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Results of the Sports Talent Identification test for Management Information Systems: Borneo Sports Talent ID Software Implementation

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ABSTRACT

This research resulted in a data processing system application program for sports talent identification test results aged 11-15 years, which can accelerate the provision of information about the classification of potentially gifted children and recommendations for sports branches based on anthropometric data parameters and biometric data. The sample in the study was 50 students in Samarinda Kota and Samarinda Ulu sub-districts using the cluster area sampling technique. The data collection technique uses a talent identification test battery instrument. In completing this research, the author uses a database-based programming language in the Borneo Sports Talent ID software. The results showed: (1) Borneo Sports Talent ID can be used as a system for processing data on talent identification results effectively and efficiently, (2) Talent classifications were found, namely: 10% of children have potential, 22% of children have sufficient potential, 32% of children have less potential, and 36% of children have no potential, (3) Recommendations for potential sports: volleyball, rowing, soccer, fencing, swimming, gymnastics, and rock climbing, and athletics in running, jumping, and throwing events.

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Introduction

The rapid development of information technology and systems has affected system management in all fields, including sports. Improving the quality of sports information systems to increase competitiveness in the era of globalization can be done through the optimal use of information technology that supports work efficiency and effectiveness by the goals to be achieved. This can be offset by using a computer as a tool that can store and process data quickly and accurately.

The use of science and technology in the pattern of achievement development is the primary support in increasing achievement. Early identification of talent is a serious component in the recruitment aspect of athletes to be coached. According to Pahalawidi, one of the efforts made to get talented athletes is conducting talent scouting from an early age [1]. This means sports talent must be identified first to prepare athletes to choose the right sport.

Talent identification can be done using tests or instruments that have been made and tested. Instruments are parameters that predict performance quality, considering children's physical fitness, biometric learning abilities, and physical development [2]. Several studies related to talent identification can be found in various sub-disciplines of sports science including biometric learning, sports psychology, growth and maturity biology, and sociology [3-8]. Everything is interrelated, but the initial theory focuses on physical factors [9].

Talent scouting in Indonesia has been developed but has yet to be carried out intensively and specifically. So far, what has been done by practitioners in the field (coaches, physical education teachers, and sports coaches) to get talented athletes is done by taking athletes who win in a sports competition without particular analysis and tests. The data on the results of the giftedness test obtained or owned by the trainers are still separated or done manually in terms of their use, so their use still needs to be improved and requires a long process and time to find out the results.

Therefore, the author has the idea of producing an information system that is fast and correct in evaluating the anthropometric and biometric parameters of athletes using the Borneo Sports Talent ID software, which was developed in the 2022 FKIP Grant research.

Data processing information systems that will be examined refer to information systems that can be used to make decisions, coordinate, control, analyze, and visualize information within an organization. This information system of hardware and software serves as the basis for the operation of an organization. According to Feradhita NKD (2020), Information Systems work by collecting data from several online systems for analysis, then SI will report the results

of the analysis to help management make decisions, make plans, or solve a problem (https://www.logique.co.id/blog/2020/08/10/sistem-informasi-manajemen/).

Software is computer software. According to, computer software is a component in data processing systems in the form of programs to control the work of computer systems [10]. Added, the software is a command (computer program) that, when executed, provides the function and performance as desired [11].

This database-based software is a medium that can assist in recording statistical data on children's biometric and anthropometric components in detail and comprehensively. The data are (1) height, (2) sitting height, (3) body weight, (4) arm span, (5) throwing and catching a tennis ball, (6) throwing a basketball, (7) jumping gain, (8) running back and forth 5 meters, (9) sprinting 40 meters, and (10) multistage fitness test [12].

This data can be used to classify potentially gifted children and sports that are recommended or characterized by their respective biometric components. It can be used by coaches, physical education teachers, and sports coaches to identify and distinguish children's potential and talents as an initial selection in the coaching process.

With an information system for processing data from the talent identification test results, coaches can systematically identify a person's talent with potential in sports so that the person's success in the training process and peak performance can be estimated.

