Construct Validity for Talent Identification Test Athletic with Aiken's V

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Abstract—The purpose of this study is to develop a talent identification test construct for athletics. Content validity is used to test the instrument. Testing is done by using professional judgment and involving experts in learning and athletic training. The analytical technique used is the validity coefficient of Aiken (V) to determine the relevance of each construct of the test. This study used five rater with the assessment scale ranging from 1 to 4 with criterion 1(irrelevant), 2 (less relevant), 3 (relevant), and 4 (very relevant). There are ten test items from the assessment that are evaluated by experts. The value of validity coefficient of Aiken's V for the athletic talent identification test was 0.87 to 0.93.

Keywords—construct validity, talent identification test, athletic.

I. INTRODUCTION

The sports coaching system in Indonesia is determined by sports organs that considers the coaching of potential and early childhood talents as the main foundation. Further coaching is carried out in a systematic, tiered and sustainable manner so as to post desired level of performance. Early childhood development is carried out by fostering potential and talent as the main foundation. The next guidance is done continuously. Each stage reaches a higher level, and, therefore, it is expected to post high performance in the end.

The target of talent developmentis a potential athlete. This is a candidate for athletics who has proven scientifically and factually have prospects to be developed to achieve international prosperity through tiered and sustainable coaching. The principle of mentoring is based on the long-term athlete coaching. Parameter of successful talent development is the identification of talent candidates of national flagship athlete.

The scope of the development of top national athletes aspiring talent involves scientific and systematic effort to condition and empower prospective athletes in order to qualify at the national and international levels. Developing talent of athlete candidates from an early age should systematic and technological approach to science.

To be able to exercise maximal, there is need to be supported by talents. [1] argues that success in sports (especially teams) is the result of a complex interaction of various variables. Therefore, to bechampion one must not neglect any of the key variables. In the sports setting, there are two assumptions used in assessing the giftedness. Firstly,in a given population there will be at most 15% of individuals who have sports talent, the rest are less talented. Secondly, all members or individuals in a population have talents, only that not all everyone have accurate information about their potential to certain sports.

The study of the development of sports technology has an impact on the achievement sports development system, especially on predictions in terms of physical and physiological abilities that can be prepared early on for potential athletes. Physical abilities and physiological functions can be predicted according to the science of motion development and movement learning and physiology. From the studies, scientific strategies that support the candidates can be prepared subject potential athletes to them as early as possible.

An analysis of various international sports competitions show that certain athletes are suitable for certain sports. Some have the necessary psychological and mental characteristics,a reliable physical potential, a good technical skillsand tactics, and experience in various competitions. Thebest sports achievement will be made by developing the prerequisite aspects during childhood and youth. An athlete can reach the peak of achievement, if he starts practicing for sports that have been guided by talent from the start and supported by the capacity of good public sports performance [2]. This suggests that the presence of elite athletes is closely linked to prospective athletes who have more ability that to underlie related sports skills.

In an achievement sports coaching system, athlete recruitment is an important step in ensuring optimal performance. The recruitment system is the beginning of the sport coaching plan of achievement. In a recruitment system, there are stages of selection and determination of candidate athletes who meet all the requirements and criteria that have been established. Talent scouting efforts for prospective athletes in Indonesia have not been maximized. Adequate human capital has not been fully utilized in sports performance enhancement. With the number of human resources that many assumed, a lot of seeds are buried in. There needs to be an effort to find these crucial seeds. Early identification and talent development programs should be implemented to create opportunities through existing sports, especially those that support prioritized sports attractiveness. With such efforts,children and

teenagers withhidden sporting talent get the opportunity to be developed to the highest achievement.

II. RESULT

Talents can be described as capabilities in a field withsuperior quality. With such quality, one is expected to have a great opportunity to record high achievements and prominence in the field. Giftedness is the concept is linked the term talent. Gifted and giftedness imply that there is one or more advantages in a person that makes the them show the pros of being different from others. Having superior potential, one is expected to have a great opportunity to post high achievements and prominence in the field. The manifestation of giftedness is in the form of high achievement, therefore talent can also be understood to have chances of giving the best performance.

