unmotivated which has an impact on the lack of activities carried out (Bronikowska et al., 2021).

The learning process will be meaningless and ineffective without the motivation to learn from students (Ahmad et al., 2015). Motivation is a dynamic force to encourage someone to keep working and learning (Nur et al., 2022; Solichin et al., 2021; Zepeda et al., 2015). Previous research has shown that low-achieving students can improve their learning and academic achievement, as long as they are taught using a variety of creative strategies, accompanied by an innovative and comprehensive teaching approach so that they are motivated to participate in learning (Ahmad et al., 2015; Obiosa, 2020). Furthermore, previous research revealed that for elementary school students, motivation plays an important role compared to other learning levels because young students need to be motivated to learn when they experience new knowledge, especially in this particular condition, during the pandemic, or after the pandemic situation (Abbas & Khurshid, 2013). Thus, the combination of the appropriate learning model and teacher creativity is needed to be able to optimize the learning process during the pandemic, where most activities are carried out online, and after the pandemic by involving students in a face-to-face class with a limited capacity (50% of a total number of students) or later when the teaching and learning process is conducted 100% offline at school.

A learning model is a method used by teachers to transfer knowledge, skills, and attitudes to students. The application of the right learning model can optimize student understanding and work processes (Metzler, 2017). The direct instruction (DI) learning model has a teacher-centered tendency, where the direct instruction learning model activity is not carried out based on the student's initiative but involves a repetitive movement (drill). The direct instruction model can be regarded as a conventional method that is often used by teachers at schools. Although this model has several weaknesses, such as repetition drills leading to students' boredom (Calderón, Martínez de Ojeda, and Hastie, 2013). The model effectively improves the abilities of students who are weak in motor skills and movement activities because children experience more practice and become familiar with physical activities (Rocamora et al., 2019). In addition, applying the DI model can stimulate the automation of motion, which can help the development of children's movements (Brian & Taunton, 2017). Previous research revealed that the advantage of this model is to encourage students to be proficient in mastering basic techniques before performing a real game (Harvey et al., 2015). In addition, this model is also suitable to increase muscle strength and physical fitness of athletes (Bedard et al., 2018).

The adaptation process from offline learning to online has impacted teachers in implementing appropriate learning strategies and models. The direct instruction learning model can be used as an alternative in teaching physical education learning online at home because it can be done individually unlike other learning models that require partners in groups such as the cooperative model, Teaching Games for Understanding (TGfU), Sports Education Model (SEM), etc. However, the obstacle faced when teachers apply the direct instruction online learning model is the active participation of students. Deenihan & Macphail (2013) explained that a learning model is designed to stimulate students' active participation in the physical education learning process in the school environment so that many benefits can be achieved by students. Therefore, it is necessary to have an alternative strategy provided by the teacher to increase the active participation of students in carrying out the assigned motion task activities.

Previous research revealed that the use of the Direct Instruction learning model combined with Flashcards and Math Racetrack can improve student learning outcomes with special needs which indirectly increases their learning motivation (Karnes et al., 2021). Another study revealed that the Direct Instruction (DI) learning model has been proven in improving various basic techniques in sports, such as improving basic dribbling techniques in football games for the extracurricular activity of elementary school students (Tarigan et al., 2021), in Handball (Rocamora et al., 2019), and improvement of fundamental motor skills in early childhood (Brian & Taunton, 2017). However, there are still few studies that examine the effect of the DI model in increasing students' learning motivation.

Regarding motivation, several previous studies demonstrated that a task-involving motivational climate, which is a teaching structure that supports effort and cooperation as well as emphasizes learning and self-evaluation criteria, has a positive relationship to enjoyment in Physical Education learning and to increase perceived physical

competence (Grstén et al., 2012), and to increase students' intrinsic motivation (Rokka et al., 2019), so that the application of the DI learning modality is likely to increase students' intrinsic motivation. Therefore, the purpose of this study is to investigate the effectiveness of the use of a task sheet-based direct instruction learning model in increasing students' learning motivation in learning physical education at elementary schools.

The novelty of this study is that the researcher seeks to synergize the direct instruction (DI) learning model with a task sheet that serves as a guide in carrying out physical activities at home (when learning is online) and at school (when learning is offline). Furthermore, with this worksheet, parents can participate in monitoring and observing the development of their children directly. In addition, the use of this task sheet can motivate students to carry out physical activities provided by the teacher accompanied by parents at home.

