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POLISH JOURNAL OF PHYSIOTHERAPY

OFICJALNE PISMO POLSKIEGO TOWARZYSTWA FIZJOTERAPII

THE OFFICIAL JOURNAL OF THE POLISH SOCIETY OF PHYSIOTHERAPY

NR 3/2023 (23) KWARTALNIK ISSN 1642-0136



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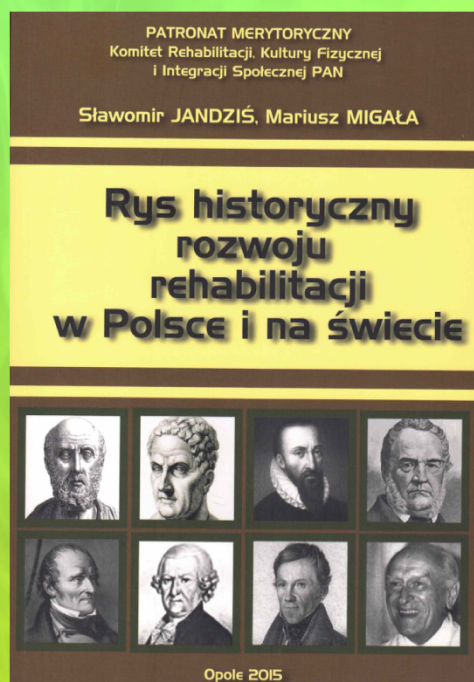
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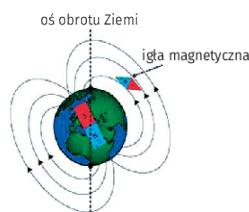
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The effect of the CGFU-PM515 learning method on the motivation and physical activity of elementary school students

Wpływ metody nauczania CGFU-PM515 na motywację i aktywność fizyczną uczniów szkoły podstawowej

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Abstract

Introduction. Increased student motivation correlates directly with active student behavior. Not only does motivation enhance students' active participation, but it also fosters their physical development in physical education classes.

Purpose. This study aimed to examine the impact of the Coaching Game For Upgrading Performance Model 515 (CGFU-PM515) on students' motivation during physical education lessons in elementary schools.

Methods. The research employed a Quasi-Experimental One Group Pretest-Posttest Design. Seventy-five elementary school students participated in this study. The research procedure involved having students undergo lessons both without and with the application of the CGFU-PM515 concept. After the lessons, students were given the CMEF Physical Education Basic Education questionnaire to assess their motivation levels before and after the introduction of the CGFU-PM515 concept.

Results. Findings indicate that students' motivation improved following the integration of the CGFU-PM515 method. The N-Gain Score analysis revealed a value of 0.73, which is interpreted as high. Additionally, a Wilcoxon test was conducted. Results from this test showed a significant increase in motivation among the 75 participating students.

Conclusion. The study concludes that the CGFU-PM515 approach positively impacts student motivation in elementary school physical education lessons.

Keywords

CGFU-PM515, motivation, physical activity, elementary school

Streszczenie

Wprowadzenie. Wzrost motywacji uczniów koreluje bezpośrednio z ich aktywnym zachowaniem. Motywacja nie tylko zwiększa aktywne uczestnictwo, ale także sprzyja ich fizycznemu rozwojowi uczniów na lekcjach wychowania fizycznego.

Cel. Celem tego badania było zbadanie wpływu koncepcji Coaching Game For Upgrading Performance Model 515 (CGFU-PM515) na motywację uczniów podczas lekcji wychowania fizycznego w szkołach podstawowych.

Metody. Badanie zastosowało nielosowe doświadczenie eksperymentalne z jedną grupą przed i po teście. W badaniu wzięło udział 75 uczniów szkoły podstawowej. Procedura badawcza polegała na przeprowadzeniu lekcji zarówno bez jak i z zastosowaniem koncepcji CGFU-PM515. Po lekcjach uczniowie otrzymali kwestionariusz CMEF dotyczący podstawowego wychowania fizycznego, aby ocenić ich poziom motywacji przed i po wprowadzeniu koncepcji CGFU-PM515.

