



ORIGINAL SCIENTIFIC ARTICLE

DISTANCE LEARNING: DOES IT HAVE AN IMPACT ON THE READINESS OF PHYSICAL EDUCATION TEACHERS IN COASTAL AREAS?

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Abstract

Study purpose. The purpose of this study was to determine whether there is an effect of distance learning on the readiness of physical education teachers in coastal areas.

Materials and methods. This study used an experimental method with one group pre-test-post-test design. The research participants were physical education teachers in junior high schools in coastal areas ($n = 60$). Primary data collection to measure teacher readiness was the Online Teaching Readiness Survey consisting of 41 questions with a validity level of 0.76 and a reliability of 0.91. Secondary data collection was performed using literature study.

Results. The results of the paired sample t-test showed $0.754 > 0.01$, indicating the data variance was the same. By looking at the assumed equal variances, the significance result shows that $0.000 < 0.01$ (confidence interval = 99%), then H_0 is rejected. Based on the data, there are 10 teachers or 16% who are ready to carry out distance learning, 36 teachers or 60% are not ready, and 14 teachers or 24% are unprepared.

Conclusions. There is an impact of distance learning on the readiness of PE teachers in coastal areas. The effect in question shows the unpreparedness of PE teachers in implementing distance learning. The recommendation from the findings is that teachers need virtual learning training and adequate support to succeed in distance learning.

Keywords: physical education, coastal areas, distance learning, readiness, teaching.

Introduction

In the Special Province of Yogyakarta, there are 3 regencies with coastal areas, namely Gunungkidul with 8 coastal villages, Kulonprogo there are 4 coastal areas and Bantul has 2 coastal area (Khakhim et al., 2021). Coastal areas are identical with limited educational infrastructure, especially in implementing distance learning due to the COVID-19 pandemic (Nurhayati, Aisah & Supriatna, 2020). Qualified human resources and technology are needed for the smooth running of distance learning programs. For this reason, it is important to know the readiness of each region in implementing distance learning, including in coastal areas. The

Indonesian government itself has officially determined that education is carried out by distance learning (Kemendikbud, 2020). Teachers are faced with the reality of adapting teaching in a short period of time regardless of their readiness.

For physical education (PE) teachers who teach physical activity, the virtual teaching burden becomes greater (González-Calvo et al., 2020). PE lessons are identical to direct teaching, namely by physical interaction within the framework of physical activity between teachers and students (Koutaya, 2020). Indeed, this condition is a challenge for both teachers and students in carrying out the new order of education (Burki, 2020). But the obstacles faced are certainly very large related to the readiness of teachers to implement virtual learning. So it is very necessary to see how prepared teachers are in carrying out distance learning, especially in coastal areas with limited infrastructure and other factors that do not support. Based on this, PE teach-

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ers need to have the readiness of both technology and new competencies to face distance learning (Hortigüela-Alcalá, Hernando-Garijo & Pérez-Pueyo, 2021).

For the implementation of distance learning, the problems that arise are not only related to “unusual” learning, but also technical matters such as teachers who are not prepared when dealing with educational technology and servers that are overwhelmed when study hours are at peak load so that access becomes difficult. slow. Not to mention the element of motion that must be considered and corrected directly by the teacher becomes constrained because it has to go through technology first (Calabuig-Moreno et al., 2020). PE becomes a complicated lesson when run remotely even with the help of technology (Kirk, 2020). This condition will certainly make it difficult to acquire basic skills and good physical fitness as the goal of PE, lifelong fitness (Hordvik, MacPhail & Ronglan, 2019). However, distance learning will not run optimally, especially in the development of motor aspects which is the main domain of PE (Richards et al., 2020). Learning objectives have experienced a shift from the motor domain to the cognitive domain (MacPhail & Lawson, 2020). In the aspect of PE facilities as learning support it is impossible for each individual to provide (Azhari & Fajri, 2021).

Because to be able to carry out distance learning requires qualified supporting facilities (Schneider & Council, 2021). Good learning should provide adequate learning facilities, both study rooms, lighting, and complete equipment (Crawford et al., 2020). So in this case, distance learning facilities are everything that should be available. However, not all areas have adequate facilities, including in coastal areas (Samadi & Lestariningsih, 2018). This is supported by the survey results that 29% of the Indonesian population does not have a mobile phone. As many as 28% of the population have ordinary cellphones but cannot support the implementation of e-learning, and only 42% have smartphones (Koesnandar, 2020). The problem of lack of electronic device ownership facilities for e-learning was also reported to be only 40.5% (Kemendikbud, 2020). With many learning barriers, especially in the application of learning applications such as zoom, google class, google meet, of course the disadvantaged are the students (Adedoyin & Soykan, 2020; Alea et al., 2020).

