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**Original Article Research**

# Motion Survey Analysis of Freestyle Swimming Technique Skills in Young Athletes Aged 10-11 Years

*Erick Burhaein*[1]*, *Aradia Rozak*[2], Jewelson Medel Santos[3]

[1] *Department of Sports Education, Faculty of Teacher Training and Education, Universitas Nahdlatul Ulama Kebumen, Indonesia*

[2]*SD Negeri 3 Purwogondo, Kebumen, Indonesia*

[3] *Department of Physical Education and Recreation, Cavite University, Philippines*

*email corresponding author: erick.burhaein@umnu.ac.id

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## Abstract

This research was conducted to determine the skills of freestyle swimming techniques of athletes 10-11 years nemo swallow swimming club in 2022. Participants in this study were Nemo Wallet Swimming Club KU IV athletes aged 10-11 years with 11 athletes. This research is a quantitative descriptive study. The method used is a survey of athletes who perform freestyle swimming by measuring the time taken by athletes in freestyle swimming at a distance of 25 meters. Based on the results of the study, it was obtained that as many as 8 athletes (73%) have excellent freestyle swimming ability, 1 athlete (9%) has good 25 m freestyle swimming ability, 1 athlete (9%) has sufficient freestyle swimming ability, 1 athlete (9%) has less freestyle swimming ability, and 0 athletes (0%) have very less freestyle swimming ability. Based on the results of the research concluded that freestyle swimming skills measured using stopwatches in athletes aged 10-11, from these data can provide an illustration that the category of 25 m freestyle swimming ability in Nemo Wallet Swimming Club athletes is a category (excellent), with a total of 8 athletes. Contributing to further research is conducting research on more intense exercises on freestyle swimming techniques as well as strategies for improving athletes' abilities in freestyle swimming. With this research, it is hoped that it can be used as a reference material for coaches regarding the level of athlete skills. With the discovery of several athletes who have the ability to swim freestyle under the good category, it is necessary to make efforts to improve the ability of athletes in order to achieve the good category

**Keywords**: Athletes, Freestyle, Surveys, Swimming Skills

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## 1. INTRODUCTION

It can be known that in the development of the times at this time there are many developments in terms of science and technology and developments in terms of other fields, one of which is in the field of swimming. Swimming is a physical activity carried out in water in a planned manner using special techniques to achieve certain goals. The objectives include: as recreation, education, achievement, therapy, and so on (Saputra & Maidarman, 2019). Swimming in general is the floatation of an object in a liquid due to its buoyancy or lift which means that the definition of swimming in general is an effort to float or lift the body above the surface of the water swimming is a sport carried out in water with coordination of arm and leg movements (Badruzaman, 2007) deep (Tahapary & Syaranamual, 2020a). Swimming is a water sport that is very popular and favored by anyone because all movements involve almost all body muscles so it is very beneficial for health and keeps the body fit (Tahapary & Syaranamual, 2020). Swimming became known in prehistoric times. This evidence is based on the discovery of a painting about swimming sports that existed in the stone age or about 10,000 years ago. In addition, archaeological evidence also shows that swimming has been practiced since 2500 BC in Egypt and continued in Assyrian, Greek, and Roman civilizations (Chaline, 2017). In its development, modern swimming was originally only done as a recreational activity. However, in England a swimming competition was organized around the 1830s. Previously, a bathing place called St. George was opened for the public as well as a place to swim in 1828 (Chaline, 2017).

Captain Matthew Webb first publicized the sport of swimming to the world public in 1875. In those days, he swam across the English Channel by swimming breaststroke. Captain Matthew Webb was able to cover a distance of 34.12 km and reach land again in 21 hours and 15 minutes (Hodler, 2018). 10 years later, England created a swimming competition in the City of London area under the name National Swimming Society. The amateur swimming association in England was formed with members numbering 300 regional clubs in 1880. Later, other European countries co-founded swimming federations, such as Germany in 1882, France in 1890 to Hungary in 1896 (Chaline, 2017). In 1889 in Vienna an amateur swimming competition in Europe was held for the first time. Meanwhile, for the first time in 1892 in Scotland a swimming competition for women was organized (Hodler, 2018). As time goes by, swimming is increasingly famous and liked by the wider community. in the end this led swimming to enter as one of the sports contested at the 1896 Athens Olympics (Chaline, 2017). After its success at the 1896 Athens Olympics, the backstroke was published as a new swimming event at the 1900 Paris Olympics. Initially, the style used in swimming competitions was only breaststroke or commonly called breastroke.

