

Ngadiman-Sport Science 15

by Ngadiman Ngadiman

Submission date: 29-Sep-2022 12:11PM (UTC+0700)

Submission ID: 1911882592

File name: 1._Motor_Skills_Test_Sport_Science.pdf (246.25K)

Word count: 4456

Character count: 24213

THE MOTOR SKILLS TEST FOR NEW STUDENTS OF THE PHYSICAL EDUCATION PROGRAM

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Original scientific paper

Abstract

Since 2019 the selection processes of new students of sports study programs of state higher education institutions are no longer carried out through direct motor skill tests, but with a portfolio assessment. Portfolio is a very complete evaluation instrument to evaluate potential student's track record and performance aspects. There is no certainty until now of which one is better out of the two selection models. This descriptive quantitative research aimed at comparing new students' live motor skills between direct motor skill test and portfolio assessment results. The research data were of secondary data from the live motor skill test results from the selection of 41 new students of Physical Education Study Program, Jenderal Soedirman University, Purwokerto in 2017 and of 65 new students' portfolio assessment test results in 2020. The data analysis results show a significant difference in the eye-arm coordination test results ($\text{sig}=0.000$) and mobility test results ($\text{sig}=0.000$). However, there is no significant difference in leg muscle test results ($\text{sig}=0.169$), and running 1600-meter test results ($\text{sig}=0.255$). The research concludes that generally, the motor skill test results of portfolio assessment are better than direct test results.

Keywords: test, skill, motor, portfolio, student.

Introduction

2019 was a new era in the new student entrance selection process for the sports study program, especially for potential students who were to study at state higher education institutions in Indonesia. Specifically for State Higher Education Institutions' Collective Entrance Selection (*Seleksi Bersama Masuk Perguruan Tinggi Negeri* - SBMPTN) there was something interesting, the direct skill test was replaced with a portfolio assessment. The portfolio is a very complete evaluation instrument to evaluate potential students' track records and performance aspects (Festiawan et al., 2021; Irawan & Limanto, 2021; Phytanza, Burhaein, Lourenço, et al., 2022). A portfolio completely describes potential students' information related to achievement track record and reports on the performance in certain aspects (Phytanza, Burhaein, & Pavlovic, 2021; Phytanza, Burhaein, Lourenço, et al., 2021; Sulistianoro & Setyawan, 2021).

The advantage of the portfolio is that the document can present an evaluation object with integrated information in complete form of a potential student (Azizah & Sudarto, 2021; Burhaein, Phytanza, et al., 2020; P. Purwanto et al., 2021). The portfolio is not only a personal description, but also contains information on valid documentary evidence, graphic information, and trusted visual documents. Portfolio application in replacement of sports skills test is a solution chosen to solve the abovementioned problems (Burhaein, Tarigan, Budiana, Hendrayana, Phytanza, Demirci, et al., 2021; Burhaein et al., 2022; Catur & Mujirah, 2021). The portfolio does not reduce the sports college's opportunity and authority

to choose desired potential students. According to Komarudin (2016), portfolio assessment performs better than traditional evaluation of a student's physical fitness improvement.

The new student selection process through portfolio-based skills or capabilities may not be capable of preparing potential students who graduate for their talent (Burhaein, Demirci, Lourenço, Németh, & Phytanza, 2021; Irawan & Prayoto, 2021; S. Purwanto & Burhaein, 2021). It is possible that those who graduate only have documented achievement that does not represent their real capabilities. On the other hand, the portfolio selection process can also reduce autodidact learners' opportunity to be admitted to their desired department, since autodidact learners barely participate in any competition that produces certificate or documents of achievement evidence (Burhaein, Tarigan, Budiana, Hendrayana, Phytanza, Lourenço, et al., 2021; Jannah et al., 2021; Sibarani & Manurung, 2021). Besides, autodidact learners cannot show their real proficiency to assure others that they deserve to be admitted to their desired department (Phytanza, Burhaein, Indriawan, et al., 2022; Phytanza & Burhaein, 2020; Pramantik, 2021). This will reduce autodidact talents' opportunities to hone their skills in formal education. The research conducted by Birriy (2016) shows that there is a significant difference between active and passive students' motor ability. Moreover, the research conducted by Sulaeman (2019) proves motor ability's significant opportunities contribution to students' long jump ability. However, the research conducted by Febrianty (2020) shows

that the motor ability of students in class 2019 of FPOK UPI Bandung is of average level.

Based on the disadvantages of the new student selection model, it is necessary to evaluate it through an analysis of the motor ability of new students of the Physical Education Department based on portfolio document. This research aimed at comparing new students' motor ability between direct sport skill test results and portfolio document-based sport skill test results. The first stage of the research presents a statistical analysis of new students' skill tests based on portfolios displayed in the form of data classification. In the next stage, this research aimed at determining a more effective selection model as reviewed from new students' initial motor ability aspect.

