



P-ISSN: 2394-1685
E-ISSN: 2394-1693
Impact Factor (RJI): 5.38
IJPESH 2023; 10(2): 36-41
© 2023 IJPESH
www.kheljournal.com
Received: 24-01-2023
Accepted: 30-02-2023

Nur Alfitra Salam
Department of Sport Science,
Faculty of Sport Science,
Yogyakarta State University,
Indonesia

Cerika Rismayanthi
Department of Sport Science,
Faculty of Sport Science,
Yogyakarta State University,
Indonesia

Triyas Krismantoro
Department of Sport Science,
Faculty of Sport Science,
Yogyakarta State University,
Indonesia

Arif Kurniawan
Department of Sport Science,
Faculty of Sport Science,
Yogyakarta State University,
Indonesia

Corresponding Author:
Nur Alfitra Salam
Department of Sport Science,
Faculty of Sport Science,
Yogyakarta State University,
Indonesia

Implementation of soccer game modification on gross motor skills of mentally disabled children

Nur Alfitra Salam, Cerika Rismayanthi, Triyas Krismantoro and Arif Kurniawan

DOI: <https://doi.org/10.22271/kheljournal.2023.v10.i2a.2833>

Abstract

The purpose of this study is that by modifying the game of football it can help with basic movement problems experienced by mentally retarded children. This research is experimental with a one group pretest-posttest research design. The population in this study were mentally retarded students from SLB-C Cendrawasih Makassar. The number of samples used in this study amounted to 10 people. The sampling technique uses purposive sampling or determination with certain criteria, namely as follows: 1. is male, 2. has the ability to run. The instrument in this study used a basic movement ability test (Barrow Motor Ability Test), one of the tests used was Zig-Zag running. The results of the basic motor skills test were known in the gross motor skills pretest group with an average value (mean) = 13.20 and a standard deviation = 6.86 with a significance value of 0.000 and a gross motor skills posttest group with an average value (mean) = 11.21 and a standard deviation = 6.93 with a significance value of 0.001 where the value of $p < 0.05$ which means that there is a significant effect of modifying the game of football on the gross motor skills of mentally retarded children at SLB-C Cendrawasih Makassar.

Keywords: Game modification, gross motor skills

Introduction

Education is part of the process of empowering everyone, moving from ignorance to knowing and transforming the whole person himself (Gumantan *et al.*, 2021) ^[8]. In the current era of globalization, humans are even required to be able to keep up with the times in order to continue to survive. Therefore, formal and informal educational institutions have a great influence, especially in physical education and health in helping children with special needs live a better life, achieve better health and well-being, self-confidence and for excellence. Basically education is also an effort to develop the abilities that exist in a child according to his abilities. In organizing education there is no coercion that is beyond the ability of the child, because coercion on children will result in retarded child growth and development (Septaliza, 2021) ^[26]. Education does not only come from school but can also come from social interactions that take place in social life. Furthermore, education is not limited in terms of age because education is intended for everyone and all ages (Sukriadi & Arif, 2021) ^[28]. Education is the most important investment for managing life in the long term (Alfianing *et al.*, 2022) ^[2]. Providing adaptive physical activity is expected to help children to coordinate with their bodies so that they can improve gross motor skills with the aim of helping children carry out daily activities independently (Sania & Kafrawi, 2019) ^[22].