After the success of swimming in the Olympics, began a lot of development about this sport. There are many new swimming styles that are published and included as one of the categories of international competitions. One of them, Richmond Cavill from Australia introduced freestyle as a new technique in swimming competitions in 1902 (Hodler, 2018). In the 19th century, swimming competitions were increasingly loved by the public. High-level competitive swimming aims to break personal and world records while defeating opponents in every competition held (Chaline, 2017). Finally, in 1908 a World Swimming Association was established as an international organization that oversees various swimming activities. There are now forty individual swimming events officially recognized by FINA. However, the International Olympic Committee (IOC) only recognized 32 of the 40 swimming events. The international governing body for competitive swimming is known as the Federation Internationale de Nation (FINA). This International Swimming Federation is a successor to the International Swimming Association

(Dawson, 2018).

In 1904 swimming was first known in Indonesia. At that time swimming was only done by white people or Dutch people and high society. With the formation of the Bandungsche Zwembond swimming association or it can also be called the Bandung Swimming Association in 1917, the development of swimming sports began to be seen. The following year, the Indonesian swimming association became wider, with the establishment of the West Java Zwembond or West Java Swimming Association. After the West Java Zwembond in West Java, East Java followed by forming the Oost Java Zwembond or East Java Swimming Association in 1927. Oost Java Zwembond succeeded in becoming the parent of 7 associations, including swimming associations in the school environment including Osvia, Mulo and Kweekschoo (Arhesa, 2020) After having many members, inter-regional swimming competitions began to be held by swimming unions. This competition is still under Dutch control, therefore various records created in the competition were recorded in the record in the Netherlands. In the swimming competition number 100 m freestyle at the Cihampelas swimming pool, Bandung Dutch East Indies swimmer named Pet Stam managed to set a record of 59.9 seconds in 1936. Pet Stam was a Dutch East Indies athlete who represented the Netherlands for the 1936 Berlin Olympics.

During the Japanese colonial era in 1943-1945, Indonesian people had more opportunities to learn swimming. This is because the general public has been allowed to swim, not only certain groups. So that swimming is increasingly widespread to date (D. H. Reftari et al., 2018). On March 21, 1951, the Executive Board of the Indonesian Swimming Association (PB PRSI) was established as (PB PRSI) is a non-profit organization that regulates swimming sports activities in Indonesia with Prof. dr. Poerwo Soedarmo as its first general chairman. PRSI has been registered as an official member of the Federation Internationale de Nation (FINA) or commonly known as the World Swimming Federation with and the International Olympic Committee (IOC). PB PRSI organization oversees five aquatic sports, including swimming.(D. H. and S. A. and S. A. Reftari, 2018). Since then swimming in Indonesia began to grow rapidly from the provincial level to the district level. Evidenced by the many swimming associations formed, competitions that are routinely held both at the national and district levels and with many swimming pools built. The development of swimming in Kebumen district is very rapid, this can be seen from the many swimming competitions that have been held, so that many prestigious swimming athletes have been produced, both at the district and provincial levels. These outstanding athletes are not spared from the coaching of clubs that play an active role in coaching and training. One of the swimming clubs in Kebumen regency is Nemo Wallet Swimming Club which has been established since June 26, 2016. And has produced many outstanding swimming athletes in their coaching.

In swimming there are several categories that are contested in addition to the style used and age categorization is also distinguished in swimming competitions. There are several age categories competed in swimming such as senior (18 years and above), KU I (15-17 years), KU II (13-14 years), KU III (10-11 years), and KU IV (10 years and below). Nemo Walet Swimming Club is one of the outstanding swimming clubs in Kebumen City. Nemo Walet Swimming Club has an important role in producing swimming athletes in Kebumen City To produce outstanding swimming athletes in Kebumen City, various resources and efforts have been made. Internal efforts include: training 6 times a week, completing training facilities and infrastructure, selecting potential, talented and interested athletes, competent coaches. While the external efforts made are: cooperation with athletes' parents, cooperation with leaders in coordination with KONI and Dispora kab. Kebumen Nemo Walet Swimming Club is one of the swimming associations that has