Coastal areas that are far from the city center and far from the reach of provider networks will certainly be hampered in learning (Firman & Rahayu, 2020; Rashid et al., 2020). This problem is experienced by many teachers who are in coastal areas. Thus learning activities do not run smoothly (Moorhouse, 2020). According to Burges' concentric theory of urban spatial structure, the coastal area is an area along the coast which is the center of fishery, production, service activities and not as an educational area (Wirawan & Tambunan, 2018). By paying attention to the theory of urban spatial structure, it can be understood that access to education in coastal areas is much different from that in downtown areas. In this study, the coastal areas referred to are districts located on the coast and far from access to the city center.

Materials and methods

Participants

The research participants were 60 PE teachers from junior high schools who carried out distance learning in coastal

areas with details of 30 teachers from Gunungkidul Regency, 20 teachers from Kulonprogo Regency and 10 teachers from Bantul Regency. All teachers are members of teacher associations in each district. The research sample was selected by cluster random sampling. The experimental test of the implementation of distance learning will be carried out in February-July 2021 (Table 1).

Table 1. Distance learning intervention activities in experimental test

Session	Variable	PE Scope	Materials	Platform
1			Pretest	
1	Readiness	Gymnastics	Floor exercise	Zoom
2	Readiness	Game	Soccer	Zoom
3	Readiness	Athletics	Long jump	Zoom
4	Readiness	Rhythmic gymnastics	Aerobic gymnastics	Zoom
5	Readiness	Development activities	Physical fitness	Zoom
6	Readiness	Aquatic	Breaststroke swimming	Google meeting
7	Readiness	Martial arts	Pencak silat	Google meeting
8	Readiness	Health	Personal health	Google meeting
9	Readiness	Game	Basketball	Google meeting
10	Readiness	Athletics	Relay run	Google meeting
2			Posttest	

Research design

The research design used was an experimental one group pre-test & post-test without a control group. The intervention provided was in the form of distance learning for junior high school PE materials for 12 weeks. The instrument used to measure teacher readiness is the Readiness for Online Teaching Survey which consists of 41 questions with a validity level of 0.76 and a reliability of 0.91. Table 2 shows the research design and intervention.

Table 2. Research designs and intervention

Experiment	Paired sample t-test
Pre-test	Questionnaire with 41 questions
Intervention	12 weeks distance learning
Post-test	Questionnaire with 41 questions
Participants	30 coastal PE teachers from Gunungkidul Regency 20 coastal PE teachers from Kulonprogo Regency 10 coastal PE teachers from Bantul Regency

Data Collection

Collecting data in the form of a questionnaire as the main data and literature study as secondary data. The data collection procedure is by selecting PE subject matter in the

Table 3. Teacher readiness questionnaire in distance learning

Variable	Factor	Indicator
Readiness	Technical skills	Skills to use internet network
		Skills in using software and applications
		Skills in using social networks such as twitter, facebook
		Skills in using learning platforms such as zoom, google.
	Experience with teaching and distance learning	Distance learning planning skills
		Distance learning management skills
		Distance learning assessment skills
	Attitude towards distance learning	Attitude of trust towards the success of distance learning
		Provide support for the continuation of distance learning
		Get comfortable with distance learning
	Time management and time commitment	Time management skills
		Time commitment skills

8th grade junior high school curriculum taught in the zoom meeting or google meeting. Furthermore, the researchers conducted a trial of PE subject matter to non-respondents and corrected invalid instruments. These interventions include: (1) Giving directions to the teacher for filling out the questionnaire; (2) Measurement of the initial test of teacher readiness for approximately 30 minutes. (3) Implement distance learning for 12 weeks. (4) Measurement of the final test of teacher readiness for 30 minutes. The teacher readiness questionnaires are as follows (Table 3).

Data analysis

Analysis of the data with paired sample t-test to see the difference between the results of the initial test score and the final test score through the significance value on the t-test, prerequisite tests in the form of normality and homogeneity tests, and hypothesis testing.

Results

This research was conducted during February – August 2021 involving 60 participants from three districts in the coastal area consists of 38 male and 22 female teachers (Table 4).

