

Application of Volleyball TID in Identifying Young Talented Players

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Application of Volleyball TID in Identifying Young Talented Players

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Abstract

Volleyball Talent Identification is one of the TID methods that can be used to identify and select young talented volleyball players. It was developed from Sport Search belongs to Australian Sports Commission. The purpose of this study was to identify young talented volleyball players using a Volleyball TID. This research was conducted at elementary school students grade VI aged 11-13 years olds in West Surabaya. The subjects were girls and boys students who actives in physical education and have height at least 150 cm with total numbers 202 students. The data was collected from anthropometrical measurement (height, sitting height, body mass, arm spam, standing reach), physiological testing (vertical jump 1 leg, vertical jump 2 legs, shuttle run, and MFT), and biomotorical testing (flexibility and throw and catch tennis ball). All the data were entered and analyzed using Volleyball TID software. The result of this study found that 59 students were identified as young talented volleyball players (37 boys and 22 girls). The conclusion of this study was Volleyball TID can be used to identify young talented volleyball players.

Keywords: anthropometrical, physiological, biomotorical, tcst and measurement, volleyball

Background

Talent identification programm have been done in many countries which was supported by the government, sports scientists, and sports organizations. China has tried to detect and identify the excellence potential and developed them into sports organizations with supported by the Sports Ministry in order to get excellence teams in the future (The Policy Research Centre of the Sports Ministry, 1982). The programm have been conducted to 120 millions students with aged 10-14 years. In the Olympic Games 2008 in Beijing and 2012 in London, China was on the first rank which collected the most gold medals. China Sport Daily (December 30th 2000) reported that China has won 1408 world championships and 1042 world records during 1949-2000.

Australia, has made Sport Search and Talent Search for indentifying young talented athletes. This program was completed with inovative and interractive computer software, therefore it can be used easily to get information about physical fitness profile and sports depend on each subject. This program also gives information regarding talent identification accurately base on children's potentials for approximately 80 sports. The instruments that were used to identify young talented athletes including anthropometrical measurements (height, body mass, sitting height, and arm spam); and physical tests (sprint 40m, vertical jump, shuttle run, throwand catch tennis ball, basketball throwing, and multistage fitness test). The program have been done to 1,3 millions

students with aged 11-15 years old ASC, 2005).

In addition, Indonesia has been developed talent identification program, but it's still not conducted intensively and specifically. In 2003, Thumm is an expert of sport from Germany, have made a pilot project of talent identification for track and field in Papua. Test and measurement that have been done were height and body mass for anthropometric measurement. Beside that, the physical tests were general flexibility (glide test), macro coordination (floor exercise/gymnastic artistic), speed acceleration (40m sprint), throwing movement accuracy (ball throw), explosive vertical power (jump and reach), horizontal explosive power (triple frog jump), general aerobic endurance (sprint 800m for boys and 600m for girls). This program was conducted on 4388 students with aged range of 11-13 years old (Thumm, 2003).

In 2010, Ballard is an Olympian and strength conditioning expert from Australia also developed talent identification for lawn tennis in Jakarta. It was conducted on tennis players under 12 years. The measurement of anthropometrical was height and body mass; physical test including speed 20m sprint, Ttest, 505, sit and reach, medicine ball throw 2kg, sit up, push up, pull up, stability leg stance, vertical jump, standing broad jump, double and single leg, and the ability technique test was tennis playing abilities (Ballard, 2010).

In 2013, Kusnanik has developed a model of talent identification for volleyball players. This model is to identify young talented volleyball players aged between 11-13 years old. The instruments that are used including anthropometrical measurements (height, body mass, spam arm, sitting height, leg length, and standing reach); physiological testing (shuttle run, vertical jump 1 leg, vertical jump 2 legs, multistage fitness test); and biomotorical testing (flexibility, throw and catch tennis ball). The equation that have been found is $D = -48,522 + (0,139 \text{ height}) + (0,223 \text{ sitting height}) - (0,075 \text{ body mass}) + (0,058 \text{ spam arm}) - (0,020 \text{ standing reach}) + (0,084 \text{ leg length}) - (0,065 \text{ throw and catch tennis ball}) + (0,093 \text{ flexibility}) - (0,072 \text{ shuttle run}) - (0,181 \text{ multistage fitness test}) + (0,029 \text{ vertical jump 2 legs}) + (0,056 \text{ vertical jump 1 leg})$ (Kusnanik, 2013).

Talent identification program is essential to identify young talented athletes including volleyball players. Some of the literatures reported that talent identification have been done in many countries such as Australia, China, Japan, Scotland, and Germany (Aussie Sports, 1993; Yuan, 2004; JISS, 2005; Abbott and Collins, 2002; Cooke, et al. 2010). Therefore the purpose of this study is to identify young talented volleyball players using the talent identification model by Kusnanik (2013).

Methods

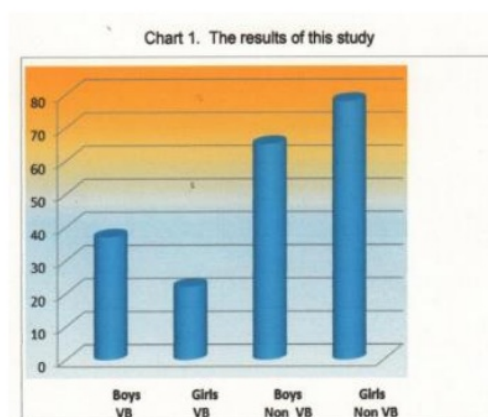
This type of the research is quantitative with approaching of description analysis methods. This study was conducted on 202 students (102 boys and 100 girls) of elementary school in West Surabaya. The subjects were Grade VI students with aged 11-13 years old, height at least 150 cm and active in physical education.