METHOD

The research method used in this study was the experimental method. A foundational assumption of experimental research relies on the main goal of the research, which in this study, the goal is to find out the effectiveness of Direct Instruction with a task sheet-based learning model to improve students' motivation in learning physical education at elementary school. This research employed quasi-experimental research with a pretest-posttest group design by comparing experimental and control groups (Fraenkel et al., 2012)

The research participants in this study were 24 fifth graders of elementary school students which involves 16 male students and 8 female students. The research participants were grouped into two groups, meaning there were 12 students in each group. The experimental group was given a treatment using direct instruction with a task sheet-based learning model, while the control group was taught using the conventional learning model. The task sheet-based learning model consists of two parts, activity and assessment guidelines shown in figure 1 and task sheet activity carried out by the students as shown in figure 2.

No	Activity	Repetition	Reference value	Movement Example
1.	Doing push-ups	Doing 5x push-ups in 1 set, rest breaks are adjusted according to ability.	4 set = ✪✪✪✪✪ 3 set = ✪✪✪✪ 2 set = ✪✪✪ 1 set = ✪✪ < 1 set = ✪	bit.ly/contoh push-up
etc				

Figure 1
Student task sheet activity guideline

Name	:	.....
Class	:	.....

No	Activity	Score	Activity proof
1	Doing push-ups	✪✪✪✪✪	youtube.com/video or sent to WA/ gform
etc.			

Figure 2
Student task sheet activities

The description of the student task sheet activity guidelines as shown in Figure 1 is used by teachers and parents as a reference in giving assessments and choosing the movements that students can perform. It allows parents to observe their child's progress while learning at home. Meanwhile, figure 2 shows a student's Task Sheet activity report that can be completed with video as evidence of students' practice. The videos could be submitted to the teachers by sending them to WhatsApp groups that have been created or by uploading the videos on other social media platforms. For the activity conducted in the offline classroom at school, the video uploading could be changed with the teacher's sign-off as student task performance evidence.

The instrument used in this study was Elementary School Students' Learning Motivation Instruments in Physical Education with Cronbach's Alpha 0.87 value (Nur et al., 2021). This instrument comprises 46 questions with "yes" and "no" answer options, including questions regarding perseverance in learning, tenacity in the face of challenges, interest and focus in learning, achievement in learning, and independence in learning. After the data were obtained, data normality and homogeneity test were conducted. Then, the data were analyzed through a t-test using SPSS version 21 software to determine the effectiveness of the Direct Instruction with Task Sheet Based Learning Model.

FINDINGS AND DISCUSSION

This research aims at investigating the effectiveness of Direct Instruction with the Task Sheet-based learning model towards elementary students' improvement in learning motivation. The following table 1 shows the learning motivation of students in the experimental and control group.

Table 1
Data on learning motivation derived from the students

Group	Pretest		Posttest		Gain Score	
	Mean	SD	Mean	SD	Mean	SD
Experimental	21.00	3.84	24.58	4.06	3.58	2.47
Control	19.42	2.94	20.50	1.88	1.08	2.61

Table 1 shows that both groups experienced an increase in student motivation as seen in the average gain score of the experimental group of 3.58 with an SD of 2.47 and the control group of 1.08 with an SD of 2.61. Furthermore, the data were tested for analysis prerequisites with normality tests and homogeneity tests as shown in table 2 and table 3.

Table 2
Data on learning motivation derived from the students

		Experimental Group		Control Group		Gain Score	
		Pretest	Posttest	Pretest	Posttest	Experimental	Control
N		12	12	12	12	12	12
Most Extreme Differences	Absolute	.167	.224	.162	.204	.323	.154
	Positive	.134	.152	.128	.204	.323	.113
	Negative	-.167	-.224	-.162	-.188	-.177	-.154
Kolmogorov-Smirnov Z		.577	.777	.561	.706	1.118	.533
Asymp. Sig. (2-tailed)		.893	.582	.911	.701	.164	.939

Table 2 shows the results of the data normality test which shows all the Asymp results. Sig. (2-tailed) > 0.05 which means that the data is normally distributed. Furthermore, table 3 shows the results of the homogeneity test of the data with the value of Sig. 0.892 > 0.05 which means the data is homogeneous.

Table 3
Data homogeneity test results

	Levene's Test for Equality of Variances	
	F	Sig.
Motivation Equal variances assumed Equal variances not assumed	.019	.892

After knowing that the data is normally distributed and homogeneous, then the hypothesis is tested using the paired sample t-test and the independent sample t-test. The results of the hypothesis testing carried out are shown in table 4 and table 5.