Method

This research uses descriptive methods with case studies. According to Toni D Susanto, A case study is basic research that is carried out intensively or in depth about a process, program, event, or activity. The sampling technique uses probability sampling with the cluster area sampling technique, which means that the author directly determines which areas are the research areas to provide accurate data. This regional sampling technique is often used in two stages, namely the first stage determines the sample area, and the next stage determines the people in the area by sampling as well [12]. The determination of the research area was carried out by assigning schools in Samarinda Kota and Samarinda Ulu Districts, namely Samarinda 1 Public Middle School and Samarinda 2 Public Middle School, as research locations.

The sampling technique uses stratified random sampling, which considers the existing strata in the population [12]. In this study, the sample used was students aged 11-15.

The data collected in this study were: 1) Height, 2) Sitting height, 3) Body weight, 4) Arm span, 5) Throwing and catching a tennis ball, 6) Throwing a basketball, 7) Vertical jump, 8) Running agility, 9) 40-meter sprint, and 10) Multistage Run. All data is inputted into the Borneo Sports Talent ID software.

Several steps that can be used in the Borneo Sports Talent ID software after the data is input are: 1) The results are consulted into the profile table of the sport of interest, 2) Then an assessment is carried out according to age and gender (table of assessment norms), 3) Then it is matched between test results and norms with sports profiles. The results will show children who have very potential, potential, enough potential, less potential, and no potential talents, as well as recommendations for sports by the child's biometric data.

Result and Discussion

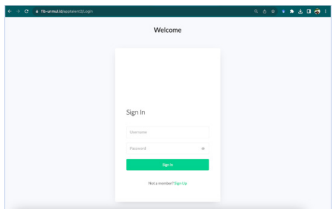
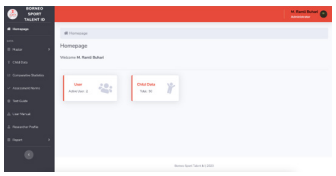
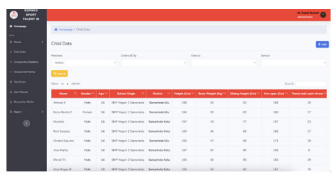
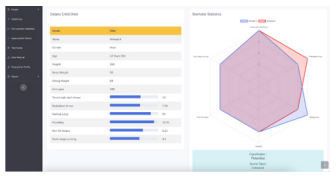
Result

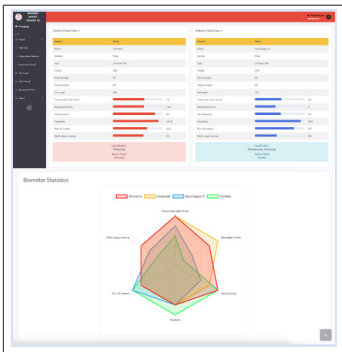
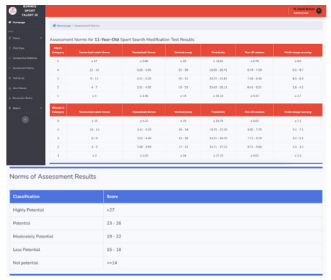
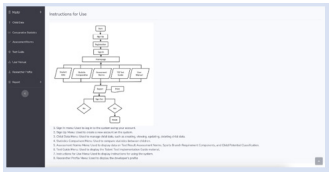
Borneo Sports Talent ID is an innovative medium that helps children aged 11-15 make informed decisions about interesting and suitable sports. It is software that allows children to adjust between physical characteristics and sports choices tailored to their sporting potential.

Several steps that can be used in operating the Borneo Sports Talent ID after inputting data are: 1) The results are consulted into the sports branch profile table, 2) An assessment is carried out that is adjusted for age and gender (assessment norm table), 3) Then the results are matched test with the norm with the profile of the branch of the sport. 4) For the results, children who have talents that are very potential, potential, quite potential, less potential and not potential will be displayed, as well as recommendations for sports by the child's biometric data.