Wyniki. Wyniki wskazują, że motywacja uczniów poprawiła się po wdrożeniu metody CGFU-PM515. Analiza wyników N-Gain wykazała wartość 0,73, co interpretuje się jako wysoką. Dodatkowo przeprowadzono test Wilcoxona. Wyniki tego testu wykazały znaczący wzrost motywacji wśród 75 uczestniczących uczniów.

Wnioski. Badanie wykazuje, że podejście CGFU-PM515 ma pozytywny wpływ na motywację uczniów na lekcjach wychowania fizycznego w szkole podstawowej.

Słowa kluczowe

CGFU-PM515, motywacja, aktywność fizyczna, szkoła podstawowa

Introduction

The teacher has a major role in the learning process, the teacher's role is to direct students during learning [1]. Recently there has been a development regarding the physical education learning model [2]. There are several research results which state that teachers need to be given training on teaching styles that can increase student motivation [3]. Because the increase in student motivation is directly proportional to the active behavior of students. Besides being beneficial for students' active behavior, students' motivation in participating in physical education learning is also beneficial for physical improvement and social improvement or it can also be concluded that physical education can be beneficial for a student's healthy lifestyle [4 analysis]. The World Health Organization (WHO) makes recommendations regarding the amount of daily physical activity that children must do, namely doing aerobic physical activity every day within 60 minutes, either in the form of moderate intensity activity or high intensity activity. Children often spend their time at school, where at school children have the opportunity to be able to do physical activity [5]. Therefore the teacher must really take advantage of this condition to be able to maximize children's physical activity while at school through physical education learning.

Through learning physical education in schools students can carry out or even create various forms of play, recreation and sports activities, so as to encourage creativity and allow them to respect themselves and those around them. Doing physical activity can have a positive impact on mental health, especially reducing anxiety and stress [5]. It should be noted that in an academic context, achieving goals is not only a matter of having good skills and knowledge, but also a matter of will and motivation. Motivation is considered as an active process that a person goes through in achieving certain goals [7]. So if it is associated with learning physical education, then this motivation has an important role in influencing a person's personality to carry out motor activities continuously [8]. Motivated students will tend to try harder in doing assignments and have more interest in doing something, so they can improve the skills they learn.

The physical education teacher is a good promoter in order to foster students' willingness to be able to carry out regular physical activity. The learning process must be student-centered, so to support this the teacher needs to use the right approach when learning. Teachers must design learning based on student needs to improve the psychomotor, cognitive, and affective domains [11]. In this case the concept approach of Coaching Game For Upgrading Performance Model 515 (CGFU-PM515) is an approach that is considered to be able to facilitate students' needs, more specifically to facilitate increasing students' motivation in carrying out physical education learning. This model is a game model for training with an innovative game-based training concept to improve skills [12]. The CGFU-PM515 concept is an alternative concept development in the sports coaching process which consists of four stages, namely innovation games, natural games action, coaching approach, and performance & skill assessment. CGFU-PM 515 provides an opportunity for trainers to inno-

vate and express their creativity in compiling games that are easy, inexpensive, fun, achieve the desired goals and always end by measuring changes in the abilities of the trainees. CGFU-PM515 is a creative, innovative, not boring, and futuristic training model solution by utilizing the development of information technology for education.

This concept will try to be applied in learning, please note that the word training in this concept is not only interpreted with the intention of training but can also be interpreted with the meaning of guiding or directing. Basically, in the context of training and learning, trainers and teachers both have a mission to direct their students or students towards certain goals. So it is hoped that through the experiment of implementing the CGFU-PM515 concept in physical education learning in elementary schools it can increase student motivation to take physical education learning. To be able to determine the level of students' motivation towards physical activity in elementary schools, researchers used an approach through a research instrument in the form of a questionnaire called the Physical Education Questionnaire (CMEF) [13]. This instrument was actually created for middle school students, so it should be noted that there may be some obstacles in the process of using it for elementary school students. However, the results released from the process of analyzing the motivation level of elementary school students using this questionnaire are still valid [14].