Table 4. Data on the distribution of PE teachers in coastal areas

No	Regency	Male	Female	Total
1	Gunungkidul	20	10	30
2	Kulonprogo	12	8	20
3	Bantul	6	4	10
N		38	22	60

This study uses an experimental method on teachers in coastal areas with an intervention in the form of distance learning PE subject matter for eighth grade junior high school students. Table 5 displays the results of the mean scores of the initial and final tests. The teacher's readiness before being given the intervention showed 5.4 or the low

category and the average teacher readiness after the intervention was 6.8 or the medium category. Increased teacher readiness in distance learning by 1.4 or 20.1%.

Table 5. The mean score and significance of teacher readiness in coastal areas

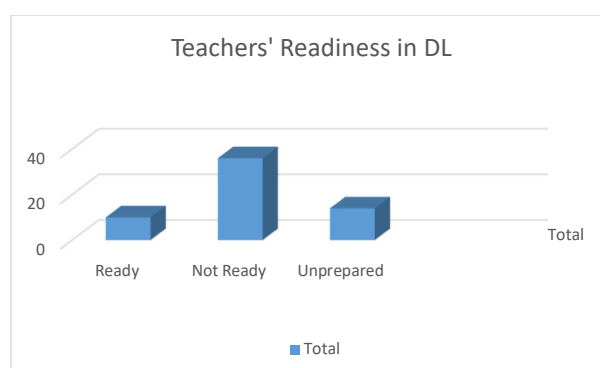
Group	Pre-test	Post-test
	Mean score	Mean score
Coastal	5.4*	6.8*

*p < 0.5 (significantly different); **p < 0.1 (very significantly different)

Based on the data in Table 6, there are 10 teachers who are ready to carry out distance learning or 16%, 36 teachers are not ready or 60%, and 14 teachers are unprepared or 24%.

Table 6. Categorization of teacher readiness for distance learning

No	Category	Criteria	Total	Percentage
1	Ready	150-175	10	16%
2	Not ready	90-149	36	60%
3	Unprepared	< 90	14	24%
N			60	

**Fig. 1.** Categorization of teacher readiness for distance learning

Hypothesis testing

The hypothesis formulated in this research is: H0: There is no impact of distance learning on the final score of teacher readiness in coastal areas. H1: There is an impact of distance learning on the final score of teacher readiness in coastal areas. In Table 7, the results of the paired sample hypothesis test show $0.754 > 0.01$, then the variance of the data is assumed to be the same. The next step is to see how the paired sample t-test can answer the formulated hypothesis. By looking at the equal variances assumed, the significance results show that $0.000 < 0.01$ (confidence interval = 99%) then H0 is rejected. Thus it is proven that there is an impact of distance learning on teacher readiness in coastal areas.

Table 7. Analysis of paired sample test results

		Paired Differences			t	df	Sig. (2-tailed)
		Mean	SD	SE			
Pair 1	Pre test-post test Coastal	-7.137	5.385	0.983	-7.540	59	0.000

SD = Standart Deviasi, SE = Standart Error of Mean

Normality test

The results of the Kolmogorov-Smirnov Test distribution showed a significance of $0.541 > 0.005$ and $0.0577 > 0.05$ so that the data variance was declared normally distributed (Table 8).

Table 8. Normality test results

Experiment group	Kolmogorov-Smirnov Test	P-value	Distribution
Coastal Pre	0.541	>0.05	Normal
Coastal Post	0.577	>0.05	Normal

Homogeneity test

The results of the Levene test distribution show a significance of $0.540 > 0.05$ and $0.612 > 0.05$ so that the data variance is assumed to be homogeneously distributed (Table 8).

Table 9. Homogeneity test result

Experiment group	Levene Statistic	Probability	Varian
Coastal Pre	0.540	>0.05	Homogen
Coastal Post	0.612	>0.05	Homogen

Discussion

The main objective of this study was to determine the impact of a 12-week distance learning intervention on PE lessons. The intervention was in the form of PE subject matter consisting of floor exercise, soccer, basketball, long jump, aerobic exercise, physical fitness, breaststroke swimming, Pencak silat, and personal health. This material is in accordance with the curriculum used for junior high school students (Richards et al., 2020). The results of this study support the hypothesis that there is an impact of distance learning on teacher readiness in coastal areas. These results are consistent with research on teacher readiness which is influenced by regional structure (Manasia, Ianos & Chicioreanu, 2020).

