

# Improving Prime Skills of Artistic Swimming with Mental Training through Land Drill

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**Abstract.** Artistic swimming is which has two kinds of training; land training and water training (pool). In the complicated preparation toward the team in order to achieve the best performance, psychological touch becomes very important to help the swimmer's performance. This study is aimed to see the form of mental training which is done in the artistic swimming. The object of study is a member of the artistic swimming national team. The method of the study is qualitative grounded theory. Data obtained through field notes and confirmation at the informants. The results of this study indicate that mental imaging training through ground training helps swimmers to get the best movement they show. Imagery training can help the swimmers to repair the performance in the routine set. The significance of this study is to help the preparation for the swimmers' best performance through mental training.

**Keywords:** mental training; artistic swimming; land drill

## 1 Introduction

An artistic swimming is a sport branch which has an element of swimming, gymnastics, ballet, and dance. This sport branch is considered as unmeasured sport branch so that it needs a special performance factor. In Indonesia, the artistic swimming has not yet become a favourite sport in the society, so the number of human resources availability is still limited. It can be seen from the member of national team that is formed to participate in 29<sup>th</sup> Sea Games in Malaysia. There are only ten athletes from four provinces; DKI Jakarta, Jawa Barat, DI Yogyakarta, and Sulawesi Selatan.

The limitation of human resources and regeneration delays in this sport branch affect the Indonesian's achievement in the international level. In this current time, the national team mostly consists of the young swimmers rather than the experienced swimmers. It becomes a challenge for the trainers to form the excellent team. There are some supporting factors of the athletes' improvement which are needed to prepare the prima team. Training factors which comprise physical, technical, tactical, and

psychological training are considered as one procedure which needs to be implemented to reach the top achievement in the sport area [1]. The training process which has been arranged by the trainers for the swimmers includes two kinds of training, they are land training and water training (pool). Land training encompasses gymnastics, ballet, yoga, and physical conditioning. Meanwhile, water training consists of classic swimming, basic techniques of artistic swimming, and routine set. This sort of training can form the better physical ability of the artistic swimmers than another kinds of swimmer [2].

Some kinds of training which are clearly described above are intentionally prepared to improve the swimmers' physical ability, techniques, and tactic, but those are not enough to reach the psychological part of the swimmers. The studies which have been conducted previously tend to investigate the physical quality, such as what has been completed by [3]. He investigated the weakness of physical component in supporting the athletes' achievement. In the most complicated preparation of the team to achieve the prima performance, the psychological touch becomes much more important. A mental training which is known and usually practiced by the athletes is called as imagery. Imagery is a kind of mental activity in order to create or recreate the athletes' knowledge through the information received from their senses in form of meaningful move pattern which are usually practiced in the athletes' performances [4].

Imagery is considered as mental training that is usually applied to improve the athletes' performance, so imagery can be applied in artistic swimming too. The problem of this study is how to give the mental imagery training for the artistic swimmers. Therefore, the objective of this study is to investigate the forms of mental training which are practiced in the artistic swimming. The significance of this study is to help the preparation of the swimmers' prima performance through the mental training.

## 2 Method

This study uses a qualitative grounded theory method. The method of collecting the data of this study through field notes, interview toward the informants by taking a note and recording the information. The information is gained from the stories which have been delivered by the informants, with no treatment involved from the researchers. The technique of collecting the data is done by collecting the documentation, while the narrative note is gained from the subject of the study and narrative interview from the researchers [5]. The researchers did not give any treatment toward the object of the study, but only seek for the information. Data collection was carried out on the artistic swimming national team of Indonesia. The participant consisted of 10 swimmers of 12-24 years old and 2 coaches. The study has been conducted in the training centre of national team for the artistic swimming which is held in Yogyakarta during eight months.

The observation have been made while participating in the training center. Researchers recorded all events related to the land drill training process carried out by the team. Make notes of all swimmer's activities and how the trainer gives training. Information collected includes the understanding of land drill training, the form of

land drill training carried out in teams, land drill training procedures, and the position of land drill in supporting excellent performance.