Methods

The subjects of this study were 75 elementary school students, this method is called Quasi Experimental One Group Pretest Posttest Design. Please note that the determination of this sample using a purposive sampling approach. The use of this purposive sampling technique is based on matching the sample according to the aims and objectives of the research, but it will also provide more accurate data. The four aspects of choosing a purposive approach are credibility, transferability, dependability, and confirmability [15]. The instrument used in this study was a questionnaire about students' motivation in participating in physical education learning, namely Penjasorkes In Primary Education (CMEF) [13]. Fill out the questionnaire using a Likert scale with a rating scale of 1 to 4. Number 1 if the respondent wants to answer "Strongly Disagree" with the statement given and number 4 if the respondent wants to answer "Strongly Agree" with the statement in the questionnaire. CMEF consists of 18 statement items grouped into 5 factors. Factor 1 for "Intrinsic Motivation" consisting of 4 statement items, factor 2 for "Identified Motivation" consisting of 4 statement items, factor 3 for "Introjection Motivation" consisting of 2 statement items, factor 4 for "External Motivation" which consists of 4 statement items, factor 5 for "Demotivation" which consists of 4 statement items. For this study not all factors will be applied, considering that the respondents involved in this study are elementary school students, so researchers will only look at it from the point of view of the factors of Intrinsic Motivation and External Motivation. Then the number of statement items in the questionnaire will only amount to 8 statement items. Items in the questionnaire will be presented in the Table 1.

Table 1. Questionnaire of intrinsic motivation and external motivation

No	Intrinsic motivation	External motivation
1.	Because I can learn skills that can be used for other purposes in my life	Because by attending physical education lessons I was considered good by teachers and friends
2.	Because I value the benefits of physical education in improving my physical development	Because I want teachers to know that I am a good student
3.	Because physical education can be useful for my skills in the future	Because I want my friends to judge what I do
4.	Because physical education teaches knowledge and skills that I think are important	To show my ability to my teacher and friends

The questionnaire in hard copy form is presented in the context of a needs analysis related to the effect of applying the CGFU-PM515 approach to students' motivation to engage in physical activity. Data collection was carried out from February 2023 to April 2023. The technique of filling out this questionnaire was carried out by first carrying out physical education learning by not applying the CGFU-PM515 concept approach and carrying out physical education learning by applying the CGFU-PM515 concept approach, then after carrying out the learning the students were given questionna-

ire that has been prepared. After all students filled out the questionnaire, all the results of the questionnaire were collected for statistical analysis to determine the level of student motivation in participating in learning, both learning using the CGFU-PM515 approach and learning using the CGFU-PM515 approach. do not apply the concept.

The collected data were then analyzed using Microsoft Excel for the N-Gain Score Test and Statistical Package for Social Science (SPSS) version 22.0 for the Wilcoxon Test. The results of the N_Gain Score test are presented in the Table 2.

Table 2. N-Gain Score Test results

No	Pretest	Posttest	Post - Pretest	S.Ideal - Pretest	N Gain	% N Gain
1	75	95	20	25	0.80	80.00
2	71	90	19	29	0.66	65.52
3	65	92	27	35	0.77	77.14
4	80	95	15	20	0.75	75.00
5	66	90	24	34	0.71	70.59
6	75	90	15	25	0.60	60.00
7	76	94	18	24	0.75	75.00
8	76	90	14	24	0.58	58.33
9	78	95	17	22	0.77	77.27
10	70	96	26	30	0.87	86.67
11	70	93	23	30	0.77	76.67
12	74	90	16	26	0.62	61.54
13	77	90	13	23	0.57	56.52
14	72	93	21	28	0.75	75.00
15	70	94	24	30	0.80	80.00
16	75	90	15	25	0.60	60.00
17	76	94	18	24	0.75	75.00
18	76	90	14	24	0.58	58.33