Physical education and health are an integral part of education globally. Physical education is one part of the world's important role in education to develop motor, emotional and psychomotor aspects (Taufik, 2018) ^[31]. Physical education plays several important roles in influencing the development of children with special needs considering the various positive impacts that can be achieved through practice (Hidayatullah *et al.*, 2020) ^[11]. Specifically physical education will improve health, develop physical skills, potential organs in the body, functional motor skills and instill moral qualities such as patriotism, cooperation, courage, perseverance and self confidence (Aprilita *et al.*, 2021) ^[3]. In Permendiknas No. 70 of 2009 education inclusive is defined as an education delivery system that provides opportunities for

all students with disabilities and have potential intelligence and/or special talents to participate in education or learning in an educational environment together with students in general. In its implementation, inclusive education aims to provide the widest opportunity for students with special needs and realize the implementation of education that respects diversity, is not discriminatory for all students who have physical, emotional, mental and social disabilities, or have the potential for intelligence and/or special talents to obtain quality education in accordance with their needs and abilities (PPK-L, 2011) [15]. Then in Government Regulation NO. 13 of 2020 concerning Adequate Accommodation for Students with Disabilities in Article 20 paragraph 2 "Local governments are obliged to facilitate the establishment of Disability Service Units in early childhood education, basic education and secondary education (PP, 2020) [14].

Besides that, the government has guaranteed education for children with special needs in the 1945 Constitution (amendment) article 31 paragraph 1 "Every citizen has the right to education" and strengthened by Law no. 4 of 1997 concerning persons with disabilities, article (5) "Every person with disabilities has equal rights and opportunities in all aspects of life and livelihood". Supported by article (6) which states: "Every person with disabilities has the right to: paragraph (1): Education in all units, types, pathways and levels of education. Education for children with special needs is supported through various types of education, one of which is adaptive physical education. Adaptive physical education is a process through physical activity for children with special needs which aims to improve physical fitness and develop motor skills. Children with special needs have experienced movement problems, both fine motoric and gross motoric. Gross motor skills include locomotor, non-locomotor and manipulative skills. This motor disorder occurs as a result of reduced sensitive motor skills, reduced organ function, and limited ability to learn, resulting in slow motor skills in children with special needs. For example, mentally retarded children Gross motor skills include locomotor, non-locomotor and manipulative skills. This motor disorder occurs as a result of reduced sensitive motor skills, reduced organ function, and limited ability to learn, resulting in slow motor skills in children with special needs. For example, mentally retarded children Gross motor skills include locomotor, non-locomotor and manipulative skills. This motor disorder occurs as a result of reduced sensitive motor skills, reduced organ function, and limited ability to learn, resulting in slow motor skills in children with special needs. For example, mentally retarded children (Agustin & Anita K, 2017) [1]. Physical education for mentally retarded children requires a special design for optimal growth and development of their motor skills (H Louk & Sukoco, 2016) [9].

Mentally retarded children are children with cognitive impairments, ambiguity in verbal expressions and even disturbances in body movements. This is certainly no doubt that will impact their entire family. Therefore, development is stunted in most areas, it is almost difficult for children to adapt to the social environment (Xu *et al.*, 2016) [36]. In addition, according to Kemis and Ati, mentally retarded children are individuals with intelligence who have significantly below normal intelligence with an IQ score equal to or less than 70. There are several ways to classify mentally retarded children, including (1) Classification based on learning needs including a) limited educational level known as a slow learner with an IQ of 70-85, b) educable mentally retardable with an IQ of 50-75 or 75, c) mental retardation

that can be trained with an IQ of 30-50 or 35-55, d) dependent or severely mentally retarded with an IQ of 25 or 35. (2) Psychological classification based on psychometric criteria includes a) mild mental retardation with an IQ of 55-69, b) moderate mental retardation with an IQ of 40-54, c) severe mental retardation with an IQ 20-39 and d) severe mental retardation with an IQ level of 20 and below. (3) Biological medical classification, including a) degree of delimitation IQ 68-85, b) mild disability with IQ 36-51, c) moderate mental retardation with IQ 35-20, and d) very severe disability with IQ level below 20 (4) Clinical classification based on physical characteristics as follows

- a) Decreased or mongoloid syndrome.
- b) Hydrocephalus is a large head filled with fluid.
- c) Microcephaly is a head size that is too small and/or macrocephalus is a head size is too large (Satria *et al.*, 2020) [25].