outstanding athletes, especially at the district level. In swimming, there are several styles, namely breaststroke, butterfly, backstroke, and freestyle (Siswanto, 2019). Freestyle resembles the way animals swim, therefore it is called crawl which means crawling. Australian Richmond Cavill introduced freestyle as a new technique in swimming competitions. Freestyle is swimming with your chest facing the surface of the water. Both hands are alternately moved far forward with a pedaling motion, while both legs are alternately lashed up and down up and down, the position of the face facing the surface of the water breathing is done when the arms are in motion out of the water, When the body tilts and the head turns to the side while taking a breath, the swimmer may choose to turn his head to the right or left (Bramantha, 2017).

Freestyle is what can make swimmers go faster in the water. (Tahapan ary &; Syaranamual, 2020). Freestyle swimming began to be studied in 1870 by Arthur Trudgen through observations of Argetine society. He studied how to swim so that he could go fast (Dawson, 2018; Siswanto, 2019). Freestyle is the favorite style in swimming competitions, with many athletes participating in this freestyle swimming event. Freestyle is the fastest and efficient style in swimming, it is also the easiest style to learn (Maidarman, 2017). At the Nemo swallow swimming club there has never been a check on the skills of athletes' freestyle swimming techniques. Therefore, it is necessary to conduct a survey on the skills of athletes' freestyle swimming techniques. The object of study was athletes aged 10-11 years.

## 2. METHOD

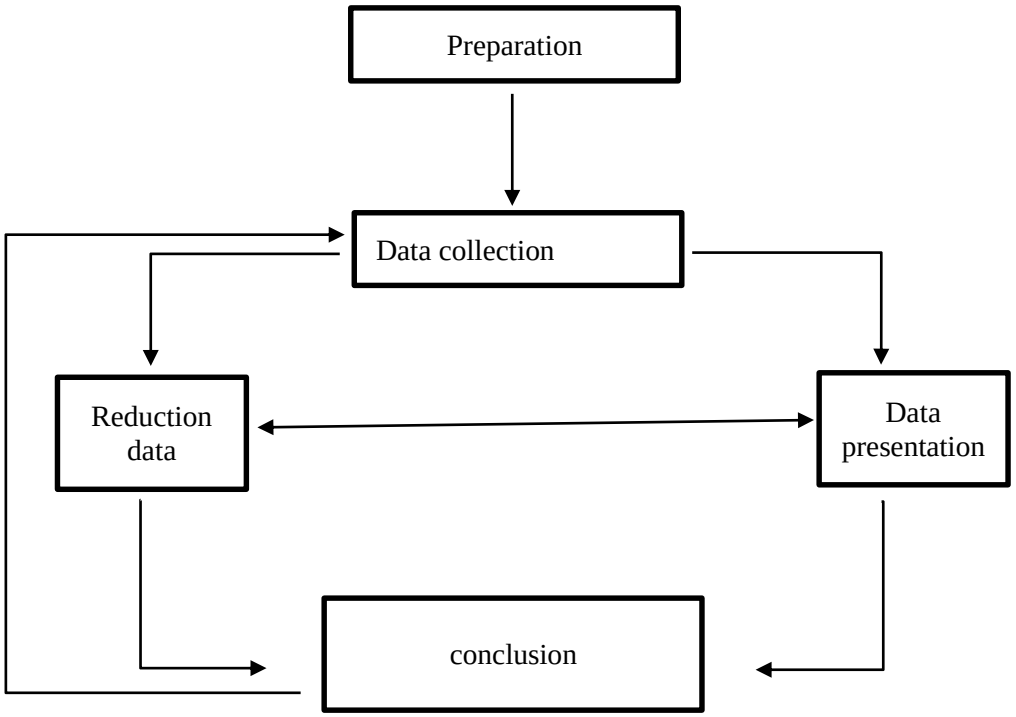
### 2.1 Participants

| Age Category | Men's Athletes | Female Athletes |
|---|---|---|
| 4 (10-11 year) | 7 | 4 |
| Total | 11 | |

The object of this study was Nemo walet swimming club athletes with age category IV (10-11 years), totaling 11 athletes. Which consists of 7 male athletes and 4 female athletes. Participants in this study were selected by applying the Total sampling technique (Fraenkel et al., 2019). This research was conducted at Nemo walet swimming club Kebumen.