Following are the Instructions for using the Borneo Sports Talent Id Software

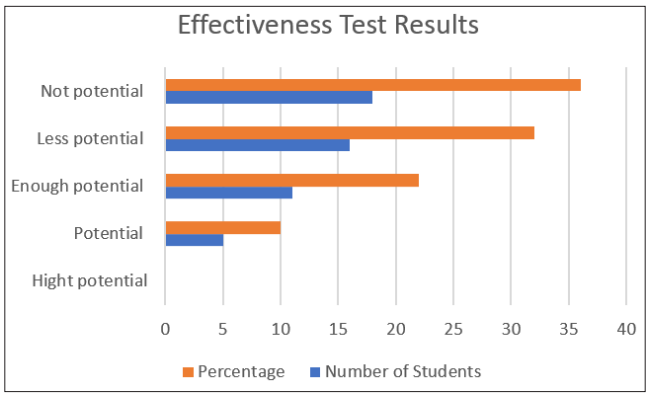
Table 1: Instructions for using Borneo Sports Talent Id Software

SOFTWARE BORNEO SPORTS TALENT ID	
Main Menu Screen Layouts	**Information**
	The initial view of Borneo Sports Talent Id
 	Display sign-in, used to enter the system using a user account
 	Child data menu display, used to manage child data, such as creating, viewing, updating, and deleting child data.

	Display menu for comparison of child data statistics used to compare statistics between children.
	The assessment norms menu displays data on the norms for assessing test results, the components of the needs of sports branches, and the classification of children's potential.
	User guide display menu used to display system usage instructions.
	Reporting of talent identification test results

After conducting tests and measurements on 50 students at SMP Negeri 1 Samarinda and SMP Negeri 2 Samarinda, the talent identification results were obtained as follows:

Graph 1: Talent Identification test Results



The results of talent identification showed that 10% of children had potential talent, 22% had quite potential talent, 32% had less potential talent, 36% did not have sports talent, and no children who had very high talent were found.

To map the potential giftedness of students in sports that can be developed in students at SMP Negeri 1 Samarinda and SMP Negeri 2 Samarinda can be seen in the following table.

Table 2: Potentially gifted Students

Talent Identification	SMP Negeri 2 Samarinda	SMP Negeri 1 Samarinda
Potential	Rock climbing	Volleyball
	Long Distance Swimming	Fencing
	Rowing	Rowing
	Football	Gymnastics
	Sprint	Short Distance Swimming
Enough Potential	Triple Jump	Football
	Hurdles	Bicycle
	Table tennis	Hurdles
	Sprint	Table tennis
	High jump	Discus Throw

Thus, the Borneo Sports Talent ID software product is effective and can be used to identify potential talent and obtain recommendations for sports based on its value.

Discussion

Improving the quality of sports information systems so that they are competitive in the globalization era is carried out by optimally utilizing information technology to support work efficiency and effectiveness by the targets to be achieved. This can be offset by using a computer as a tool that can store and process data quickly and accurately.

Borneo Sports Talent Software Id is a development of a talent scouting application that has been researched and used by previous researchers, such as a website-based talent scouting application created by the Ministry of Youth and Sports which provides a strict categorization of gifted children, only assessing gifted and non-talented children. The results of research conducted by Raja Bintang Abrori, which developed a software analysis for the potential for sports talent called TALENT ID as a tool to be able to view and analyze the results of anthropometric and biometric tests specifically for children aged 11 years only [13]. As well as the development of talent identification software that Kusnanik developed only focuses on one sport, namely in the form of Talented Athlete Identification (IBAB) football software, which is carried out by entering data from anthropometric measurements, physiological and biometric tests [14].

Borneo Sports Talent ID has broader development specifications and has differences from previous researchers, including the addition of a complete categorization with five talent categorizations, namely very potential, potential, quite potential, less potential, and not potential. Then, it is completed with statistical comparisons between children in the form of diagrams containing anthropometric data and children's biometric data, making it easier for coaches to see the strengths and weaknesses of children from the aspect of their physical abilities with the physical prerequisites needed for the sports recommended in the software.

