



Comparison of Running Speed of Blind Athletes Using Technology Assistance and Guide Runner

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Abstract

The purpose of this paper is to compare the running speed of blind athletic athletes at NPCI Bandung City by disclosing the difference in running speed performance of blind athletic athletes in Bandung City when using a running method assisted by a guide runner and when using technological innovations created by students and a lecturer at the Indonesian University of Education, namely Blind Run. This technological innovation received an award from KEMENPORA of the Republic of Indonesia in 2022 and has been implemented for blind athletic athletes at the Bandung City NPCI. The sampling technique used by the researcher is purposive sampling, namely, athletes who are blind and have adapted to using the Blind Run product. A quantitative research method with the Mann-Whitney test is applied to answer the research hypothesis. The researchers' findings showed that athletes who ran using different methods had insignificant differences in speed. This is evidenced by the comparative test results, namely the sig. (2-tailed) of 0,121 or $> 0,05$ so that hypothesis can be terminated.

Keywords: *Blind Runners, Comparative Analysis, Difference in Running Speed, Guide Runners*

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INTRODUCTION

Paralympic sports are not just about achieving achievements. However, as a venue to prove that the performance of persons with disabilities is able to break through limitations towards equality. The Paralympics is a sports activity that people with special needs can participate in (Salaswari et al., 2020). The implementation of this activity aims to promote and invite persons with disabilities of all ages to exercise and

achieve (Brown & Pappous, 2018). This activity requires athletes with disabilities to become more disciplined and sporty individuals with the enactment of regulations by the National Paralympic Committee of Indonesia (NPCI), both in training and in competition (Nababan, 2018). Therefore, from this activity, it is hoped that his experience and knowledge can increase through each activity that is followed in the class or classification of each special need.

The competition in the athletics branch running number T11 classification, which blind people precisely follow, is the primary concern for researchers. This is because it provides opportunities for them to be physically active (Majed et al., 2016). The reason is to show performance and achieve optimal performance in this classification. Athletes need the help of guide runners to be able to help their mobility run and provide directions so that athletes are on track (Mestika & Sriwarno, 2014). However, when athletes run relying on human assistance, this makes their performance and efforts to achieve achievements impure because there must be intervention from the guide runner. Deputy Secretary Suliadi of the North Sumatra NPCI said that the obstacles faced by blind athletes in running numbers have the most significant risk compared to other sports, such as falling, getting injured, and even being injured during training with guide runners and competing (Nababan, 2018).

Furthermore, there are other obstacles when athletes rely on guide runners to run and achieve achievements in the Paralympics, such as making athlete training productivity dependent on the presence of guide runners. The findings in the field reinforced this, and it was found that there was a phenomenon that athletes could not take part in a running training program when there was no guide runner. This phenomenon made the athlete's schedule depending on the time a guide runner had, so the presence of this running companion became a determinant of good or bad performance. Athlete while running forward. Then, the random selection of guide runners makes athletes reluctant to participate in a competition. This is because athletes often feel uncomfortable when using a carelessly chosen guide runner. Having the same body posture to align running movements is a criterion that guides runners must have

(Peiris et al., 2016). Previous research has utilized technological developments as a bridge to help athletes run independently so that athlete performance and productivity can increase.

In Indonesia, one of the technological innovations that can help athletes run without having to be with guide runners was successfully created by students and lecturers at the Indonesian Education University. At its implementation, it was carried out on blind athletic athletes from NPCI Bandung City. This innovation once won third place in an event organized by the Ministry of Youth and Sports named "National Sports Digital Innovation and Technology Competition in 2022." This success has been spread on social media and has become a topic of conversation at the Faculty of Sports and Health Education at the Indonesian University of Education.

The awards and achievements above created conjectures and attracted researchers to conduct comparative research to prove that the presence of running aid technology can make a significant difference to the athlete's running speed performance when using a guide runner so that the athlete's running speed performance when using different running methods will have differences in the results of the time records obtained. Therefore, based on the background exposure above. The author is interested in conducting quantitative research through comparative methods titled "Comparison of Running Speed of Blind Athletes Using Technology Assistance and Guide Runners."

METHOD

Quantitative research was used in this study because the type of data collected can be measured directly (Bacon-Shone, 2021). The data collected by researchers on this occasion is in the form of numbers or statistics to answer the effect of the difference between the two variables to be analyzed. This aims to prove whether or not there is a difference in the speed of running results of blind athletic athletes when using two different running methods.

This type of comparative research was used in this study through a survey method with a cross-sectional approach, which means that data was collected once from the research subject (Abrori & Asim, 2020). This aims to see the difference in running speed of blind athletic athletes at NPCI Bandung City when running using a guide runner and a running technological innovation called Blind Run. In this study, the independent variables were T11 blind athletic athletes who used the running method with guide runners and used running aid technology. Then, the dependent variable is the result of the running speed of blind athletic athletes when using guide runners and Blind Run.

Research Subject

Research subjects are people who understand something to be studied and can be used to provide information about the actual situation and conditions. On this occasion, the research subjects were blind athletic athletes who had used and adapted to Blind Run. Then, in the end, the subject is determined as a population. The population is all units in an observation area that meet the criteria or requirements of research (Nur, 2013). The population in this study was determined by all blind athletes running numbers in Bandung.