Methods

The research used a descriptive quantitative approach (Burhaein, Tarigan, Budiana, Hendrayana, & Phytanza, 2021; Fraenkel et al., 2012; Phytanza, Purwanta, Hermanto, et al., 2021). The research data were of secondary data, that were the results of direct sport skill test in entrance selection of 45 potential students of class 2017, while the portfolio document-based skill test results data were from 65 potential students of class 2020. The research instruments consisted of: 1) Ball throwing and catching test to measure eye-arm coordination ability; 2) Illinois Shuttle Run test aiming at measuring mobility skill; 3) Vertical Jump test to measure leg muscle power ability; and 4) Running 1600-meter test for cardiovascular endurance. The data were analyzed using statistical descriptive analysis, normality test, and independent t test.

Results

The data of new student's motor skill test for entrance selection, both direct test and portfolio assessment results, were analyzed using statistical approach and are displayed in Table I below.

Table 1. Results of Direct Motor Skill Test.

Status	Coordination	Vertical Jump	Agility	1600 M
Very Good	3	28	0	7
Good	11	12	14	14
Fair	17	1	19	13
Poor	10	0	8	7
Total	41	41	41	41

Based on Table 1 above, the highest amount of test results of very good category is of vertical jump with 28 participants (68%). This result shows that in general the participants have very good leg muscle explosive power. However, in the mobility test using Illinois Shuttle Run Test, there is no participant of very good category, since the test was conducted on a grassy surface. Such surface did not support the participants to run well. Meanwhile, the coordination and running-1600-meter test shows relatively normal results.

Table 2. Results of Portfolio Assessment.

Status	Coordination	Vertical Jump	Agility	1600 M
Very Good	34	35	24	20
Good	17	15	26	5
Fair	11	7	10	15
Poor	3	8	5	25
Total	65	65	65	65

Based on Table 2 above, almost all types of test show very good category with coordination test results with 34 participants (82%), vertical jump test with 35 participants (85%), and mobility test with 24 participants (58%). The results are not necessarily objective, since based on the video played as an instrument of portfolio assessment, some parts of test implementation were not as per performance instruction of the portfolio assessment. This is certainly not good that the recorded results do not conform to the participants' actual abilities.

Table 3. Results of Difference in Parameter between Direct Test Results and Portfolio Assessment.

Parameter	Coordination (number)		Vertical Jump (cm)		Agility (second)		1600 M (Minutes)	
	Direct	Port-	Direct	Port-	Direct	Port-	Direct	Port-
	Test	folio	Test	folio	Test	folio	Test	folio
N	41	65	41	65	41	65	41	65
Min	9	17	24	22	16.98	10.87	5.45	5.00
Max	34	41	78	97	22.81	22	12	14.42
Mean	22.17	28.62	56.73	52.44	56.73	17.25	8.11	8.60
Std. Dev	5.86	5.31	10.55	17.98	10.55	2.40	1.63	2.43

Based on Table 3 above, there is relatively big difference with the vertical jump test results of $(97-78) = 19$ centimeters. Meanwhile, there is significant difference in the mobility test results of $(16.98-10.87) = 6.11$ seconds. This significant difference in number can be caused by difference in the potential

students' understanding of the performance instruction of portfolio assessment implementation. Based on the table above, we can find as a whole that the data of portfolio assessment results are better than the direct test results, except for running 1600-meter test.

Table 4. Results of Direct Test and Portfolio assessment based on Criteria.

Categori	Coordination (number)				Vertical Jump (cm)				Agility (detik)				1600 M (Menit)			
	Direct	Percent	Port-	Percent	Direct	Percent	Port-	Percent	Direct	Percent	Port-	Percent	Direct	Percent	Port-	Percent
	Test	(%)	folio	(%)	Test	(%)	folio	(%)	Test	(%)	folio	(%)	Test	(%)	folio	(%)
Very Good	3	0,07	34	0,52	28	0,68	32	0,49	0	0,00	24	0,37	7	0,17	20	0,31
Good	11	0,27	17	0,26	12	0,29	17	0,26	14	0,34	26	0,40	14	0,34	5	0,08
Medium	17	0,41	11	0,17	1	0,02	7	0,11	19	0,46	10	0,15	13	0,32	15	0,23
Low	10	0,24	3	0,05	0	0,00	9	0,14	8	0,20	5	0,08	7	0,17	25	0,38
N	41	1,00	65	1,00	41	1,00	65	1,00	41	1,00	65	1,00	41	1,00	65	1,00

Based on Table 4 above, overall, the very good category commonly occurs with the results of portfolio assessment with 110 participants, while direct test results with only 38 participants. For good category, in the portfolio assessment there are 65 participants, while in the direct test there are 51

participants. On the contrary, for average category of portfolio assessment there are 43 participants, while for direct test there are 50 participants. For bad category, in portfolio assessment there are 42 participants, while in direct test there are 25 participants.