The physical fitness of children with special needs such as mentally retarded children is influenced by several factors such as community environmental factors, family environment, genetic factors (heredity), parental knowledge factors, physical activity, nutritional status, infrastructure and family economic factors. (M. Sari, 2016) [24].

According to Imandala (2012) the appearance of mentally retarded children who are less normal in mentally retarded children causes problems that occur in gross motor skills which include locomotor, non-locomotor, and manipulative. Gross motor skills are higher than just reflexes as a prerequisite for sports, dance and other activities in later stages of development. Gross motor skills are aspects related to body movements and postures such as the ability to sit, throw, kick, run and others (Syamsuddin, 2019) [30]. Gross motor skills as a whole are built in toddlerhood and will get better with age into adulthood (Sumaryanti, 2015) [29]. Therefore, gross motor skills are needed from an early age to perform actions such as kicking, throwing, jumping, walking properly (Hanifah & Oktadinata, 2020) [10]. One of the very interesting lessons for children, especially those with intellectual disabilities, playing is one of them. Through play children develop physically, intellectually, emotionally and socially (Ardiyanto & Sukoco, 2014) [4]. Activities that encourage motor-physical development can be achieved through games using tools or without tools. Modified games are one of the innovations in physical education learning in gross motor skills that suit the developmental characteristics of children who always want to move, find it difficult to stay still, have a strong curiosity, like to experiment and test, can express themselves creatively, have an imaginative and will speak (Nugroho, 2015) [12]. Modification plays an important role in the process of teaching and learning activities (Pratama, 2016) [17]. Children will feel happy when participating in adaptive sports, where children will feel enthusiastic and not feel bored when participating in sports activities and without the child realizing that the activities carried out can improve children's motor skills (Sania & Kafrawi, 2019) [22].

Football is a sport that is very popular and liked by many people so that in all social circles, both in the small community or the middle class and even the upper class, the game of football is a sport that is often a part of that circle. The educational environment also includes idolizing this soccer game with evidence from the many students who like and are happy to play soccer during soccer material in physical and health education lessons. (Wibowo &

Kushartanti, 2013) [33]. The aim of soccer is not only to train students in sports, but also to train and strengthen their personality and moral values, and to shape students' interests. Interest is a high feeling of pleasure and liking for something without being told by others. Interest can be shown to someone through a statement that will show that person will like or dislike that thing (Prasetya & Kuntjoro, 2019) [16]. Soccer has a lot of elements in it not only basic techniques, but also tactics, formations, positioning, momentum and more. Even the dynamics of a momentum in football can be very influential and decisive (D. Sari *et al.*, 2021) [23]. Playing this sport requires basic movement skills such as dribbling, passing, stopping, heading and shooting where every soccer player ideally masters these basic skills in order to play soccer well. (Widodo, 2018) [34].

As for one of the problem points in this article, namely the skills of mentally retarded children where their intellectuality is below average so when compared to normal students in general, it is very necessary to train and improve gross motor skills in mentally retarded children with a modified game of football.

Method

The type of research used in this study is a quantitative study using an experimental model, namely research that seeks to determine the effect of changes in the provision of modifications to soccer games on gross motor performance in mentally retarded children. The research design used in this study was a "one-group pretest-posttest design", which is an experiment that compares conditions before being given treatment and after being given treatment. This study uses a design through pre-treatment (O1) and post-treatment (O2) tests so that there is a comparison between O1 and O2 to determine the effectiveness of the treatment (X).