An inductive approach at the West Java NPCI obtained data on the number of blind athletic athletes. Then the determination of the sample was selected using a purposive sampling technique, which means that it was specifically selected as a research sample (Lenaini, 2021). Namely, blind athletes in running number sports who had already adapted to using the Blind Run running method. Based on the results of observations, two samples could be used as research subjects, namely blind male athletic athletes in short-distance running numbers who had made adjustments to the running method with the help of Blind Run technology and were in the city of Bandung. The selected athletes have participated in a blind running number of athletic events at the provincial level so that their running experience as blind person is no longer in doubt.

Research Procedure

This study uses a quantitative approach. Therefore, it is necessary to have accuracy and diligence and conduct research through systematically arranged procedures to answer research (Hidayat, 2017). This can be seen as follows.

First, determining the research subjects, consisting of the population, is the first step in this study. Blind athletic athletes in Bandung's track and field event are determined as a population of three people with the criteria T11.

Second. After the population is determined, the next step is to determine the sample using a purposive sampling technique, namely blind athletic athletes who have blind characteristics and have used Blind Run and are currently in the city of Bandung for data collection.

Third. It calculates the running speed of blind athletic athletes carried out in the Padjajaran and Arcamanik fields in Bandung City with a distance of 60 meters using two different running methods, namely using the running method with guide runners and the running method using the help of Blind Run technology. Distance is determined according to the agreement between the researcher and the research subject. This aims to minimize the occurrence of unwanted things, such as falling or colliding during implementation, considering that the athletes who are used as research samples will carry out competitions that are large enough so that unwanted events need to be minimized.

Fourth. It recapitulates the results of the running speed of blind athletic athletes when using different running methods at a distance of 60 meters to process the data so that, in the end, it produces a conclusion to answer the conjecture in this study.

Fifth. Perform research data processing that begins with a normality test. Then, proceed with using a comparative test to compare two different variables.

RESULTS AND DISCUSSION

Based on the data from the analysis of blind athletic running speed with two different methods at a distance of 60 meters, the researcher presents them in tabular form which can be seen in Table 1. Furthermore, these data are used as material for analysis in research and in the end are used as a first step to analysing speed data of blind athletes when using Guide Runner and Blind Run.

Table 1. Data On The Results Of The 60-Meter Running Test For Blind Athletic Athletes In The City Of Bandung.

No.	Respondent	Time (in seconds)	Running Method
1.	A	8,65	Guide Runner
2.	B	8,77	Guide Runner
3.	A	7,34	Blind Run
4.	B	7,38	Blind Run

Based on the results of observations, two samples of research subjects produced two different variables from each of these samples. Then, from the data above, the researcher conducted a normality test using the Shapiro-Wilk because the data that was processed had not a large amount (Shapiro & Wilk, 1965). This research was conducted with the help of SPSS 20 to make it easier for researchers to carry out normality tests. This is done as a condition for establishing a parametric or non-parametric statistical test that will be used in carrying out a comparative analysis of the speed results that have been obtained (Usmadi, 2020). The following are the results of the normality test that the researchers presented in Table 2.

Table 2. Research Data Normality Test

	Shapiro-Wilk		
	Statistic	df	Sig.
Running Speed Results	,779	4	,069
Running Method	,729	4	,024
Running Method	,729	4	,024

Table 2 shows the results of the normality test of the sample used by the researcher. It can be seen that the running speed data has a significance value of 0.069. In contrast, the athlete's running method data has a significance value of 0.024, which means that there is one data with a significance value of <0.05 , so the data above is not normally distributed. Therefore, the research was continued using the non-parametric test via the Mann-Whitney method to find answers to the research hypothesis (Qolby, 2018). As shown in Table 3 below.

Table 3. Comparative Test Results For Running Speed Data

Running Speed Results	
Mann-Whitney U	,000
Wilcoxon W	3,000
Z	-1,549
Asymp. Sig. (2-tailed)	,121
Exact Sig. [2*(1-tailed Sig.)]	,333 ^b

Comparative test results can be seen in Table 3. The table above shows that the Sig. (2-tailed) of 0.121. Researchers use these results as conjectures in this study. A conjecture or hypothesis is an essential part of research. This is done to be able to answer the conclusions of the research itself (Lolang, 2015).

Based on the data processing that has been done, it is known that two samples have unique criteria, each of which produces two different dependent variables, namely the variable speed of blind athletic athletes who run using guide runners and technological assistance. Then, the data is tested using the comparative method.

Before the researcher determines the test used, the first step is to apply the normality test to determine the type of statistics used in this study. Based on the normality test results, it is known that the sig. Running speed has a significance value of 0.069. In contrast, the athlete's running method data has a significance value of 0.024, which means that one of the data is <0.05 , so it can be concluded that the data is not normally distributed.

Furthermore, when the data is not normally distributed, the research is continued using the non-parametric test using the Mann-Whitney method. The test criteria used in the Mann-Whitney test using SPSS in this study are: If the value of Sig. (2-tailed) $< \alpha = 0.05$, the hypothesis is accepted and vice versa (Quraisy & Madya, 2021). Based on the results of the data analysis that has been done, it is known that the Sig. (2-tailed) of 0.121 or > 0.05 , so it can be concluded that there is no insignificant difference when athletes run using methods assisted by guide runners and when using technological assistance created by lecturers and students of the Indonesian University of Education to run.

CONCLUSION

Based on the research analysis that the researchers have carried out, through a comparative test of two variables, the athlete's running speed, when using different running methods, has an insignificant difference in the results of the time records obtained. This is proven by the results of statistical tests using the Mann-Whitney, namely the Sig. (2-tailed) of 0.121 or > 0.05 , so it can be concluded that the hypothesis is rejected.

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