Table 5. Results of Independent t Test.

No.	Test Components	Mean		Sig.
		Portfolio Assessment	Direct Test	
1	Coordination	28.62	22.17	0.000
2.	Vertical Jump	52.44	56.73	0.169
3.	Agility	17.25	19.08	0.000
4.	1600 M Run	08.60	08.11	0.255

Based on Table 5 above, there is significant difference in the results of eye-arm coordination test between direct test and portfolio assessment (sig. 0.000). There is no significant difference in the results of vertical jump test between direct test and portfolio assessment (sig. 0.169). There is significant difference in the results of mobility test between direct test and portfolio assessment (sig. 0.000). There is no significant difference in the results of running 1600-meter between direct test and portfolio assessment (sig.0.255).

Discussions

In the vertical jump test with direct test show that in the very good category there are 28 (68%) out of 41 participants, while with the portfolio assessment there are 35 (53%) out of 65 participants. This shows that generally potential students have almost equal leg muscle explosive power in the two tests. Physical element, especially leg power, is greatly needed in many sports, especially for jumping in smash, block, as defense against opponent's attack, or in jump service (Burhaein, Tarigan, et al., 2020; Mumpuniarti et al., 2021; Sutopo & Misno, 2021). Plyometric practice using body's heavy weight has been used as a practice method, especially to develop strength, speed, and power (Bompa & Buzzichelli, 2019; Demirci & Phytanza, 2021; Widodo & Zainul, 2021). Therefore, strength, speed and power are a very important set of physical components in various sports. Muscle power is also used as the predictor of physical ability limit (Alcazar et al., 2018; Prasetya, 2021; Widodo & Najibuzzamzam, 2021).

In the coordination test with direct test for the very good category there are 3 (7%) out of 41 participants, while with portfolio assessment there are 34 (53%) out of 65 participants. This shows that portfolio assessment produces more very good category. Eye-arm coordination is the central nervous system's ability to coordinate the information received from the eyes to control, guide, and direct the arms in completing a task given such as catching a ball (Carey, 2000; Widiyono & Mudiono, 2021). Eye-arm coordination is an important motor-visual function which facilitates the use of arms, hands, and fingers that intended to producing a controlled, accurate, and fast movement, especially in sports like badminton (Crawford et al., 2004; Putra et al., 2021).

In the mobility test with direct test there is no participant of very good category, while with portfolio assessment there are 24 (36%) out of 65 participants. This may be caused by the implementation of direct test on grassy land. Such a surface does not support participant to run well. Mobility is defined as quick movement of whole body with change in speed or direct as response to stimulus. This quality is acknowledged as the important component of success in various tactical tasks, and especially as the important aspect of team sports. For some other sports, such as basketball, football, or hand ball, indeed, mobility is acknowledged as one important determinant of success. Consequently, this is a very important variable in team sports that should be monitored and evaluated regularly (Sheppard & Young, 2006; Sukendro et al., 2021).

The results of running 1600-meter test with direct test there are 7 (15%) out of 45 participants of very good category, while with portfolio assessment there are 20 (30%) out of 65 participants.

This shows that test indirectly produces very good category more. Endurance is the combination of two different factors; cardiovascular endurance and muscle endurance. The two are the basic components of physical fitness besides strength, flexibility and body composition. Cardiovascular endurance and muscle endurance also creates the basis of ability development. Physical fitness is an integrated measure of all functions and structures involved in physical activity performance. Cardiorespiratory fitness, especially, reflects the whole capacity of cardiovascular and respiratory system to supply oxygen during continuous physical activity. Currently there is no strong evidence that cardiorespiratory fitness is an important predictor of morbidity and mortality. Therefore, it is deemed as the strongest marker of health, even above other traditional indicators such as body weight status, blood tension or cholesterol level (Castillo Garzón et al., 2005; Ilham et al., 2021).

Conclusion

The results of motor skill test for new student entrance selection of the Physical Education Study Program of Jenderal Soedirman University show that the components of coordination and mobility of portfolio assessment are significantly better than the result of direct test. There is no significant difference between the results of portfolio assessment and direct test on the vertical jump and running 1600-meter components. In general, this shows that the results of portfolio assessment test are better than the results of direct test, that with the lack of understanding of potential students of the performance instruction, its validity level is still doubted.

Acknowledgments

Researchers would like to express their deep gratitude to all those who have helped carry out this research.

Conflict of Interests

Researchers said there was no conflict of interest in the study. Researchers said there was no conflict of interest in the study.

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Received: 20 May, 2021

Accepted: 20 December, 2021

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