Teacher readiness is also influenced by the competencies they have whether they have updated their knowledge or not (Tyan, Rahman & Sarvestani, 2020). Do you often attend training related to virtual learning or not. In addition, achieving PE goals is also influenced by the availability of supporting sports facilities (Barney & Kahaialii, 2020). The distance learning that is currently being carried out is hampering the achievement of the PE goals. Because it has traditionally been considered a practical and "direct" lesson in schools, where closeness and physical contact are common between teachers and students, so learning becomes more alive (Jeong & So, 2020). Meanwhile, distance learning in PE lessons is actually constrained by the presence of technology (Fernández & Espada, 2021).

The impact of distance learning on the readiness of PE teachers in coastal areas can be seen at least in four aspects of readiness, namely: technical skills of teachers in using technology, teaching experience of teachers in distance learning, attitudes towards distance learning, and management & time commitment (Welsh & Swain, 2020). In the aspect of teacher technical skills, it was found that most of the teachers did not have technical skills in using technology to support distance learning. Some steps that have been taken by the school is to provide training in the use of technology. However, the training is considered less effective. Most of the respondents felt that the training carried out in schools did not go well. The impact of this is that the training is not able to improve the skills of teachers in using various media that support distance learning, so that it also has an impact on student ignorance. Another fact is that most of the coastal areas have not been reached by telecommunications providers so that distance learning is not fully implemented (Warren & Venzant, 2020). The implementation of learning runs less than optimally due to the non-functioning of the teacher's role as an instructor in directing the movement functions of students (Alea et al., 2020). So that the development of motion or physical activity becomes complicated because there is no role model. Another finding is that not all teachers and students have learning technology devices such as smartphones, PCs, or laptops, including internet networks. It is undeniable that there are teachers who have not been able to utilize learning media or learning platforms properly (Kok et al., 2020). Judging from the competence of teacher graduates in coastal areas, the average status of graduates is undergraduate.

In the aspect of teaching experience, it was found that almost all of the respondents did not have distance teaching experience. So that distance learning is something that is completely new and has almost never been done before (Legowo et al., 2019; Abidin, Hudaya & Anjani, 2020). Moreover, PE lessons are full of motor and physical functions that require special attention in teaching practice (Muhtar & Dalyono, 2020). This is in line with the expert opinion that PE lessons are lessons that traditionally have direct closeness between teachers and students (McEvilly, 2022). Teachers in coastal areas are accustomed to teaching PE with direct practice without the help of learning technology. This direct learning model is preferred by teachers to virtual learning. Another finding shows that teachers lack confidence in conveying emotional expressions in virtual media so that the message that will be conveyed to students does not arrive (Irmansyah et al., 2021). This low self-confidence interferes

with teachers in interacting with students virtually so that it can affect the learning process (Fiorilli et al., 2020; Nolan & Molla, 2017).

In the aspect of teachers' attitudes towards distance learning, it was found that most of the teachers had a flat attitude and even tended to be less cooperative (Susanto, Sukoco & Suharjana, 2020). This is reflected in the lack of learning platforms used, apart from using the zoom platform and google meeting, teachers only rely on giving assignments via messages on WhatsApp. The ability of teachers to have the initiative to take responsibility for their work or duties is still relatively low. In other words, aspects of awareness, teaching strategies, evaluation, and interpersonal skills are still low. In this study, it was found that the teacher's attitude was a weak indicator that affected the distance learning process. It is undeniable that teachers in teaching need complete and honest feedback from students, which is not found during distance learning (Pribudhiana, Bin Don & Bin Yusof, 2021; Savolainen, Malinen & Schwab, 2020).

In the aspect of management and time commitment, there are several indicators that show the weak commitment of teachers in managing time because they have to teach from home, are distracted by other online activities, do not have optimism in using virtual learning applications, and are unable to enjoy new challenges at work. In other words, teachers are not ready for the new order of education (Zhang & Sun, 2020). This aspect also contributes to the low readiness of teachers in implementing distance learning.

Researchers also analyzed teacher readiness related to four teacher competencies, namely: pedagogy, professional, social, and personality. Teacher readiness in pedagogic competence is readiness in terms of teacher abilities or skills in managing the learning process or teaching and learning interactions occur with students (Adrian & Agustina, 2019; Deligiannidou et al., 2020). Readiness in the pedagogical competence of teachers in coastal areas should appear in the ability of teachers to explain the material, implement learning methods, ask questions, answer questions, manage classes, and carry out structured and responsible learning evaluations. However, this has not been seen during the distance learning process.