### 2.2 Research Design

This research is included in quantitative descriptive research (Fraenkel et al., 2019). This research instrument uses surveys. Survey is an information collection technique carried out by compiling a list of questions asked by respondents in the form of a sample population (Fraenkel et al., 2019). In survey research, researchers examine the characteristics of causal relationships between variables without intervention. This study used a quantitative descriptive method, namely by describing the level of 25-meter freestyle swimming skills in nemo swallow wimming club athletes, data collection through freestyle swimming tests with a distance of 25 meters.




### 2.3 Instruments

In this study we used survey tests and time measurement tests using stopwatches to collect data. The test was conducted to determine how proficient the freestyle swimming skills of athletes in age category IV aged 10-11 years. The results of the survey test and time measurement test were then presented in a descriptive description (Fraenkel et al., 2019).

### 2.4 Procedures

The data collection steps in this study are: first prepare a research instrument assessment table and Stopwatch, then make a visit to the swimming club to be studied to collect data, athletes or respondents to be studied are collected in one pool area, then each athlete is instructed to do freestyle swimming as far as 25 m. Then when the athlete did freestyle swimming, the researcher recorded the time obtained by the athlete in doing the swim, as well as until all athletes were recorded.

### 2.5 Data Analysis

The data analysis technique used in this study is in the form of descriptive statistics with percentages. Data from this study is in the form of numbers from the speed of freestyle swimming athletes.

The collected data is further classified into the following table:

**Tabel 1,**

*Engineering Classification 25 m freestyle swimming*

| No | Categories | Interval |
|---|---|---|
| 1 | Excellent | ≤22.38 |
| 2 | Good | 22.39– 24.85 |
| 3 | Enough | 24.86–27.33 |
| 4 | Less | 27.34–29.80 |
| 5 | Very Lacking | ≥29.81 |

Source: (Puput Widodo & Yunida, 2021)

## 3. RESULTS

Results of data description of 25-meter freestyle swimming ability in nemo swallow swimming club athletes age category 4. Described based on tests that have been carried out. And the test carried out consists of one type of test, namely a survey of the ability to swim a 25-meter freestyle in nemo swallow swimming club athletes age category 4. The following is a description of the test results described as follows:

**Table 2.**

*Freestyle Swimming skill data*

| **No** | **Name** | **Age** | **Time Record** |
|---|---|---|---|
| **1** | NAK | 11 | 00.17.60 |
| **2** | BKF | 10 | 00.19.25 |
| **3** | KBA | 10 | 00.20.90 |
| **4** | FZR | 10 | 00.24.25 |
| **5** | VHAG | 10 | 00.25.85 |
| **6** | MMK | 11 | 00.28.85 |
| **7** | GA | 11 | 00.18.74 |
| **8** | NMP | 11 | 00.16.90 |
| **9** | KKAA | 11 | 00.19.25 |
| **10** | FHA | 10 | 00.21.16 |
| **11** | KAFA | 11 | 00.18.43 |

Source: Primary Data

**Table 3.**

*Freestyle swimming static data*

| | |
|---|---|
| Number of Athletes | 11 |
| Amount of Time | 03.51.68 |
| Average Time | 00.21.06 |
| Fastest Time | 00.16.90 |
| Slow Time | 00.28.85 |
| Middle Value | 00.19.25 |
| Standard Deviation | 00.03.78 |

Source: Primary Data

Based on the table above, the description of data on the ability to swim 25 meters freestyle in nemo swallow swimming club athletes age category 4 (10-11th) is as follows: the number of participants was 11 athletes with a total time gain of 03 minutes 51 seconds 68 ms, an average of 21 seconds 06 ms, the fastest time was 16 seconds 90 ms, the slowest time was 28 seconds 85 ms, The middle value is 19 seconds 25 ms, and the standard deviation value is 03 seconds 78 ms. The results of the freestyle swimming ability test of athletes aged 10-11 years with a distance of 25m can be described in the determination of speed measurements in the table below.