### 3 Results and Discussions

#### 3.1 The Discrepancy in Understanding the Benefit of Land Drill from the Trainer and the Athlete

Land drill training model is usually practiced in the artistic swimming. This training is considered as routine set training accompanied by the music which is practiced on land. Such kind of training can be easily achieved when the trainers and the athletes understand the purpose of a particular training program. The team which consists of ten swimmers with a range age of 14-24 years old is adequately considered as a wide range of ages. Based on the rule of FINA (Federation Internationale de Natation), the age range in the national team is the combination of three groups based on the age including group B (13-15 years old), group A (16-18 years old), and open group (over 18 years old). The difference of age and experience form the different understanding about the benefit of land drill that they feel. In the table 1, the opinion of the swimmers and the trainers about the benefit of land drill is presented.

**Table 1.** The Definition of Land Drill According to the Trainer and the Athlete

<b>Respondent</b>	<b>Definition of Land Drill</b>
Trainer	Land drill is an effort to help the athletes in repairing their performance when they are practicing routine set. The form of land drill training is not only to help the swimmers to remember the movements and the position pattern. But, land drill can also help to practice the movements with the right technique so that the movement form can be seen clearly and meaningful in the juries' eyes and then reach a good water level.
Athlete I (KU B)	Land drill is a kind of training that is applied to help the swimmers in remembering the movement that is going to be practiced in the routine set.
Athlete II (KU A)	Land drill is an effort that is used to help the swimmers to remember the routine set, beginning from the movement until the position displacement pattern.
Athlete III (Open)	Land drill is a particular form of training done on land to help the swimmers in rehearsing to remember the movement and the position displacement pattern so that water training (pool) becomes more neat and beautiful.

Based on table 1, it can be understood that for the swimmers, knowing the land drill is considered as the training used to help to remember the movement in the routine set that they are going to perform. A study stated that in order to help to memorize the movement, the swimmers can practice the silent land drill which means that the swimmers are not allowed to produce any voice during the land drill [6]. Actually, land drill is not only considered as a training which can help the swimmers to memorize the routine set, but it is also considered as a part of mental training. As it has been stated by the trainers, land drill can be applied to repair the performance in the routine

set including the form of hand and foot movement and the pattern of position, and to help the improvement of water level so that it does not only help to remember the routine set. Another study stated that the artistic swimmers have a focus to improve *figure* ability; in this case *figure* ability refers to the ability in performing choreography routine [7].

Land drill is a training of routine set which is practiced on land, so it is different from the way of doing routine set in water. The foot movement cannot be done similarly to the water training. Then, the foot movement can be replaced by using hand swimming. Moreover, the head position is also used to determine the position of body in the water. In order to support the performance in the competition, the right way in doing land drill is much needed. Result of study which showed that land drill is a positive effort to help to repair the movements for the swimmers [8].

### 3.2 The Competition Result

In this training centre, the trainers use two different methods of land drill to confront the trial stage and the main competition. Since the process of the final selection in the team formation, land drill training that is applied is unstructured land drill. This training is done until achieving the trial stage. The achievement result of the trial stage does not reach the score that is expected to be achieved by the team, so the trainers are doing the evaluation toward the training program. The evaluation is considered as feedback toward the performance and becomes the way to repair the performance, it is similar to what is revealed a study [9]. The trainers give two different forms of land drill training. First, the form of unstructured land drill training which has been given since the first time of joining the training centre until the trial competition in Japan Open. Second, the structured training form that is done after trial competition is considered as the effort to repair the swimmers' performance. From those two kinds of land drill training, it can be seen that there is difference in the score that has been obtained. The following table 2 shows the result of the competition that is participated by the swimmers.