The population in this study were mentally retarded students from SLB-C Cendrawasih Makassar. The number of samples used in this study amounted to 10 people. The sampling technique used purposive sampling, namely determination with certain criteria as follows: 1. is male, 2. has the ability to run. The instrument in this study used a basic movement skills test (Barrow Motor Ability Test), one of the tests used was zig-zag running. Data collection techniques are as follows:

1. The implementation stage is to record students who will be sampled, namely mentally retarded students at SLB-C Cendrawasih Makassar.
2. Prepare and inspect testing facilities and infrastructure, namely: field (flat room), ball and pretest and posttest assessment sheets.
3. The researcher gave directions in advance to the sample on how to do the research.
4. In carrying out the initial test, pretest data collection was carried out by measuring the basic movement skills (Barrow Motor Ability Test) of mentally retarded children using a zig-zag running test.
5. In the implementation stage, the sample carried out a zig-zag running test that had been provided by the researcher.
6. The scoring is obtained based on agility and speed by measuring the time of the zig-zag running test.
7. After the pretest was completed, it was continued by giving treatment to the sample using a modified soccer game for 6 meetings. Then a final test or posttest is carried out using the same test items at the time of the pretest.
8. The data that has been obtained is then analyzed to answer research problems, conclude research or formulate research results.

There are various kinds of statistical techniques used to analyze the relationship between variables, one of which is the comparative analysis of two correlated (related) samples. The formula used to analyze data using SPSS assistance through the T-Test test. The reason the researcher uses the T-Test test formula is because it is two measurements on the same subject of a certain effect or treatment.

Result

This study aims to modify soccer games to help with basic motion problems experienced by mentally retarded children by seeing the effect of modifying soccer games. The results of the study were obtained based on the results of the pretest and posttest data on the effect of modifications to the game of football on the gross motor skills of mentally retarded children. The results of each of these data are described as follows:

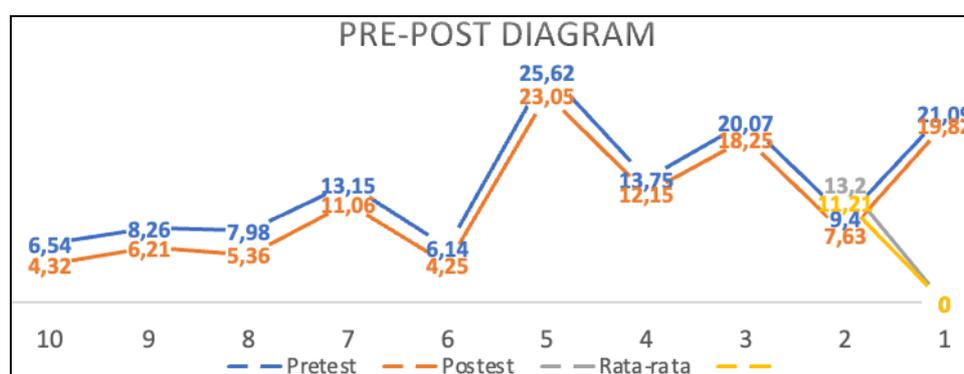


Image 1: Pretest and Posttest Data Diagrams

Paired t-test to see the effect of gross motor skills tests before and after the zig zag running test. The results of the summary of research data can be seen as follows:

From the results of descriptive analysis, it can be obtained an overview of the results of the descriptive statistics for the pretest variable gross motor skills obtained minimum value = 6.14; maximum value = 25.62; sum value 132.00; average (mean) = 13.20; standard deviation = 6.86. For the posttest

variable gross motor skills test, the minimum value is = 4.25; maximum value = 23.05; sum value 112.10; average (mean) = 11.21; standard deviation = 6.93.

Furthermore, the normality test is carried out to continue the next test. To find out whether the parametric test or non-parametric test is used, the data normality test is carried out. The data is normally distributed or not, if $p > 0.05$ then the data distribution is normal and if $p < 0.05$ then the data distribution

is not normal. The results of the data normality test can be described as follows:

From the normality test results, it is known that the gross motor ability data before and after the test obtained $p > 0.05$ by looking at the Shapiro-Wilk data because the sample is less than 50, so the results of the data normality test can be concluded that all research data both test data before and after the study for the ability of the motion test to follow a normal distribution or normal distribution.