Data was collected by test and measurement including height, body mass, spam arm, sitting height, leg length, and standing reach for anthropometrical measurement; shuttle run, vertical jump 1 leg, vertical jump 2 legs, multistage fitness test for physiological testing; flexibility, throw and catch tennis ball for biomotorical testing.

Data was analysed using equation model of talent identification for volleyball. In addition, data was entried into talent identification software for volleyball (Kusnanik, 2013)

Results and Discussion

The result of this study found that there were 59 students who identified as young talented volleyball players (37 boys and 22 girls) while 143 students were identified as non volleyball (65 boys and 78 girls). It was approximately 29% of students who identified as young talented for volleyball players. The result can be seen in the Chart 1 below.



From the Chart 1 above showed that boys were higher than girls for identifying young talented volleyball players. On the other hand, girls were

higher than boys for identifying young talented for non volleyball players.

The example of using the equation model and software was Daiki (boy) 12 years old, height 158cm, body mass 50kg, sitting height 81cm, spam arm 162 cm, standing reach 203 cm, and leg length 95cm, vertical jump 2 legs 46 cm, vertical

jump 1 leg 39 cm, shuttle run 18 seconds, jump multistage fitness test, level 6 shuttle 7; flexibility 12 cm, throw and catch tennis ball 12 times. Based on the equation, it can be calculated :

$$\begin{aligned}
 D &= -48,522 + (0,139 \times 158) + (0,223 \times 81) - (0,075 \times 50) + \\
 &\quad (0,058 \times 162) - (0,020 \times 203) + (0,084 \times 95) - (0,065 \times 12) + \\
 &\quad (0,093 \times 12) - (0,072 \times 18,53) - (0,181 \times 6,7) + (0,029 \times 46) \\
 &\quad + (0,056 \times 39) \\
 &= -48,522 + 21,962 + 18,063 - 3,75 + 9,396 - 4,06 + 7,98 - 0,78 \\
 &\quad + 1,116 - 1,33416 - 1,2127 + 1,334 + 2,184 \\
 &= \mathbf{2,37614}
 \end{aligned}$$

Those data were also entried into the software, as shown on the tables below.

Table 1. TID volleyball for volleyball

IBAB (Identifikasi Bibit Atlet Berbakat) Bolavoli	
ID :	8
Nama :	Daiki
Jenis Kelamin :	Putra
Tinggi Badan :	158
Tinggi Dadak :	81
Bobot Badan :	50
Rentang Lengan :	162
Tinggi Raihan :	203
Panjang Tunggal :	95
Vertical Jump 1 Kaki :	39
Vertical Jump 2 Kaki :	46
Flexibility :	12
Lempar Tangkap Bola Tennis :	12
Shuttle Run :	18,53
Multistage Fitness Test :	6,7
Hasil :	2,376
Kategori :	BOLAVOLI

Table 2. The out put of TID for volleyball

															(Identifikasi Bibit Atlet Berbakat) Bolavoli Putera															28 Desember 2012														
																														12:51:59														
ID	Jenis Kelamin	Nama	TS	TD	BB	AL	TR	PT	VISUM	VISUM	Flex	LOBT	SR	MBT	Hasil	Kategori																												
8	Putra	Daki	158	81	50	162	353	95	39	46	12	12	18,55	6,7	2,576	BOLAVOLI																												

From Table 1 and Table 2 shown that the subject was identified as young talented volleyball player. There was no differences between the result from manual calculation using the equation model and the software.

In volleyball games, height is one of the key determinant of success. Height is important for the players in order to do some techniques properly such as smash and block. Hussein et al (2012) reported that volleyball players who have higher height will have highest vertical jump. Volleyball players who have a higher standing reach will be able to reach the ball above the net. The height of the volleyball net was 2,43 m for male and 2,24 m for female. Gabbett and Georgieff (2007) reported that standing reach between volleyball players were different significantly at the level of games. In many of sport small increases in body size and mass can impact significantly on performance. Assuming constant body composition, increased body mass increases both the energy demand as well as energy supply in most sports activities (Norton and Olds, 1996). It is difficult to win the volleyball games without doing service efficiently (Hayrinen, et al 2000).

Therefore, volleyball players need to have length legs in order to support jumping service.

Volleyball is an intermittent sport which needs a higher predominant energy system anaerobically. Volleyball players often doing some movement especially vertical jump or horizontal jump quickly. Besides that, volleyball players must have fast movement to the left, to the right, to the front or back in order to catch the ball. Hayrinen et al (2009) stated that efficiency of jump serve was correlated with speed of serve. Bloomfield (1998) reported that volleyball is an agility sport which depend on the ability of jump partially.

The equation model and software talent identification for volleyball players are easy to be applied by physical education teachers, volleyball coaches, parents in order to identify the students as young talented volleyball players or non volleyball players. Therefore this model can be used to make groups volleyball or non volleyball at students aged 11-13 years old. The advantages of this model were easy to apply and quick to analyze.

The students who identified as young talented volleyball players, will be developed their talent into volleyball clubs. The students who were not identified as young talented volleyball palyers, they were suggested to join other sports. The model of talent identification for volleyball was completed by software called "IBAB Bolavoli" of TID for volleyball. Therefore, it was talent identification model for volleyball which practice, effective and efficient to be applied.

Conclusion

The equation model and software of talent identification for volleyball can be used to identify young talented volleyball players. This model can be used by physical education teachers, volleyball coaches, and parents not only for identifying young talented volleyball players but also for evaluating the nurture of volleyball.

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