**Table 2.** Score Obtained from Japan Open and Sea Games

Number of Competition	Trial Score	Competition Score	Score Gap
Solo Technical Routine	62.6229	69.2267	6.6038
Solo Free Routine	69.8000	69.2000	-0.6000
Duet Technical Routine	64.5775	68.9504	4.3729
Duet Free Routine	70.7333	71.4667	0.7334
Team Free Routine	67.9000	71.4667	3.5667

Note: The table above is the official competition result from the competition organizer (Source: [www.fina.org/event/japan-open/results](http://www.fina.org/event/japan-open/results) dan <https://kualalumpur2017.com.my/seagames-sport.cshtml>)

The result of two competitions shows that there is a change in the score that has been gained. The trial competition is accomplished in Japan Open and the main competition is completed in Sea Games. The distance between each competition is four months. In these four months the structured land drill training is applied by the train-

ers. As the result, some competitions gain the improvement, especially the competition of Free Routine team. The achievement of movement mastery needs an adequate repetition in order to reach a good result [10]. Others stated that it needs long times to reach the motion skill through imagery training [11]. Based on the score gap from five numbers of competition which are participated (Table 2), there are four numbers of competition which gain the improvement score with varying gap. The score of one number competition has decreased, it occurs in the number of solo Free Routine.

This improvement score occurs because the change of form in land drill training that has been practiced is structured land drill. The training of land drill is more emphasized on the number of duet and team so that the improvement can be seen. According to a study [12], land drill can help to improve the motion skill in the water. However, on the solo number the swimmers do not practice land drill such as what has been practiced on another numbers, so there is different result in this case. The lack of the structured land drill training causes no maximal performance. The different result on the solo number of Technical Routine, although the swimmers do not practice land drill training, they have great experiences. In this phenomenon, it can be understood that the swimmers' experiences are used to deal with their mental problems. This solo swimmers' experiences can help to build their knowledge in dealing with the situation in such a competition. In line with [13] finding, it was stated that the cognitive skill change is able to help the improvement of the performance.

### **3.3 The Change of Patterns in Land Drill Training**

The evaluation that has been accomplished shows that all of physical and technical trainings have indicated the improvement based on the target that is arranged. However, the performance does not achieve the result based on the expectation. Mental and physical training have mutually beneficial attachment [14]. Based on this observation, the trainers believe that the mental training is not optimal to support the performance. Mental training is not only useful for the improvement of the swimmers' psychological ability, but it is also useful to improve the swimmers' skills. Coelho [15] said that mental training is able to improve the swimmers' concentration. Furthermore, the trainers develop the mental training as supporting performance in the main competition.

A kind of land drill that is applied toward this team is done through land drill training by involving the instruction when doing the training and it makes land drill training considered as imagery training. Repairing the athletes' motion performance can be accomplished through mental training [16]. The change of form in training that has been done is placed in the introduction form, before practicing land drill training, the trainers and the swimmers are doing the evaluation toward the training via video recording. By this video recording, they can see their mistakes or their improvements in the training [17]. This is aimed to make the swimmers to focus on what is going to be obtained. The following table is the comparison of the training that has been accomplished by unstructured and structured land drill.

**Table 3.** The Comparison Stage between Unstructured Land Drill Training and Structured Land Drill

Activities	Unstructured Land Drill	Structured Land Drill
Opening	In this stage, the trainers prepare the training and open the training section to begin land drill training.	In this stage, the trainers open the training section and provide the information about the training activities. For example, "In land drill training today, let's imagine the competition situation and we are ready to get down in the competition".
Reinforcement	The trainers do not give the guidance in practicing land drill as a part of reinforcement. Land drill training is directly accomplished and observed.	Reinforcement stage is done a minute before land drill is started. The trainers are doing reinforcement by following steps: <ol style="list-style-type: none"> <li>1. The swimmers are ready in their position and getting the instruction to close their eyes.</li> <li>2. Next, the trainers give the instructions: <ol style="list-style-type: none"> <li>a. "Imagine that you are in the competition arena"</li> <li>b. "You are ready to go to the arena, focus on your performance. The audience tribune is full of the opponent's supporters, so keep your concentration"</li> <li>c. "Imagine a beautiful path into the arena, imagine of doing choreography and its element with full of energy, and a good water level"</li> <li>d. "Although you are doing with the help of hand movement, you have to imagine that it is the movement element that you do"</li> <li>e. "This is your three minutes-struggle which cannot be repeated. Do your best"</li> </ol> </li> <li>3. After instilling the reinforcement to the swimmers, it is then continued by the land drill training.</li> </ol>
Realization	Doing land drill. <ol style="list-style-type: none"> <li>1. It is started by walking into the arena, configuring the opening movement until the position is ready.</li> <li>2. The soundtrack is played and the swimmers start to do routine choreography until the music is ended.</li> </ol>	Doing land drill. <ol style="list-style-type: none"> <li>1. It is started by walking into the arena, configuring the opening movement until the position is ready.</li> <li>2. The soundtrack is played and then the swimmers start to do routine choreography until the music is ended.</li> </ol>
Closing	In the end of the training, the trainers deliver the evaluation and motivate the swimmers to come in the next training.	In the end of the training, the trainers deliver the evaluation and motivate the swimmers to come in the next training.

