Development of the sepak takraw basic skills test for junior athletes

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ABSTRACT

Problems: Basic skills are needed in the sport of sepak takraw, so in this case an instrument is needed that can be used as a valid measurement tool to support the coaching and training process for junior athletes aged 12-15 years. **Purpose**: This study aims to develop a basic sepak takraw skills test for athletes aged 12-15 years based on the validity of the content and empirical validity carried out. **Methods**: The research method used is Research and Development (RnD) through 7 stages of research. The research subjects used amounted to 20 samples for small scale, and 40 samples for large scale. The data analysis technique used uses quantitative descriptive analysis. **Results**: The expert validity test provides recommendations that the instruments that developed already worth using. Based on the results of the validity and reliability test, it shows a content validity value of 0.89 and a feasibility value of 90.3%. **Conclusion**: The results show that the developed instruments have qualified as measuring instruments and are feasible to apply to measure the basic sepak takraw skills of junior athletes.

Keywords: development, test instruments, sepak takraw.

Introduction

Sport is a series of regular and systematic movements to improve movement skills, improve the quality of life and improve achievements in sports (Ayarra et al., 2018). There are three scopes in sports, including: 1) achievement sports, 2) recreational sports, and 3) educational sports (Young et al., 2021). Achievement sports are sports that foster and develop sportsmen in a planned, tiered, and sustainable manner through competitions to achieve achievements with the support of sports science and technology (Khurrohman et al., 2021). Sepak takraw is one of the sports that is included in the sport of achievement.

Sepak takraw is one of the popular sports so that it is in great demand by the public in Indonesia (Muhyi et al., 2021), including in the Barlingmascakeb Regency area which consists of the PSTI sepak takraw team of Banjarnegara Regency, Purbalingga Regency, Banyumas Regency, Cilacap Regency, and Kebumen Regency. Sepak takraw is a sports game carried out using rattan or fiber balls (takraw) which are played in a field with a length of 13.40 m x width of 6.10 m and a net height of 145-155 cm (Ibrahim et al., 2022). The game is in dire need of teamwork and basic skills to gain victory.

The basic skills of takraw are the main support in the success of achieving the goals of the game (Huang et al., 2021). The basic techniques of takraw consist of soccer, kickball, kickball, kickball, heading, thighs, chest, kicks, kicks, smash, and blocking (Hidayat et al., 2016). From these basic skills a good technical unity is formed in athletes which will support the successful application of tactics on the field. Therefore, the level of basic takraw skills is an important part of the process of developing good athletes, to measure the ability of their basic skills.

Coaches play an important role in supporting athletes' abilities during practice and competition (Hardinoto et al., 2017). At the time of a match or participating in a tournament, an athlete is chosen to represent the club. Therefore, it is important for coaches to apply a test in the selection of athletes to represent the club so that the resulting achievements will be even better (Barnett et al., 2015). This is in

line with the statement which states that to identify the abilities of prospective athletes, it is no longer only using the results of mere observation or subjective assessment, coaches need a selection process through tests to see the skills possessed by each prospective athlete. The basic skills of takraw and the identification of athletes' abilities are the basis for creating an objective, valid and reliable tool (O' Brien et al., 2016). Previous research showed that the test kits for men and women's sepak takraw athletes in Central Java were in the "normal" category. But the test is not limited by age. From this research, it is necessary to follow up to develop a measuring tool for basic takraw skills that is in accordance with the characteristics of junior athletes aged 12-15 years.

A measuring tool or skills test can be said to be good if it meets three main requirements, namely valid, reliable and objective (Syafei et al., 2020). Measuring tools must also be adapted to the characteristics of the child's development (Goddard et al., 2020). Because adolescence is a process of development both physically, psychologically, and intellectually so it requires a more extra approach (Engel et al., 2018). This is of course in line with the theory of development in children which states that the ages of 12-15 years are in a phase of increasing training and special training so that a tool is needed to see their development. The next problem is that there is no instrument for basic takraw skills that is suitable for junior athletes aged 12-15 years.

This research will develop an objective instrument to facilitate the takraw coach in the coaching process and help to achieve better athlete performance in the sepak takraw branch.