No	Pretest	Posttest	Post - Pretest	S.Ideal - Pretest	N Gain	% N Gain
19	78	95	17	22	0.77	77.27
20	70	96	26	30	0.87	86.67
21	75	95	20	25	0.80	80.00
22	71	90	19	29	0.66	65.52
23	65	90	25	35	0.71	71.43
24	80	93	13	20	0.65	65.00
25	66	97	31	34	0.91	91.18
26	70	95	25	30	0.83	83.33
27	74	90	16	26	0.62	61.54
28	77	95	18	23	0.78	78.26
29	72	95	23	28	0.82	82.14
30	70	98	28	30	0.93	93.33
31	65	90	25	35	0.71	71.43
32	80	93	13	20	0.65	65.00
33	66	95	29	34	0.85	85.29
34	75	93	18	25	0.72	72.00
35	76	90	14	24	0.58	58.33
36	78	94	16	22	0.73	72.73
37	70	90	20	30	0.67	66.67
38	70	95	25	30	0.83	83.33
39	74	96	22	26	0.85	84.62
40	77	93	16	23	0.70	69.57
41	70	90	20	30	0.67	66.67
42	75	93	18	25	0.72	72.00
43	76	97	21	24	0.88	87.50
44	76	90	14	24	0.58	58.33
45	78	94	16	22	0.73	72.73
46	71	90	19	29	0.66	65.52
47	65	95	30	35	0.86	85.71
48	80	96	16	20	0.80	80.00
49	66	97	31	34	0.91	91.18
50	75	90	15	25	0.60	60.00
51	76	96	20	24	0.83	83.33
52	76	90	14	24	0.58	58.33
53	78	94	16	22	0.73	72.73
54	70	90	20	30	0.67	66.67
55	70	95	25	30	0.83	83.33
56	66	96	30	34	0.88	88.24
57	75	97	22	25	0.88	88.00
58	76	90	14	24	0.58	58.33
59	76	94	18	24	0.75	75.00
60	78	90	12	22	0.55	54.55

No	Pretest	Posttest	Post - Pretest	S.Ideal - Pretest	N Gain	% N Gain
61	70	95	25	30	0.83	83.33
62	70	95	25	30	0.83	83.33
63	74	90	16	26	0.62	61.54
64	77	93	16	23	0.70	69.57
65	72	95	23	28	0.82	82.14
66	70	94	24	30	0.80	80.00
67	77	90	13	23	0.57	56.52
68	70	94	24	30	0.80	80.00
69	75	90	15	25	0.60	60.00
70	76	95	19	24	0.79	79.17
71	76	96	20	24	0.83	83.33
72	78	90	12	22	0.55	54.55
73	71	90	19	29	0.66	65.52
74	65	93	28	35	0.80	80.00
75	80	94	14	20	0.70	70.00
Mean	73.27	93.03	19.76	26.73	0.73	73.20

The results of the N-Gain Score analysis above are then interpreted to become a criterion, the N-Gain Score criterion refers to the results of David E. Metzler's research [16]. It should be

noted that the N-Gain Score test serves to show an increase in students who have received treatment in an experimental study [17]. The interpretation table is presented in the Table 3.

Table 3. Interpretation of the N-Gain Score Test results

> 0.7	Tall	100–71	Tall
0.3 – 0.7	Currently	70– 31	Currently
< 0.3	Low	30– 1	Low

Based on the N-Gain Score Test table above, the result is that the N-Gain value is 0.73 or 73.20, which means there is an increase in students' motivation in carrying out physical activities when participating in physical education learning. Apart from

the N-Gain Score test, the Wilcoxon test was also carried out to test the normality of non-parametric statistics and also to find out that the treatment given had a positive impact on students. Wilcoxon test results are presented in the following table.