Then testing the hypothesis with the T-Test test, namely to test the comparison before and after the treatment on the movement skills test. The results of the T-Test test data can be seen in the following table:

Table 1: Hypothesis Test with T-Test

One-Sample Statistics				
	N	Means	Std. Deviation	Std. Error Means
Pretest	10	13.2000	6.86619	2.17128
Posttest	10	11.2100	6.93412	2.19276

One-Sample Test						
Test Value = 0						
	t	Df	Sig. (2-tailed)	Mean Differences	95% Confidence Interval of the Difference	
					Lower	Upper
Pretest	6.079	9	.000	13.20000	8.2882	18.1118
Posttest	5.112	9	.001	11.21000	6.2496	16.1704

From the results of the T-Test test above can be seen in the pretest gross motor skills with an average value (mean) = 13.20 and standard deviation = 6.86 with a significant value of 0.000 and the posttest gross motor skills group with an average value (mean) = 11.21 and standard deviation = 6.93 with a significance value of 0.001 where the value of $p < 0.05$ means that there is a significant effect of modifying the game of football to effectively improve the gross motor skills of mentally retarded children at SLB-C Cendrawasih Makassar.

Discussion

Researchers argue that by providing learning activities for mentally retarded children at SLB-C Cendrawasih Makassar through modifications to soccer games can improve gross motor skills of mentally retarded children. As in research (Rohayati & Aprilianti, 2021) [20] explained that during the third cycle of learning activities, children's gross motor skills increased as a result of a score of 80% on the observation activities and performance tests respectively. This means that through learning activities, modification of soccer games can improve children's gross motor skills. Then strengthened (Wang, 2020) [32] Scientific and standardized soccer training can help promote the recovery of joint activity movement disorders, improve social adaptability, improve quality of life, and improve physical and mental health. Next in research (Popovic *et al.*, 2015) [13] the correlation between cognitive abilities and success in playing soccer has been proven in various studies, the fact that soccer is characterized by various technical elements, movements of the whole body or limbs in different directions at varying speeds so that mentally retarded children (mentally retarded) get a positive influence on motion skills.

Basically individuals with mental retardation, physical development lags behind normal individuals due to metabolic and hormonal disorders or genetic causes. This situation slows down the development of gross and fine motor skills of mentally retarded individuals. Weakness of muscles and joints

that are not permanent in individuals with mental retardation begins in childhood and causes the stage of motor development to be delayed (Cakmakci *et al.*, 2018) [5]. Then, in mentally retarded boys, the ability to kick a ball with their feet was found to be low, close to that of healthy children, ranging from low to moderate (Gülgösteren & Ziyagil, 2019) [7] then with that being the reason for researchers to provide an exercise program that is carried out through sports games. As in the explanation (Soslu *et al.*, 2018) [27] that exercising changes muscle structure, the ability of the central nervous system to control muscle coordination and therefore the effectiveness of movement. Sports affect the performance of individuals with mental retardation positively, for example strength, agility, better coordination skills in supporting groups doing sports.

(Fikriyanti, 2013) [6] suggested that motor skills are closely related to the development of the body's ability to control movement through coordinated activity between the nervous system, muscles, brain and spinal cord. Children who can master the movements of their gross motor skills will have a healthier body condition because children are always active. This is influenced by the self-confidence and independence inherent in the child. Children are easier to socialize because they can balance the movements and activities that are carried out with their peers. Mentally retarded children at a young age initially show attachment behavior to their parents and other adults. With age, this attachment is passed on to peers. When a child is afraid, tense and losing someone to depend on, the tendency to depend on it increases. In peer relationships, like young children, mentally retarded children reject other children. But as they get older they establish communication and carry out cooperative or cooperative activities (Rosse *et al.*, 2014) [21]. Activities that always involve children in large or small groups are the right means to communicate and mingle in the social sphere. The role of children with special needs in sports teams can encourage children to communicate within the team as an effort to work together. This encourages children to socialize in their team. Various sports for mentally retarded children include:

- Athletics.
- Soccer.
- Swimming.
- Badminton.
- Gymnastics (Rejeki, 2020) [18].