Table 4
Paired sample test results

	Paired Differences					t	df	Sig. (2-tailed)
Group	Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
				Lower	Upper			
Experimental	3.58333	2.46644	.71200	2.01623	5.15044	5.033	11	.000
Control	1.08333	2.60971	.75336	-.57480	2.74147	1.438	11	.178

In table 4 it can be seen that the results of the paired sample t-test in the experimental group obtained the results of Sig. (2-tailed) of 0.000 <0.05 which means that there is a significant increase in the results of student motivation. While in the control group, the

results of Sig. (2-tailed) of 0.178 > 0.05 which means that there is no significant increase in the results of students' learning motivation. Table 5 shows the results of the Independent Sample T-Test which tested the differences in the acquisition of students' learning motivation between the experimental and control groups. Based on the results shown in table 5, it is obtained information that the value of Sig. (2-tailed) of 0.025 < 0.05 which means that there is a significant difference between the two groups being compared. In this case, it means that the Task Sheet-based Direct Instruction learning model is more effective than the conventional learning model in developing students' learning motivation.

Table 5
Independent sample test results

		t-test for Equality of Means						
		t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
							Lower	Upper
Motivation	Equal variance assumed	2.412	22	.025	2.50000	1.03658	.35027	4.64973
	Equal variance not assumed	2.412	21.930	.025	2.50000	1.03658	.34987	4.65013

The researcher found out that when students were given the Task Sheet-based Direct Instruction Learning model, students could choose physical activities or skill-strengthening activities that matched their abilities. The selection of physical fitness tends to be students' favorite because it does not require special equipment or tools to be done at home. In addition, the lack of sports facilities such as balls, bats, or other sports equipment at their home enables them to produce their DIY equipment. This of course can foster their creativity such as making balls from wads of paper and folding clothes into round shape so it resembles a ball. However, there are still some students who use plastic balls that are easily purchased at sports equipment stores or toy stores around their homes. Of course, it is interesting to examine students' creativity during the implementation of this learning model in further research.

Another finding revealed that when learning can be conducted offline with limited capacity (50%) at school, students will be familiar with the same activities they did at home and tend to have good self-confidence. Furthermore, with the use of the Task Sheet, students are challenged or motivated to be able to carry out the movement tasks listed in the task sheet because of adequate facilities and infrastructure at school compared to the facilities at home. On the other hand, students with conventional learning only focus on movement training tasks as exemplified by the teacher by using repetition and giving movement demonstrations to gain movement skills, but this

activity seems monotonous. This is in line with the previous research result that claimed conventional learning tends to be monotonous and less motivating for students (Lye & Kawabata, 2021; Nur et al., 2021).

The use of a task sheet can provide a stimulus to motivate children to move according to the motion task they want to do. In addition, when the use of the task sheet is conducted in the form of a competition, students will consider that it is challenging to complete the existing motion task. Student motivation arises apart from external encouragement in the form of competition but is also intrinsically motivated to be able to find out how far the skills (movement tasks) they can do. The results of the previous studies have shown that fun experiences during physical education learning can transfer intrinsic motivation into student activity participation (Baena-Extremera et al, 2015). The results of another study revealed that there was a significant relationship between Task-involving motivational climate with enjoyment in learning and students' intrinsic motivation for female and male students was associated with total Moderate to Vigorous Physical Activity (MVPA) (Gråstén & Watt, 2017).

This research gives a meaningful contribution to the implementation of the learning process at schools, by providing new ideas to implement the teaching process during and after the Covid-19 pandemic. In general, although the direct instruction learning model emphasizes the skills and knowledge aspects, when combined with the use of the Task Sheet, it can provide more stimulus in motivating students to be active in learning by determining the movement activities in the Task Sheet. Besides, the direct instruction learning model is the best way to teach when the learning materials have a hierarchical structure, basic skill oriented, and when learning efficiency becomes a concern (Pereira et al., 2015; Smith et al., 2015). Supporting this research, the previous research findings revealed that the application of direct instruction combined with other methods such as mobile augmented reality can stimulate the development of student motivation (Buchori et al., 2017).

CONCLUSION

This study concluded that the use of Direct Instruction with a Task Sheet-based learning model is more effective to improve students' learning motivation in elementary schools, compared to the conventional learning model. The use of a task sheet-based learning model not only can motivate the students to perform motion practice but also gives an alternative for students in choosing the appropriate motion practice they are capable of. Thus, it rises students' confidence to perform the task. The implementation of a new approach before and after the Covid-19 pandemic might be the biggest challenge for a teacher to encounter. Therefore, the combination of this learning model can be implemented as an alternative solution for a teacher to give the learning both in an online and offline classroom.

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