Gifted children are those who are able to achieve highly because they have superior abilities [3]. The abilities, both potential and tangible, include general intellectual level, special academic abilities, creative-productive thinking skills, leadership abilities, abilities in the field of arts, and psychomotor abilities. From the above description gifted children can be defined as those who potentially have the ability to achieve highly in a particular field.

Sports talent has facilitates the potential that someone has for high achievement in certain sports activities. Giftedness in sports includes special elements such as:special sports abilities, sports-specific creativity; and specific attachments to the task. It is a special ability that appears from certain components athletes must display to perform optimally. Talented athletes are those who have special potential to thrive in sports. The special abilities possessed have been formed and can be realized through appropriate coaching. Special abilities in the concept of sports talent are related to the internal factors in an athlete. The results of the Cratty study, explaining that the internal factors of athletes that support giftedness are biological structural factors, social factors, physiological factors; and psychological factors [4].

Mastery of sports skills occurs through the learning process.Giftedness is identical to learning characteristics and abilities. The gifted children are those who have the ability to learn quickly in a particular field. The success of a child to achieve in prominent sports is determined by his intellectual ability, knowledge and skills mastered. But then there are questions that arise. Can predictable potential of children today be a benchmark for the achievement of success later in adulthood? From such a question it is necessary to find a set of tools to help gifted children measure the future potentials with high probability.

The identification of sports talent is an attempt made to estimate the chances of talented athletes in sports achievement, to be successful in undergoing training programs so as to achieve peak performance [5]. There are various formulations of sports talent scouting that have been written by experts whose daily lives have been in the world of sports talent identification. Sporting talent as a potential possessed by a person to excel in certain sports activities or branches [4]. The purpose of sports talent identification, according to him, emphasizes the identification of sports talent, with reference to the suitability of potential and interest of athletes. Formulation of other sports talent identification objectives expressed in the national forum of the Indonesian sports scholar association in the identification of sports talent aims to predict with high probability how much chances of success a person has. Prediction is taken by looking at indicators of giftedness), include: achievement or performance that has been achieved atltet; the tempo of achievement improvement; the level of stability in the improvement of achievement; the tolerance of the training load, and a positive intrinsic motivation [3]. The emphasis of sports talent identification objectives in the formula lies in the effort to predict athletes' odds on the basis of sporting indicators they have.

Some principles of identification of sports talent can be used as a guide to direct the process of talent scouting. The principle of talent identification needs to be elaborated and understood, so that each step of the talent identification process can reach its destination. Several principles of talent incorporation which include: conducting a complete analysis of the physical and mental condition of the athlete, performing selection based on key determinant factors including such as anthropometric characteristics, that is height, and relation to certain physical parameters like speed, endurance, coordination, and ability to play [3]. Conducting evaluation and selection based on datachildren's attitudes toward sports, participation in sporting activities, and the benefits and characteristics of children's sports performance.

Achievement in sports require a special biological profile such as understanding the features of biomotor capabilities and strong psychological characteristics. The main criteria in talent identification are: health, biomotoric quality, heredity as supported by sports facilities, climate and expert availability [2]. The criteria for identification of sports talent are, biological aspects including the body's basic potential or ability, organ function, and posture and body structure, the psychological aspect which includes intellectual, motivational, personality, and nerve work, age which includes chronological age and age psychologically, offspring,and environmental variables [6].

The success of the talent development program is the support that provides the right assistance and encouragement to all individuals who are at all levels of coaching. The development of talent of national athlete candidates is done with the application of science and technology in the sports science. Furthermore to realize a talent, development environment must have a steady coaching system. Some important aspects for talent development are (a) the mechanism of steps that can be managed clearly. This is something that must be understood by trainers, athletes, administrators, and the government; (b) adequate quality and number of trainers; (c) adequate organizational and financial support; (d) availability of facilities for training and competitions; and (e) utilization of sports science backup.