**Table 4.**

*Cataclysmic Freestyle Swimming 25m*

| No. | Categories | Number of Athletes | Percentage |
|---|---|---|---|
| 1 | Excellent | 8 | 73% |
| 2 | Good | 1 | 9% |
| 3 | Enough | 1 | 9% |
| 4 | Less | 1 | 9% |
| 5 | Very Lacking | 0 | 0% |

Source: Primary Data

Based on the results of field research, the results of the ability to swim 25 meters freestyle in nemo swallow swimming club athletes in age category 4 were obtained, which varied. The findings of this study show that there are 5 categories of freestyle swimming skills with the

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acquisition of freestyle swimming skills based on the table above, it can be seen that as many as 8 athletes (73%) have excellent 25 m freestyle swimming skills, as many as 1 athlete (9%) have good 25 m freestyle swimming skills, as many as 1 athlete (9%) have sufficient 25 m freestyle swimming abilities, as many as 1 athlete (9%) has less 25 m freestyle swimming ability, and 0 athletes (0%) have very less freestyle swimming ability. When viewed from the frequency of categories that often appear, it can be seen that the dominance of swimming ability in the age 4 category of nemo swallow swimming club athletes in doing the 25 m freestyle is very good.

**Figure 1.**

*Freestyle Swimming Capability 25 m*


## 4. DISCUSSIONS

Swimming in general is the floatation of an object in a liquid du to its buoyancy or lift which means that the definition of swimming in general is an effort to float or lift the body above the surface of the water swimming is a sport carried out in water with coordination of arm and leg movements (Badruzaman, 2007) in (Tahapan &; Syaranamual, 2020a). There are several styles in swimming, namely breaststroke, butterfly, backstroke, and freestyle (Siswanto, 2019). Freestyle resembles the way animals swim, therefore it is called free, which means to crawl (Muhajir, 2017).

Swimming competitions, especially for children, are now very much contested. Because currently the swimming championship has now begun to be noticed by the government. Looking for seeds of athletes at a young age is one way to be able to improve the quality of sports in the government, so it is very important the role of a coach in providing maximum training to prospective athletes in order to develop children's achievements in the field of sports. Based on the research steps that have been carried out, the final product is produced in the form of a swimming skill test instrument for athletes aged 10-11. Based on the results of the study showed that the ability to swim freestyle in nemo swallow swimming club athletes in age category 4 was very good, The factors that support the above conclusions are explained as follows:

The results showed that 100% of nemo wallet swimming club athletes in age category 4

were able to cover a distance of 25 meters in freestyle, and 73%. From the number of athletes it can be categorized that the level of freestyle swimming ability with their distance of 25 meters is in the excellent category. This is because coaches provide regular training to athletes as many as 12 meetings every month. And also support from athlete guardians who always support their children so that they can excel, especially in this aquatic swimming sport.

According to (de Medeiros Vidal et al., 2020; Mandzák & Stankiewicz, 2014) Freestyle Swimming Techniques include:

1. Hands or arms are moved alternately to pedal.
2. Straight or average body of water
3. The foot or leg is moved up and down alternately
4. Most athletes already do this movement
5. The way the athlete's breath is exhaled when the hand is open to pedal

## 5. CONCLUSIONS

Based on the results of research and discussion, researchers concluded that freestyle swimming skills measured using stopwatches in athletes aged 10-11 at the nemo wallet swimming club obtained the results that as many as 8 athletes (73%) had excellent 25 m freestyle swimming skills, as many as 1 athlete (9%) had good 25 m freestyle swimming skills, as many as 1 athlete (9%) has sufficient 25 m freestyle swimming ability, as many as 1 athlete (9%) has less 25 m freestyle swimming ability, and 0 athletes (0%) have very less freestyle swimming ability. From these data, it can be given an idea that the category of 25-meter freestyle swimming ability in nemo wallet swimming club athletes is a category (very good), with 8 athletes.

From the data above, the relationship of these findings to swimming learning can be known to what extent the athlete's ability to do freestyle swimming and identify things that are still difficult for athletes to do in this style testing. This research can be used by coaches to find solutions to the difficulties experienced by athletes in applying freestyle swimming.the results of this research can later be a solution for coaches to improve the ability of their athletes. The contribution to further research is to conduct research on more intense exercises on freestyle swimming techniques that need to be done by athletes as well as strategies to improve athletes' abilities in freestyle swimming.