Table 4. Wilcoxon signed ratings

	N	Mean rank	Sum of ranks
Posttest-pretest	Negative ranks	0 ^a	0.00
	Positive ranks	75 ^b	38.00
	Ties	0 ^c	2850.00
	Total	75	

^a Posttest < Pretest

^b Posttest > Pretest

^c Posttest = Pretest

Table 5. Test statistics (Wilcoxon Signed Rank Test)

	Posttest-Pretest
Z	-7.530*
Asym. Sig. (2-tailed)	0.000

* Based on negative ranks

Based on the results of the Wilcoxon test analysis in the two tables above, it was stated that 75 data from 75 respondents had an increase, besides that it was also found that none of the pretest and posttest data had the same or lower posttest results. Thus, from the results of the Wilcoxon signed ranks analysis, it can be concluded that the treatment of the CGFU-PM515 concept in physical education learning has a positive impact on students' motivation in carrying out physical activities. Then in the statistical test table a significance value of 0.000 is obtained, which means that the value is less than 0.05, so with these conditions H_0 is rejected and H_1 is accepted.

Results

Table 2 shows the pretest and posttest results of the 75 respondents involved in this study. The data in Table 2 were analyzed using the N-Gain Score principle to find out whether there was an increase in students who received treatment in experimental research. Based on the results of the analysis, it is known that the comparison of the pretest-posttest average scores has increased and in accordance with the N-Gain Score principle, the increase that occurs is classified as a high increase or can also be called an effective experimental treatment.

Table 4 shows the results of data analysis using the Wilcoxon test principle. This test is carried out to confirm the results of previous tests, so that the results obtained are truly accurate. It should be noted that the Wilcoxon test serves to see whether the treatment given will have a negative effect on the respondent, or a positive effect on the respondent, and/or the treatment given to the respondent has no effect. Therefore it can be seen from table 4 that the treatment given by applying the CGFU-PM515 concept can have a positive influence on respondents which in this case relates to students' motivation in carrying out physical activities during physical education learning. Furthermore, if the principles of the hypothesis are applied in this study, based on the statistical analysis in table 5, it can be seen that the significance value indicates a value that is below the maximum provisions of the significance value. So it can be concluded that the prevailing hypothesis is that the treatment of students with the application of the CGFU-PM515 concept has a positive impact on students' motivation in carrying out physical activities during physical education learning.

Acknowledgements

The author would like to thank Prof. Dr. Sumaryanto, M. Kes. as Chancellor of Yogyakarta State University, Prof. Dr. Siswantoyo, M.Kes. as Promoter, Dr. Yudanto, M.Pd. as Co-Promoter, Dr. Susanto, M.Or., Widha Srianto, M.Pd., and Yuyun Farida, M.Biotech. Has helped the author to complete this article.

Discussions

This research was conducted to find out how the role of the CGFU-PM515 concept affects students' learning motivation when doing physical activities. To help see how students' motivation is used an instrument to assess how students' intrinsic motivation and extrinsic motivation are. The instrument is called CMEF (Motivation in Physical Education Questionnaire). Why is motivation in Physical Education learning important, because it is necessary to know that motivation in Physical Education learning can be beneficial for students to adopt a healthy lifestyle. When referring to the statement items in the instrument, it is known that the type of intrinsic motivation emphasizes that physical education will benefit individual life both physically and knowledge to skills. While the type of extrinsic motivation emphasizes that an individual wants to do something because of recognition from the people around him. Elementary school is a goal in seeing a portrait of student motivation and anything that can influence it. Children who attend primary school are generally aged between 7-12 years. There is research which states that students who are highly motivated between the ages of 10-12 years, they will usually participate more in physical education learning [18, 19]. The role of motivation, especially intrinsic motivation, can significantly increase a person's motivation in learning physical education if a teacher applies learning concepts that focus on students [20, 21]. In addition, learning with playing patterns can also provide motivation for children.

Conclusion

In the end it was discovered that the role of the CGFU-PM515 concept really helped students in growing and increasing their motivation to actively carry out physical education learning activities. This concept provides opportunities for students to be able to perform various types of physical activity through a play approach. Based on the results of the analysis of the data obtained, there is a high increase when this concept is applied in learning. In addition, all students involved in this study all experienced an increase in motivation.

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