This success is inseparable from a training program that was carried out for 6 meetings. This training program was created with the aim that the exercises carried out can be carried out in a measurable and orderly manner so that the training objectives can be achieved optimally. The training program is provided with modifications to the game of soccer using a cone as a marker or as a goal when playing soccer. The game is carried out for 2 x 10 minutes with both teams able to drop the cones that have been placed on each team. This program refers to the explanation (Widyanto & Djawa, 2020) [35] that this modification is the process of modifying the characteristics of learning in accordance with the facilities and infrastructure available so that students can participate in carrying out learning activities, so that they can learn effectively and more easily carried out by students. Modification is also an alternative way to predict inability in the process of learning activities. So the modification of the soccer game that has been studied has an interest in learning.

Conclusion

Physical education is a comprehensive learning to identify and correct problems such as psychomotor problems where children with special needs are expected to benefit from the education process. In physical education learning activities that are suitable for mentally retarded children is a game. Play is one of the main ways of social activity for children. In this case, the modification of soccer games is effective in improving the gross motor skills of mentally retarded children at SLB-C Cendrawasih Makassar through tests of basic movement abilities such as zig-zag running which are carried out for 16 meetings. The results of this study are used as input for teachers and parents of Cendrawasih Makassar SLB-C students to pay more attention to sports selection and to focus more on improving gross motor skills when doing sports or physical activities. For future researchers, as much as possible add variables so that the research is more varied and can provide more insight.