Method

This research is a research and development to produce a product in the form of a takraw basic skill test instrument. The implementation of development and research procedures in this study adapts the research and development steps developed by (Gall et al., 2003) and has been modified. Data collection uses quantitative descriptions. The data source was obtained through a questionnaire using a likert scale of 1-5. Data collection comes from expert assessment of measurement tests, child growth and development experts, takraw coaching experts, players, and takraw coaches or coaches. The data analysis used is a descriptive analysis obtained from the assessment of several experts, coaches and players as a test feasibility test. Then the validity and reliability test of the sepak takraw basic skill test instrument is carried out through the results of small and large-scale tests.

Result

Product Validation

Validation of initial product design tests conducted by involving experts in the field sepak takraw, test and measurement expert, growth expert and child development. The results obtained are as follows:

Table 1. CVR Results

No	Expert Validator	Validity Value	Information
1	Takraw expert (2)		
2	Measurement test expert	0.89	Valid
3	Child growth and development expert		

Based on the presentation of the results of content validity assessed by expert judgment, the average content validity result was 0.89. If the mean value is seen from the Aiken's V table with the number of 4 expert assessors, the validity value applied is 0.88. From the results obtained through expert assessment, it shows that the test instrument developed is in accordance with the theoretical construct of takraw. As for the results of product feasibility tests from the assessment of several experts, as follows:

Table 2. The results of the feasibility test

No	Validation	Percentage
1	Measurement test expert	88% (Very good)
2	Child growth and development expert	90% (Very good)
3	Takraw expert	93% (Very Good)
4	Media Expert	86% (Very good)

Based on the explanation above, it shows that each expert's assessment of the feasibility of the product is in the very good and good category. Measurement test experts show a percentage of 88%, child development growth experts by 90%, and takraw experts show a feasibility value of 93%. While media experts show a percentage of 86%.

Validity and Reliability Test

A small-scale trial was carried out on 20 takraw players at the youth level of Brebes Regency. Before implementation, the sample was given directions regarding the procedures for the skills test to be developed, then the researcher gave an assessment sheet to be filled in by the sample regarding the test that had been carried out. The following are the results of a small-scale product trial assessment. The results can be seen in the table below:

Table 3. Test the validity and reliability on a small scale

Validity test				
No	Analysis	Count	Rtable	Inform.
1	Eye-Foot Coordination	0.87	0.444	Valid
2	Basic Skills	0.86	0.444	Valid
Reliability Test				
No	Analysis	Reliability Value		Inform.
1	Eye-Foot Coordination	0.874		High
2	Basic Skills	0.868		High

The table above shows the results of the product validity test of 0.87 and 0.86, while the reliability test obtained results of 0.874, 0.868. These results can indicate that from small-scale trials, the initial product was stated to be valid and reliable.

Furthermore, large-scale tests were carried out. The large-scale trial was carried out by 40 players from 3 takraw teams, namely from Banyumas Regency, Kebumen Regency, and Banjarnegara Regency aged 12-15 years. Before the implementation, the sample is given directions regarding the procedures for the skill test to be developed, then the researcher provides an assessment sheet to be filled out by the sample regarding the test that has been carried out. Here are the results of the assessment of large-scale product trials:

**Table 4. Test the validity and reliability on a large scale**

Validity test				
No	Analysis	Count	Rtable	Inform.
1	Eye-Foot Coordination	0.895	0.312	Valid
2	Basic Skills	0.931	0.312	Valid

Reliability Test			
No	Analysis	Reliability Value	Inform.
1	Eye-Foot Coordination	0.884	High
2	Basic Skills	0.907	High

The table above shows the results of the product validity test of 0.895 and 0.931, while the reliability test obtained results of 0.884 and 0.907. These results can indicate that from large-scale trials, the product is declared valid and reliable.

Final Products
The following is the final product that has gone through various stages from preparation to trial use:
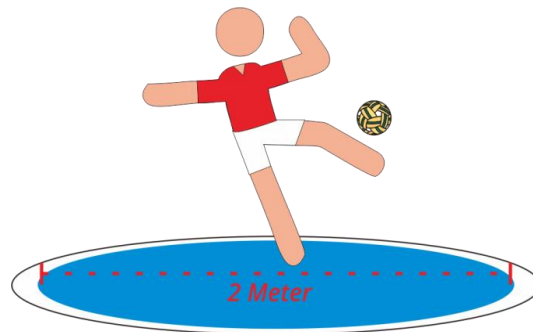
Figure 1. Takraw basic skills test

