The influence learning used running ABC on the sprint capabilities

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Abstract

The purpose of this research is to know the Influence of learning through ABC run training to the ability of a sprint. This research uses a quasi-experimental research method with a pretest-posttest control group design. The population of this research is students of senior high school, sample determination is done by cluster random sampling technique. This research was conducted twelve times meeting with exercise frequency three times a week. The instrument used is through direct observation based on the criteria of the basic engineering assessment which has been provided. After the processing and data analysis, the last test result showed that the control group didn't experience significant change, while the experimental group experienced a significant change of test result. Based on the results of hypothesis testing it can be concluded that learning through exercise ABC Run has a significant influence compared to learning without through ABC Run training on the sprint capabilities.

Introduction

The results of running lessons are less satisfying to students, which can be seen qualitatively and quantitatively. Qualitatively it can be seen by observing running techniques, there are still many students who run with poor basic coordination (Asonitou, Koutsouki, Kourtessis, & Charitou, 2012; Chrisman, Quitiquit, & Rivara, 2013; Lawson et al., 2014). While quantitatively it can be seen from the acquisition of time records that are below the standard running speed of high school students.

Athletic learning in school is a forerunner to the ability of students to move their daily lives. There is a very important element of motion in athletics, walking, running, throwing, and jumping (Couch, Lewis-Adler, & Burton, 2011; Pfeiffer, Mangus, & Trowbridge, 2014). The basic motion in the athletic element will continue to develop under the abilities and growth of students (Joseph et al., 2013; Sobarna, 2016).

One method that will be applied is to use ABC’s running training method (Agari, Simanjuntak, & Haetami, 2019; Susiono, 2017). ABC running training method is one of the training programs that are arranged systematically in which there are elements of running and jumping techniques and varied movements performed at low, medium and high volumes and intensities, so this exercise is highly recommended by athletic trainers for included in the training program because the exercise movement is simple and can be done in a place that is not wide and can develop coordination of movements (Setyantoko, Widiastuti, & Hernawan, 2019). Some movements included in the ABC run training are a) Walking with your knees raised high; b) Walking with the knee lifted high accompanied by straightening the lower part of the leg; c) Jumping up and down with your knees held high accompanied by a straightening of the lower part
of the leg; d) Kicking butt (Hit kick); e) Sprint running arm movements; and f) Running with knees raised high followed by sprint acceleration (Sidik, 2009).

Just like learning ABC in school, running ABC is an important element of marathon training. This applies to professionals and amateurs. Regular running exercises have several positive effects on training, which will not only run more efficiently and faster but will also prevent injury (Damasceno et al., 2015). The application of ABC running learning can improve the basic movement skills of short distance running both start motion, short distance running, and finish motion (Paris, 2013). Next, Maulana through the results of his research concluded that there were significant differences in the effect of ABC running activities on the basic motion ability of a short distance running (Maulana, 2014). Based on the series of these descriptions, the author is interested in proving the ABC Run practice, which may have an impact on sprint ability.

In improving the ability to run, one basis is the coordination factor. Coordination is the ability to move with various levels of difficulty quickly and efficiently in full accuracy. Through improvements in the coordination sector, an increase in step length and frequency of steps will also occur, which impacts increasing the sprint ability.

ABC Run is an exercise that fixes the components of the coordination of movement in running, besides that ABC Run training is also used to fix the components of acceleration and balance. There are several studies that reveal the success of ABC run training on basic sprint movements. First, it is stated that the ABC run method gives an increase of 60 meters running, the results can be seen in each cycle (Edy, Simanjuntak, & Touvan). The application of the ABC running training method can improve the quality of the basic movements of short-distance running, starting from the start movement, running movements, and finish movements (Maulana, 2014).

Method

This research method uses a quasi-experimental method with a quantitative approach and the research design used is the Pre Test post-test control group design conducted on two classes of students of SMAN 3 Subang. To be clearer, the following can be seen from the research design images used (Suharsimi, 2006):

```
Group  Pre Test  Treatment  Post Test
O₁  ➔  T₁  ———— X ————  T₂
O₂  ➔  T₁  ————  T₂
```

**Figure 1.** Randomized pre-test post-test group design

The population in this study were all students of class X of SMAN 3 Subang, and the sample was then taken by using cluster random sampling technique, which is random sampling which is not individual, but small groups of units (Sudrajat, 2009). The instrument used is an assessment test for the basic motion of sprinting. This instrument has been validated and approved by experts in athletics using face validity techniques. The data analysis technique used is by comparing the results of the significance test using the two average equality tests. Where first to find the average value of standard deviation from the test results of each group, test for normality and homogeneity, and then test the significance with the two average equality test approach.