This team is dominated by the young swimmers which includes not only from the aspect of age, but also from the aspect of experience. A kind of mental imagery completed with the guidance is believed as the right choice for the young athletes, this is in line with Setyawati's opinion [18]. Mental training is an effort to help the sport participant in improving the mental skill to achieve the successful performance and personal prosperity [19]. The ability of imagery has a significant relationship toward the athlete's movement skill [20]. In this case, it has been explained that not only the athletes who need the mental training, but also the trainers and those who are involved in handling the team. It is deemed necessary to know and understand about the mental

training through land drill. In preparing the team, the trainers are also able to arrange the mental training and its period like physical training. Setyobroto [21] explained that the treatment of mental training is a systematic treatment which takes a long time, but the result is more convincing in order to improve the athletes' performance.

The phenomenon found in this study is the application of land drill in every choreography training of routine set. Such kind of training form is usually practiced, but not really understood its benefit in the achievement of prima performance. The way to practice land drill training is same as the training of mental kinaesthetic imagery. Moreover, the involvement of the movement done by the trainers can help the swimmers to shape the description of the right movement. This is in line with Firmansyah's study [22]; the training of kinaesthetic imagery provides the real experience to the athletes.

Land drill training becomes an alternative to give the psychological training to the swimmers. The trainers do not need to provide a particular time to give the mental training, because it has been included in land drill training. The training of mental imagery through land drill training can be achieved by arranging the training with some steps which is similar to imagery training. Therefore, land drill training form becomes more structured and well-directed.

The result of this study helps the trainers in giving mental training to the swimmers. Doing land drill training with the right direction can help to achieve the prima skill. Similar to Hidayat's study [23], it was explained that mental imagery training is able to improve the athlete's motoric skills. Moreover, mental imagery training is also beneficial for the swimmers to create mind recording about the movement skill, not only to remember but to create the psychological experience also, so that it helps to prepare the excellent performance.

According to Bompa and Haff [24], all planning of physical, physical, and mental trainings are arranged before the training is held. These three kinds of training are completed since the beginning of the training program. Through land drill, the artistic swimmers' mental training has been accomplished based on the training program. This training is done without providing a particular separated time from the whole training times. The program of mental imagery training through land drill training to achieve prima performance has run for the artistic swimming.

#### **4 Conclusion**

To get excellent skills in artistic swimming consists of three forms of training, they are training in pool, training on land and land drill. Swimmers have different understanding of land drill according to age group. In the younger age groups, land drill is understood as a form of exercise for remembering routine set choreography. In the middle age group, the existing understanding is added by calculating the formation changes. The senior age group has a broader understanding to calculate neat and beautiful. The land drill training model is designed in detail with structured instructions to help athletes master the routine set. So it can be seen an increase in scores achieved in the two competitions that were followed.

Land drill by providing clear instructions in a structured manner including a form of mental training. The mental exercise be intended is imagery. This is done

during the training period, by providing a certain time in the training schedule. In the future, research can be developed in the right time to conduct a land drill. Or other research that leads to the development of the abilities of artistic swimming athletes.

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