In line with the aspect of sports talent development, there are 4 important steps that in initiating the development of sports talent. They include (a) preliminary study; (b) planning; (c) evaluation

and; (d) learning. One's talent in sports is an ability that related to one's attitude and shape [7]. Implementation of talent identification can be done through the following steps:

a. Conduct a complete analysis of physical and mental conditions in accordance with the characteristics of the sport.
b. Conduct general and special selection using instruments of the sport concerned.
c. Performing selection based on anthropometric characteristics and physical abilities adapted to the phases of physical development.
d. Evaluation based on comprehensive data with attention to every child on the sport in and out of school.

III. METHODS

Five experts in learning and athletic training validators and help in approving the talent identification test. The experts assess the draft of the talent identification test using a scale of 4 from Likert. Assessment is carried out on the tenth item of the talent identification test. The ten grains are divided into 2 main factors: (1) anthropometric measurement factors and (2) physical or biomotor measurement factors.

Validation using analytical techniques from Aiken (V) (1985) is done. Aiken uses the calculation formula $V = S / [n (c-1)]$, where V is the value of the validity coefficient of Aiken, S is the value of the rating scale minus 1, n is the number of assessors or experts used in the validation, and c is the highest score in the rating scale.

Below is the table value of the validity coefficientcompared with the value of the calculated coefficient of validity. If, the calculated coefficient of validity value is higher than the value of the table validity coefficient of Aiken, then the item is declared valid.

TABLE I.   TABLE OF VALIDITY COEFFICIENT VALUES FROM AIKEN (AIKEN, 1985).

TABLE 1
Right-Tail Probabilities (p) for Selected Values of the Validity Coefficient (V)

No. of Items (m) or Raters (n)	2 V	2 p	3 V	3 p	4 V	4 p	5 V	5 p	6 V	6 p	7 V	7 p
2							1.00	.040	1.00	.028	1.00	.020
3							1.00	.008	1.00	.005	1.00	.003
3			1.00	.037	1.00	.016	.92	.032	.87	.046	.89	.029
4					1.00	.004	.94	.008	.95	.004	.92	.006
4			1.00	.012	.92	.020	.88	.024	.85	.027	.83	.029
5			1.00	.004	.93	.006	.90	.007	.88	.007	.87	.007
5	1.00	.031	.90	.025	.87	.021	.80	.040	.80	.032	.77	.047
6			.92	.010	.89	.007	.88	.005	.83	.010	.83	.008
6	1.00	.016	.83	.038	.78	.050	.79	.029	.77	.036	.75	.041
7			.93	.004	.86	.007	.82	.010	.83	.006	.81	.008
7	1.00	.008	.86	.016	.76	.045	.75	.041	.74	.038	.74	.036
8	1.00	.004	.88	.007	.83	.007	.81	.008	.80	.007	.79	.007
8	.88	.035	.81	.024	.75	.040	.75	.030	.72	.039	.71	.047
9	1.00	.002	.89	.003	.81	.007	.81	.006	.78	.009	.78	.007
9	.89	.020	.78	.032	.74	.036	.72	.038	.71	.039	.70	.040
10	1.00	.001	.85	.005	.80	.007	.78	.008	.76	.009	.75	.010
10	.90	.001	.75	.040	.73	.032	.70	.047	.70	.039	.68	.048
11	.91	.006	.82	.007	.79	.007	.77	.006	.75	.010	.74	.009
11	.82	.033	.73	.048	.73	.029	.70	.035	.69	.038	.68	.041

IV. CONCLUSION

The value of the Aiken V validity coefficient for test identification for the lowest athletic test identification is 0.87 and the highest is 0.93. A form of talent identification test is obtained as follows:

1. Anthropometry
   a. Height
   b. Weight
   c. Arm Range
   d. Leg Length
2. Psychomotor
   a. Sit and Reach
   b. Standing broad jump
   c. Sprint 40m
   d. Step frequency of 10 seconds
   e. Shocken Test (Medicine Ball 3 kg female and 4 kg male)
   f. Run 800 m

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