Teacher readiness in professional competence is readiness in terms of skills, abilities, knowledge and skills possessed by an educator, teacher, student mentor in the teaching and learning process (Chiva-Bartoll, Capella-Peris & Salvador-García, 2020; Fachrurrazi, 2017). Groups of teachers in coastal areas do not yet have professional competence in terms of mastery of PE material, mastery of other science materials, and linkages with the subject matter of certain subjects. For example, a teacher who teaches the subject of gymnastics is not enough to master material related to basic gymnastic skills, but also has to master and understand the rules of the games (Susanto et al., 2021). It seems that there are still few teachers who improve their scientific material, related to physical education material and sports science (Raibowo, Nopiyanto & Muna, 2019). So that the professional competence of teachers in coastal areas is still stagnant.

Teacher readiness related to social competence is the readiness of teachers in terms of individual abilities to work together, build social interactions with the surrounding environment by using knowledge and being able to communicate well with empathy (Mustofa, 2020; Flory & Wylie,

2019). The readiness of the social competence of teachers in coastal areas is shown in terms of the position of the teacher who is still an elite figure in the community who is considered to have considerable moral authority. One consequence of this role is that teachers are trusted in their environment (Cheung & Lee, 2010). Of course this is a plus for the social competence of teachers in coastal areas.

Teacher readiness related to personality competence is personal readiness that reflects a steady, stable, mature, authoritative, exemplary, and noble personality (Meilia & Murdiana, 2019; Cheung & Lee, 2010). The personality competencies of teachers in coastal areas appear in terms of teachers who are patient, calm, responsible, democratic, sincere, intelligent, respectful of others, friendly, assertive, and creative (Burdina, Krapotkina & Nasyrova, 2019). In distance learning physical education material, the personality competence of teachers in coastal areas is quite good.

Conclusion

Distance learning is proven to have an impact on the readiness of PE teachers in coastal areas. However, the intended impact shows the unpreparedness of PE teachers in carrying out distance learning. The influencing aspects are the technical skills of teachers in using technology are still low, the teaching experience of teachers in distance learning is still small, attitudes towards distance learning that tend to be flat, and time management is not good. Furthermore, the recommendation of this finding is that virtual learning training and sufficient support are needed for success in distance learning.

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Conflict of interest

No potential conflict of interest was reported by the authors.

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ДИСТАНЦІЙНЕ НАВЧАННЯ: ЧИ ВПЛИВАЄ ВОНО НА ПІДГОТОВЛЕНІСТЬ УЧИТЕЛІВ ФІЗИЧНОГО ВИХОВАННЯ В ПРИБЕРЕЖНИХ ЗОНАХ?

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Авторський вклад: А – дизайн дослідження; В – збір даних; С – статаналіз; D – підготовка рукопису; Е – збір коштів

Реферат. Стаття: 8 с., 9 табл., 1 рис., 25 джерела.

Мета дослідження. Метою цього дослідження було визначити, чи впливає дистанційне навчання на підготовленість учителів фізичного виховання в прибережних зонах.

Матеріали та методи. У цьому дослідженні використовували експериментальний метод із планом дворазового попереднього та підсумкового тестування на одній групі. Учасниками дослідження були вчителі фізичного виховання 7–9 класів середніх шкіл у прибережних зонах ($n = 60$). Збір первинних даних для вимірювання підготовленості вчителів здійснювали за допомогою онлайн-опитування на тему підготовленості до проведення навчання, яке містило 41 запитання з рівнем достовірності 0,76 та надійності 0,91. Для збору вторинних даних використовували дослідження літератури.

Результати. Результати аналізу даних із використанням t -критерію Стюдента для парних вибірок показали $0,754 > 0,01$, указуючи на однакову дисперсію даних. Розглядаючи припущені рівні дисперсії, результат визначення рівня значущості показує, що $0,000 < 0,01$ (довірчий інтервал = 99%), отже нульову гіпотезу (H_0) відкидають. На підставі цих даних отримуємо, що із загального числа учасників дослідження 10 учителів, або 16%, готові проводити дистанційне навчання, 36 учителів, або 60%, не готові, а 14 учителів, або 24%, недостатньо підготовлені.

Висновки. Дистанційне навчання впливає на підготовленість учителів фізичного виховання в прибережних зонах. Вплив, про який ідеться в цій роботі, показує недостатню підготовленість учителів фізичного виховання в процесі реалізації дистанційного навчання. На підставі результатів дослідження рекомендується забезпечити підготовку вчителів до проведення навчання у віртуальному середовищі та їх належну підтримку для досягнення успішних результатів у дистанційному навчанні.

Ключові слова: фізичне виховання, прибережні зони, дистанційне навчання, підготовленість, навчання.

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