References

- Agustin R, Anita KN. Pengaruh Modifikasi Permainan Menendang Bola Terhadap Koordinasi Gerak Manipulatif Anak Tunagrahita Ringan Siswa Smlb-C Alpha Kumara Wardhana Ii Surabaya. *Jurnal Kesehatan Olahraga*. 2017;7(3):40-44.
- Alfianing M, Yulianingsih DY, Ratnasih T. Upaya Meningkatkan Keterampilan Motorik Kasar Anak Melalui Permainan Modifikasi Bola Basket. *Thufuli: Jurnal Pendidikan Islam Anak Usia Dini*. 2022;4(1):30-38.
- Aprilita I, Darsi H, Syafutra W. Pengaruh Modifikasi Permainan terhadap Kemampuan Motorik Anak Desa Kertasari. *Silampari Journal Sport*. 2021;1(2):44-53.
- Ardiyanto A, Sukoco P. Pengembangan Model Pembelajaran Berbasis Permainan Tradisional Untuk Meningkatkan Kemampuan Motorik Kasar Anak Tunagrahita Ringan. *Jurnal Keolahragaan*. 2014;2(2):119-129. <https://doi.org/10.21831/jk.v2i2.2608>
- Cakmakci E, Tatlici A, Yirmibes B. European Journal of Physical Education and Sport Science Comparison of Lipid and Lipoprotein Values of. *European Journal of Physical Education and Sport Science*. 2018;4(12):49-57. <https://doi.org/10.5281/zenodo.1466141>
- Fikriyanti M. Perkembangan Anak Usia Emas (Golden Age). *Laras Media Prima*; c2013.
- Gülgösteren E, Ziyagil MA. The Effect of Relative Age Effect on Physical Characteristics and Fundamental Movement Skills in Intellectual Disabled Boys. *International Journal of Disabilities Sports & Health Sciences*. 2019;2(2):30-34. <https://doi.org/10.33438/ijds.636964>
- Gumantan A, Nugroho RA, Yuliandra R. Learning during the Covid-19 Pandemic: Analysis of E-Learning on Sports Education Students. *Journal Sport Area*. 2021;6(1):66-75. [https://doi.org/10.25299/sportarea.2021.vol6\(1\).5397](https://doi.org/10.25299/sportarea.2021.vol6(1).5397)
- Louk H, M J, Sukoco P. Pengembangan Media Audio Visual Dalam Pembelajaran Keterampilan Motorik Kasar Pada Anak Tunagrahita Ringan. *Jurnal Keolahragaan*. 2016;4(1):24-33. <https://doi.org/10.21831/jk.v4i1.8132>
- Hanifah PA, Oktadinata A. Mengembangkan Keterampilan Motorik Kasar Pada Siswa Taman Kanak-Kanak Melalui Permainan Modifikasi. *Jurnal SPORTIF: Jurnal Penelitian Pembelajaran*. 2020;6(3):575-587.
- Hidayatullah F, Anwar K, Ruski. Care Stick dan Core Paddle: Media Pembelajaran Pendidikan Jasmani Adaptif Untuk Siswa Disabilitas. *Journal Sport Area*. 2020;5(2):199-214. [https://doi.org/https://doi.org/10.25299/sportarea.2020.vol5\(2\).5185](https://doi.org/https://doi.org/10.25299/sportarea.2020.vol5(2).5185)
- Nugroho WA. Efektivitas Permainan Modifikasi Bola Basket Terhadap Kemampuan Motorik Kasar Tunagrahita Ringan Di SLB Negeri Semarang. *Jurnal Pendidikan Olahraga*; c2015.
- Popovic D, Boli E, Popovic M, Savic V, Popovic J, Bojovic M. The structure of Intellectual Abilities of Special Olympics Football Players. *American Journal of Applied Psychology*. 2015;4(6):178-182. <https://doi.org/10.11648/j.ajap.20150406.19>
- PP. Peraturan Pemerintah Republik Indonesia Nomor 13 tahun; c2020. https://jdih.kemdikbud.go.id/arsip/SalinanPPNomor57Tahun2021.pdf%0Ahttp://www.ncse.ie/uploads/1/ncse_inclusion.pdf%0Ahttps://www.sheffield.ac.uk/polopoly_fs/1.189891/file/The-inclusive-learning-and-teaching-handbook.pdf%0Ahttp://ejournal.upi.edu/inde
- PPK-L D. Pedoman Umum Penyelenggaraan Pendidikan Inklusif; c2011.
- Prasetya YE, Kuntjoro BFT. Pengaruh Modifikasi Permainan Sepak Bola Terhadap Minat Siswa Putri Pada Pembelajaran Sepak Bola. *Jurnal Pendidikan Olahraga Dan Kesehatan*. 2019;7(3):297-300.
- Pratama BA. Meningkatkan Ketrampilan Shooting Sepak Bola Dengan Permainan Modifikasi. *Jurnal SPORTIF: Jurnal Penelitian Pembelajaran*. 2016;2(1):48-58. https://doi.org/10.29407/js_unpgri.v2i1.655
- Rejeki DS. Pengembangan Kreatifitas dan Penciptaan Inovasi Serta Modifikasi Olahraga Adaptif untuk Anak Berkebutuhan Khusus. *Jurnal Ortopedagogia*. 2020;6(1):31-34. <https://doi.org/10.17977/um031v6i12020p31-34>
- Rezki. Analisis Gerak Motorik Dasar Siswa Kelas VII SMP Negeri 1 Kecamatan Kuok Kabupaten Kampar. *Journal Sport Area*. 2016;1(1):63-70. <https://doi.org/10.30814/sportarea.v1i1.375>
- Rohayati Y, Aprilianti R. Penerapan Modifikasi Permainan Sepak Bola dalam Meningkatkan Keterampilan Motorik Kasar Anak Usia 5-6 Tahun. *JESA-Jurnal Edukasi Sebelas*. 2021 April;5(1):7-16.
- Rosse SH, MM, UD, Setiawan A. Keterampilan Sosial Anak Tunagrahita Ringan. *Jassi*. 2014;13(1):21-27.
- Sania, Kafrawi FR. Pengaruh Modifikasi Permainan Memantulkan Bola Terhadap Koordinasi Mata-Tangan Anak Tunagrahita Sedang. *Jurnal Kesehatan Olahraga*. 2019;7(2):275-280.
- Sari D, Supriyadi M, Syafutra W, Okilanda A. Modifikasi Latihan Permainan Sepak Bola untuk Meningkatkan Keterampilan Menggiring Bola Pada Peserta SSB Silampari Tugumulyo. *Jurnal Patriot*. 2021;3(2):192-202. <https://doi.org/10.24036/patriot.v>
- Sari M. Kontribusi Lingkungan Keluarga dan Aktivitas Fisik Terhadap Kesegaran Jasmani Anak Tunagrahita. *Journal Sport Area*. 2016;1(1):38-46. <https://doi.org/10.30814/sportarea.v1i1.374>
- Satria MH, Taroreh BS, Melynda M, Asri N. Play Activity: To Increase Fundamental Movement Skill for Children with Mild Mental Retardation. *International Journal of Human Movement and Sports Sciences*; c2020. p. 1-10. <https://doi.org/10.13189/saj.2020.080701>
- Septaliza D. Survey of the Physical Fitness of Mentally Retarded. *Journal of Indonesian Physical Education and*