Results and Discussion

The following is a table that describes the statistical results of the data that has been got from the results of research in the field. Based on table 1 it can be seen that the minimum value in the control group was 51.67 for the initial and final tests, the maximum value got was 70.00 for the initial test and 68.33 for the final test, the average of the initial control group was 59.51 and 58.70 for the final test. Whereas in the experimental group got a minimum value of 51.67 for the initial test and 58.33 for the last test. The maximum value is 70 for the initial test and 80 for the last test. And for the average score got is 59.56 for the initial test and 68.32 for the last test. This normality calculation uses the Lilliefors normality test, by processing using the SPSS version 16 computer help program. The results are:
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Table 1. The results of each group statistics calculation

<table>
<thead>
<tr>
<th>Statistic</th>
<th>Control</th>
<th></th>
<th>Experiment</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Pretest</td>
<td>Posttest</td>
<td>Pretest</td>
<td>Posttest</td>
</tr>
<tr>
<td>N</td>
<td>38</td>
<td>38</td>
<td>38</td>
<td>38</td>
</tr>
<tr>
<td>( \bar{x} )</td>
<td>59.51</td>
<td>58.70</td>
<td>59.56</td>
<td>68.32</td>
</tr>
<tr>
<td>SD</td>
<td>5.48</td>
<td>5.06</td>
<td>5.34</td>
<td>6.19</td>
</tr>
<tr>
<td>Minimum</td>
<td>51.67</td>
<td>51.67</td>
<td>51.67</td>
<td>58.33</td>
</tr>
<tr>
<td>Maximum</td>
<td>70</td>
<td>68.33</td>
<td>70</td>
<td>80</td>
</tr>
</tbody>
</table>

Table 2. The results of the calculation normality tests for Lilliefors

<table>
<thead>
<tr>
<th>Statistic</th>
<th>df</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pre-control</td>
<td>.123</td>
<td>.157</td>
</tr>
<tr>
<td>Post-control</td>
<td>.130</td>
<td>.105</td>
</tr>
<tr>
<td>Pre-experiment</td>
<td>.127</td>
<td>.124</td>
</tr>
<tr>
<td>Post-experiment</td>
<td>.106</td>
<td>.200*</td>
</tr>
</tbody>
</table>

* Lilliefors Significance Correction

This test will test the sample hypothesis derived from the population with normal distribution, the value with the criteria if. Sig > 0.05 then the hypothesis is accepted and if the value of Sig < 0.05 then the hypothesis is rejected. Based on the table above, the value of Sig. of all groups showed numbers exceeding 0.05 all samples in the group tested came from populations that were normally distributed, so the hypothesis was accepted.

The next step for the statistical test requirements is the homogeneity test. This test uses the Levene’s Test test carried out through SPSS 16. The criteria are to accept the hypothesis if the Significant Price (Sig) is smaller than 0.05 (Sig <0.05), in other cases the hypothesis is rejected. The homogeneity test results can be seen in table 3:

<table>
<thead>
<tr>
<th>Levene Statistic</th>
<th>df1</th>
<th>df2</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>2.217</td>
<td>1</td>
<td>74</td>
<td>.141</td>
</tr>
</tbody>
</table>

The results of testing the homogeneity of the pretest and posttest variables using Levene's test show the value of .Sig is 0.141, because at .Sig> 0.05, the hypothesis is accepted; it means that all the data is homogeneous. The next step is to test the significant differences in the results of training using the average significance test, namely the t-test. The test results can be seen on table 4:

<table>
<thead>
<tr>
<th>Group</th>
<th>( \bar{x} )</th>
<th>( t_{\text{count}} )</th>
<th>( T_{\text{table}} )</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Control</td>
<td>Pretest</td>
<td>59.52</td>
<td>1.183</td>
<td>1.69</td>
</tr>
<tr>
<td></td>
<td>Posttest</td>
<td>58.70</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Exp</td>
<td>Pretest</td>
<td>59.56</td>
<td>9.227</td>
<td>1.69</td>
</tr>
<tr>
<td></td>
<td>Posttest</td>
<td>68.32</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

After testing the results of data with SPSS for Windows v.16, the results got in the control group p = 0.244 > \( \alpha = 0.05 \). Then it can be concluded that H1 is rejected and H0 is accepted. So, that means there is no difference in the increase in the results of the ability to run fast when without being given treatment to the control group. What happened in the experimental group got the results of p = 0.000 < \( \alpha = 0.05 \). Then it can be concluded that H1 is accepted and H0 is rejected. So, that means there is a difference in the increase in the results of the ability to run fast before and after being given the Running ABC training treatment in the
experimental group. A person who takes part in training in developing basic mobility abilities, such as walking, running, jumping, throwing, catching, rolling, and balance. Later someone will have good posture and coordination skills. The Running ABC help and support every move made by students during physical tests and skills tests (Desiga Srinivasan, 2009; Susiono, 2019). In the long run, running ABC will ensure runners have sustainable and healthy training success (Giartama, 2018; Hercock, 2017). From the results of testing the hypothesis above it can be concluded that learning through ABC Run training can affect the results of sprinting ability, this can be seen from the results of comparison with paired t-test that after being treated the results of students' sprinting ability is increased more than untreated.

Conclusion

Based on the results of the study it can be concluded that several important points are: 1) Learning through ABC Run training has a significant influence on sprint ability; 2) Learning without going through ABC Run training does not have a significant effect on sprint ability; 3) Learning through ABC Run training has a significant effect compared to learning without going through ABC Run training on sprint abilities.

References