Instructions for carrying out the test as follows: 1) When the tester says ready, the testee stands in the middle of a 2m diameter circle. 2) When the tester says "yes", the testee performs the skills of petting a soccer ball (right-left), soccer ball (right-left), thighs (right-left) and heading for one minute each. 3) The results of these skills will be counted as a score if: a) The ball bounces overhead. b) The ball and the testee don't come out of the circle. 4) The amount of each ball handling skill that can be counted as a score is entered on the available scoring format/sheet. 5) The overall results are then accumulated into one final result.
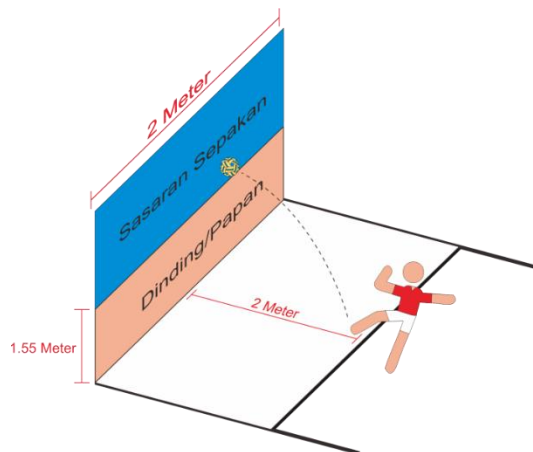
Figure 2. Eye-foot coordination test

Instructions for carrying out the test as follows: 1) When the tester says ready, the testee stands behind the line with a distance of 2 meters. 2) When the tester says "yes" the tester kicks towards the wall with a height of 1.5 meters. 3)Each performed for 1 minute. 4) The results of these skills will be counted as points if: a) The ball is kicked with the right foot and received by the left foot and vice versa. b) A kick

ball is declared a point if the kick is above the target line of 1.5 meters. 5) The amount of each ball handling skill that can be counted as a score is entered on the available scoring format/sheet.

Discussion

The validity of the test refers to the ability of the test, namely the extent to which the measuring instrument is able to measure what it is supposed to measure (Sekulic et al., 2019). A valid takraw skill test is able to measure a player's ability in takraw skills. As with the basic takraw skills test in this study, it has been developed through several stages to become a valid measuring tool. The takraw basic skills test has content and empirical validity values to become a measuring tool capable of measuring each player's takraw skills. Based on the results of the data analysis carried out, the content validity of this test was 0.89, while the empirical validity using the retest test carried out had values of 0.895 and 0.931, while the test reliability values were 0.884 and 0.907. These results indicate that the developed test meets the requirements to be a valid measuring tool (Declève et al., 2021).

This takraw basic skills test consists of eye-foot coordination, soccer, turtledove, memha, and heading. This technique is the main part in takraw and is always shown by every player during the match (Zarei & Ramkissoon, 2021). The basic takraw skills test that has been developed has gone through several stages of assessment from experts in their fields, so that it becomes a valid measuring tool for measuring players' basic takraw skills. This measuring tool was developed with the actual takraw game guidelines, so that the items contained in this test already represent all the techniques that exist in takraw matches. This is in line with the statement that takraw is a complex sport, combining several techniques into one unit to gain points in a match (Kurniawan & Firdaus, 2020). In addition, technique plays an important role in takraw to get maximum results (Chew et al., 2017).

The takraw basic skills test that was developed has a validity value obtained from expert judgment and sample trials. The results of this study are the development and support of previous research, as in research (Hanafi, 2020) namely the development of the takraw skill test, but it is still limited only to the blocking technique. Furthermore, research from (Kaharuddin et al., 2019) who developed the development of takraw tests only for professional athletes, so that broader development is needed for the adolescent age category.

The results of this study have proven to be a valid measurement tool for measuring differences in the basic takraw skills of each player, so this test can be used as a research instrument.

Conclusion

Based on the results of data analysis Research, it can be concluded that the development of basic sepak takraw skill instruments is valid and feasible for use in the process of measuring the abilities of junior athletes aged 12-15 years. From the results.

This research is a new measuring tool that aims for better development and coaching process at a young age in the sport of sepak takraw. For this reason, coaches or coaches it is expected to use this measuring instrument especially for the basic selection system of junior athletes.

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