

# Fenpot (Fencing Point Target) Technology

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**Abstract:** This research aims to develop the tool of reaction rehearsal, puncture accuracy, attack and defend. The population in this study is all athletes club fencing Tritech, Flogensa and Hope. The tool is a target-shaped board consisting of 5 round-shaped targets and is equipped with a puncture, level and timer display screen mounted on a frame that can move dynamically forward and backward with varying distances between 1 meter, 1.5 meters and 2 meters. The resulting speed is low to form the athlete's motion fundamental. Large group test results involving 14 athletes from the Flogensa and Hope clubs showed a 90% percentage of validity. It can be concluded that the exercise tools are good for improving accuracy and puncture reactions, attack speed and survival of fencing athletes. This tool is very helpful coach because it can be programmed as desired and run automatically so it can measure the results of the exercise with a very accurate and automatic.

**Keywords:** Fencing, Reaction, Accuracy and Attack Speed, Automatic Fencing Exercise Tool

## 1. Introduction

Based on observations from the results of PON XIX West Java 2016 Sumut Being ranked 10 with 2 bronze for fencing sports. We are sending out questionnaires to coaches and athletes who are clubs for city fencing because of the very lack of regeneration of young athletes. From the data collection that has been done to 15 fencing athletes in clubs in Medan city, it is found that 100% of athletes like the exercise at their fencing club. 75% stated that they never competed outside the field city. 85% stated that they follow the tournament no more than 3 times a year. 91% of athletes ever practice puncture accuracy. 93% of athletes ever do attack speed training. 86% of fencing athletes say that the practice of accuracy and reactions puncture pleasant. 58% stated that the attack speed training was great. 7% claimed to have done exercises with electronic devices / media. 100% stated the accuracy, reaction and puncture training using the tools / electronic media is required. The results of the questionnaire analysis show how much athlete and trainer need for Accurate, reaction and attack speed exercises using tools that can run automatically and can measure the results of their practice.

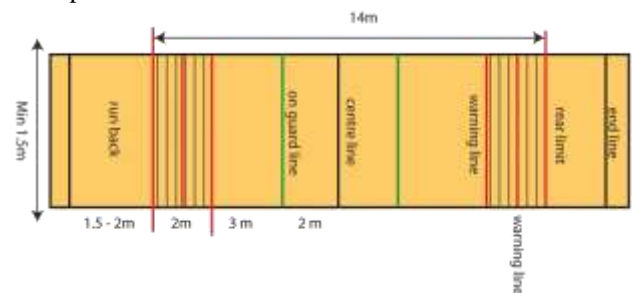
From the analysis of the needs undertaken, it can be concluded that the idea of this development research is the need for development of accuracy, reaction and attack speed training using tools that can be programmed by the trainer himself to enter the exercise program using the remote control as input commands. This tool is very helpful to improve the accuracy, reaction and speed of attack so that it can help the coach in creating an exercise program that aims to make athletes more achievers in academic and non academic and earnest in the practice of accuracy, reaction and attack speed so they can improve the achievement so even better.

## 2. Theoretical Basis

### The essence of Fencing

Fencing is a martial arts using a weapon that develops into a cultural art of agility sport with a weapon that emphasizes the ability techniques such as cutting, stabbing or fending off an opponent's weapon using the skill in utilizing hand

agility. There are three different types of fencing weapons: floret, degen, and sabel. The purpose of the fencing game is to get the point by stabbing the opponent's body area with a weapon. Each weapon has a different attack area such as the Floret type just as wide as the body or a metallic vest, the Degen and Sabel types can strike the entire body from head to toe. For the type of weapon Floret and Degen have the same way of using the piercing with the tip of the weapon while the type of weapon Sabel by way bulldoze. Fencing area is only 1.5 meters wide with a length of 14 meters is called piste.



Picture of Fencing (IKASI)

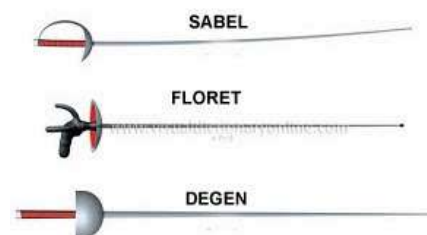


Figure 3: Types of weapons in fencing sports  
Source: <http://www.google.com/anggar>

### Basic Fencing Technique

The basic techniques of fencing are the ability to stab, deflect, attack and defend. In the fencing game the athlete must be able to master the basic techniques of fencing properly and skillfully.

### 3. Research Methods

#### Types of research

Research and development is a research that aims to produce products in the form of training tools accuracy, reaction and speed of fencing puncture. Sugiyono (2008: 407) "research and development methods are used to produce certain products, and test the effectiveness of these products to function in the wider community".

#### Population and Sample

As for the population in this study is athletes club Tritech, Flogensa and Hope numbered 18 people.

#### Research Goals

Target research or user targeted in research Development of training tools accuracy, reaction and speed of fencing against club athletes Fitgit, Folgensa and Hope.

#### Approach and Research Methods

The method used in this research is the development that includes: developing the product, testing the effectiveness of the product to achieve the desired goals. The end result of this research and development activity is a tool of accuracy, reaction and speed of fencing which is equipped with instruction manual of exercise tool. The design of the steps of product development in the form of the practice of passing accuracy of football in this study is as follows:



Figure Step Use of Research and Development Methods  
 Source: Borg and Gall (dalam Sugiyono 2008:409)

#### Product Validation, Evaluation and Revision

- 1) Product Revision I
- 2) Prototype Production
- 3) Prototype Tests
- 4) Product Revision II
- 5) Reproduction

#### Data analysis technique

Each validation instrument variable is calculated percentage and then averaged with another variable. Each validator will have a different value. The three validator values consisting of several variables to one model are averaged and that is what the reference is to whether the model is used or not. The formula for processing responses or evaluations of validators is calculated using the percentage formula:

$$\text{Formula: } P = \frac{\text{Number of Values Obtained}}{\text{Total Number}} \times 100\%$$

### 4. Tool

#### Leaderboard

This tool has 5 targets, one of the targets will live in random and green when pressed it will change to red color.



#### Movers

The frame is rectangular with a length of 280 cm, width 170 cm, and height 80 cm. this tool is equipped with 3 electric motors as the driving force, power source is electricity.



Fenpot exercise tool can move forward and back as far as 2 meters, according to the distance of the professional fencing athletes, but can be set the distance to 1.5 meters and 1

meter. The speed also varies from low to beginner athletes, while for junior and high athletes to professional athletes. Weapons on the tool can also pierce as they are attacking, the engine control part is behind and the whole tool is controlled through the target board. How to enter a command on this tool via remote with a function can set the time, level, speed and distance.

## 5. Results

### Phase 1

The small group test at club Trittech stated that 83% of them had no experience matching, 92% said they had problems with accuracy and pacing and attack speed reaction, 87% said they had never practiced accuracy and stab reaction with tools, 97% said they wanted training tools which can improve puncture accuracy and reactions.

### Phase 2

The large group test at the Flogensa club is beneficial for the purpose of training with puncture practice principles with a validity level of 83%. It is useful for accuracy training with 94% validity level. Useful for rehearsal exercises with 92% validity level. Useful for attack speed training with 89% validity level. From the security side of this tool is the main driving system with a validity level of 85%. Safety of arm motion system is 92% validity level. Security controls driving system with 86% validity level.

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