In addition, the identification of children's talents is not limited to a certain age, as researched by Raja Bintang Abrori, who only focuses on 11-year-olds [13]. Researchers develop software for 11-15-year-olds, which in theory is at that age by the nursery stage, where the talent identification process in the context of scouting children's talents can be carried out.

Another advantage is that recommendations for sports that are displayed are not just one sport but are based on recommendations from 14 leading Olympic sports in DBON, namely badminton, weightlifting, archery, rock climbing, shooting, wushu, karate, taekwondo, cycling, athletics, swimming, artistic gymnastics, pencak silat, and rowing, and 3 sports that are popular with the public for the sports industry namely, football, volleyball, and basketball. This means that the software can be used for the long term as suggested by the Ministry of Youth and Sports, that in identifying children's talents, it is adjusted to the sports that are prioritized for the Olympics only.

After conducting tests and measurements on several students in Samarinda Kota and Samarinda Ulu, it was found that this software is a tool that can help provide information about the potential value of giftedness, biometric, and anthropometric abilities and can provide recommendations for sports that can be used as a reference for choosing the appropriate sport. Abilities possessed by children.

The Objectives of Designing this System are

1) To produce an information system that is fast and correct in evaluating the anthropometric parameters of gifted students before further coaching, 2) To produce an information system that is fast and correct in determining the suitable form of training by physical and mental qualities children's biometric skills, 3) Generate a model of information system design for data processing of talent identification test results with a database, in the form of process/functional models, data models, program modules, and software interfaces.

In terms of the aspect of anthropometric measurements carried out to know the dimensions of the measurements in identifying the physical potential to find potential athletes. Furthermore, the measurement results will be stored as a document whose data can be needed again at a later date. This anthropometric measurement can be carried out periodically every 6 months to determine changes in the dimensions of the human body from time to time.

According to Aisyah Yuri, Anthropometrics relates to the morphological structure and ideal body shape of children, such as height, limb length, and athlete weight. Anthropometry is very influential in the efficiency of athletes' movements (https://soloabadi.com).

The important point of this anthropometric test is that to select prospective athletes, they must first look at their physical form. For example, if you want to find a basketball player, it's a good idea to find a child who has a tall stature, long arms, long legs, and so on. When looking for weightlifters, you should look for children who are not too tall, have short arms and legs, and so on.

Meanwhile, biometric measurement is an important factor in identifying sports talent. The Borneo Sports Talent ID software developed is a medium that can assist coaches in recording the physical and biometric components of prospective athletes in detail and comprehensively. This data is in the form of speed, agility, coordination, strength, power, and endurance.

From these data, it can be seen the classification of potentially gifted children, as well as sports that are recommended or by their respective biometric components. With this data, coaches can systematically identify a person's talent with potential in sports, so that it is estimated that the person will succeed in the training process and achieve peak performance.

This is in line with research results and that the biometric components that an athlete needs to own and develop to perform optimally are endurance, agility, speed, balance, and flexibility [15, 16]. Essential biometric components or biometric performance abilities are endurance, strength, speed, coordination, and flexibility.

The athlete's biometric ability is a strong foundation for supporting a high-training program so that athletes have the potential to develop more [15]. Biometric ability, in this case, namely physical condition, is a requirement that must be possessed by an athlete to improve and develop optimal sports performance. Therefore, his physical condition needs to be developed and improved according to the characteristics and needs of each sport.

Thus, knowing children's biometric skills from an early age will have an impact on several things, including Athletes will be able and quickly learn relatively complex skills, not get tired easily when participating in training or competitions, and training programs can be completed quickly without many obstacles. This is the opinion of that biometric abilities that have developed if appropriately managed by athletes when competing, both for a long duration and for a short duration will not drain their energy [17, 18].

Conclusion

The conclusion of this research is found: (1) Borneo Sports Talent ID can be used as a system for processing data on talent identification results effectively and efficiently, (2) Talent classifications were found, namely: 10% of children have potential, 22% of children have sufficient potential, 32% of children have less potential, and 36% of children have no potential, (3) Recommendations for potential sports: volleyball, rowing, soccer, fencing, swimming, gymnastics, and rock climbing, and athletics in running, jumping, and throwing events.

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