## REFERENCES

Arhesa, S. (2020). *Buku jago renang*. Ilmu Cemerlang Group.

Badruzaman. (2007). *Modul Teori Renang I*. Universitas Pendidikan Indonesia.

Bramantha, H. (2017). Pengembangan Bahan Ajar Penjaskes Pokok Bahasan Teknik Dasar Renang Gaya Bebas Dengan Pendekatan Kontekstual Pada Siswa Kelas X Di Smk Daerah Situbondo. *Jurnal Pendidikan Dasar Indonesia*, *2*(2), 25–27.

Chaline, E. (2017). *Strokes of Genius: A History of Swimming*. Reaktion Books.

Dawson, K. (2018). Parting the Waters of Bondage: African Americans' Aquatic Heritage. *International Journal of Aquatic Research and Education*, *11*(1). https://doi.org/10.25035/ijare.11.01.09

De Medeiros Vidal, J., Tucher, G., Nogueira, L., Novaes, R. C., de Souza Vale, R. G., de Castro, M. O.

R., da Silva Medeiros, N. G., & de Cassio Costa Telles, S. (2020). Crawl technique observation sheet for beginning swimmers: An evaluation proposal for swimming teachers. *Motriz. Revista de Educacao Fisica*, *27*. https://doi.org/10.1590/S1980-65742021016920

Fraenkel, J. R., Wallen, N. E., & Hyun, H. H. (2019). *How to design and evaluate research in education* (Vol. 7). McGraw-hill New York.

Hodler, M. R. (2018). Strokes of Genius: A History of Swimming. *Sport History Review*, *49*(2), 210–211. https://doi.org/10.1123/shr.2018-0030

Maidarman, M. (2017). Kontribusi daya ledak otot tungkai dan kelentukan pinggang terhadap kemampuan start renang gaya bebas atlet womens swimming club. *Jurnal Performa Olahraga*, *2*(1), 13–21.

Mandzák, P., & Stankiewicz, B. (2014). Correction of errors front crawl swimming technique of students of physical education and sport. *Journal of Health Sciences*, *4*(14).

Muhajir, M. (2017). *Pendidikan jasmani, olahraga dan kesehatan SMP/MTs Kelas VII: buku guru*. Kementerian Pendidikan dan Kebudayaan.

Puput Widodo, & Yunida, F. Z. (2021). Basic Swimming Style Crawl Engineering Skills Survey in Athletes Ages 10-12. *JUMORA: Jurnal Moderasi Olahraga*, *1*(02). https://doi.org/10.53863/mor.v1i02.285

Reftari, D. H. and S. A. and S. A. (2018). Komunikasi pemasaran olahraga renang. *Jurnal Kajian Komunikasi*, 247--260.

Reftari, D. H., Suryana, A., & Setiaman, A. (2018). Komunikasi Pemasaran Olahraga Renang. *Jurnal Kajian Komunikasi*, *6*(2), 247. https://doi.org/10.24198/jkk.v6i2.13221

Siswanto, C. A. K. (2019). SURVEI KETERAMPILAN TEKNIK DASAR RENANG GAYA BEBAS ATLET USIA 12-14 TAHUN PADA CLUB RENANG DI KABUPATEN TULUNGAGUNG. *FKIP – PENJASKESREK UNIVERSITAS NUSANTARA PGRI KEDIRI*.

Tahapary, J. M., & Syaranamual, J. (2020a). LATIHAN TEKNIK DASAR DAPAT MENINGKATKAN HASIL RENANG GAYA BEBAS. *JARGARIA SPRINT: Journal Science of Sport and Health*, *1*(1), 30–38. https://doi.org/10.30598/jargariasprintvol1issue1page30-38

Tahapary, J. M., & Syaranamual, J. (2020b). LATIHAN TEKNIK DASAR DAPAT MENINGKATKAN HASIL RENANG GAYA BEBAS. *JARGARIA SPRINT: Journal Science of Sport and Health*, *1*(1), 30–38. https://doi.org/10.30598/jargariasprintvol1issue1page30-38