- Sport. 2021;7(1):69-75.
27. Soslu R, Özer Ö, Çuvalcioğlu İC. The Effects of Core Training on Basketball Athletes' Antioxidant Capacity. *Journal of Education and Training Studies*. 2018;6(11):128-134.
 28. Sukriadi S, Arif M. Model Pembelajaran Pendidikan Jasmani Adaptif Berbasis Permainan Untuk Anak Tunagrahita Ringan. *Jurnal Ilmiah Sport Coaching and Education*. 2021;5(1):12-24.
 29. Sumaryanti, wulanning dyah eka pradani dan. Kemampuan Motorik Kasar Tunagrahita Kelas Dasar Mampu Didik Diukur Melalui Dasar Permainan Bola Tangan. *Medikora*. 2015;XIV(1):1-16.
 30. Syamsuddin AF. Pengaruh Modifikasi Olahraga Sepakbola Terhadap Koordinasi Mata Dan Kaki Anak Tuna Grahita Di Slb Ypplb Cendrawasih Makassar; c2019. p. 1-2.
 31. Taufik MS. Meningkatkan Teknik Dasar Dribbling Sepakbola Melalui Modifikasi Permainan. *Jurnal Maenpo*. 2018;8(1):26-36. <https://doi.org/10.35194/jm.v8i1.914>
 32. Wang X. The Research Status of Football Intervention in the Treatment of Children with Autism. *International Journal of Frontiers in Medicine*. 2020;2(2):78-86. <https://doi.org/10.25236/IJFM.2020.020209>
 33. Wibowo AT, Kushartanti W. Modifikasi Permainan Sepak Bola Bagi Siswa SMA Penderita Asma. *Jurnal Keolahragaan*. 2013;1(2):104-119.
 34. Widodo A. Pengembangan Model Permainan Target Untuk Meningkatkan Keterampilan Shooting Dalam Permainan Sepak Bola. *Jurnal SPORTIF: Jurnal Penelitian Pembelajaran*. 2018;4(2):248-263. https://doi.org/10.29407/js_unpgri.v4i2.12463
 35. Widyanto E, Djawa B. Penerapan Modifikasi Sepak Bola Terhadap Belajar dan Efektivitas Siswa Dalam Pembelajaran Pendidikan Jasmani, Olahraga, dan Kesehatan. *Jurnal Pendidikan Olahraga Dan Kesehatan*. 2020;08(01):21-25.
 36. Xu H, Li Z, Chen X, Wu J, Xu Y. Assessment of Rehabilitative Effects of Motion Sensing Game on Mentally Retarded Children. *International Conference on Communication, Information Management and Network Security (CIMNS)*; c2016. p. 55-58.