

COACHING EDUCATION

An Assessment of the Benefits of Off-Season Training Among Teenage Basketball Players

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Abstract

The purpose of this research study was to establish the benefits of off-season training among teenage basketball players. The goal of every school basketball team is to achieve the best outcomes possible among its athletes; hence, the study intends to investigate the possible outcomes of off-season training on a junior level basketball team setting. In this regard, 40 youth participants aged between 14 and 18 years were selected from their respective school basketball teams to voluntarily take part in the off-season training program. For the sample, anthropometric measures such as weight or height were not taken into account. A quantitative research design was used in which 20 participants were assigned to the control group and 20 remaining participants were assigned to the test group. The focus was to establish the development of athletes' rebounding, passing, scoring, and dribbling skills at the end of the off-season training. The descriptive statistics of the study entailing the mean, standard deviation, sample variance, skewness, and confidence interval indicated a significant improvement in the dribbling, scoring, passing, and rebounding skills in the test group, whereas there was a significant drop in the same skills observed in the control group. The correlation analysis in the pretest assessment had values of ($r = 0.17$), ($r = 0.5$), ($r = -0.5$), and ($r = 0.28$) and posttest assessment had values of ($r = -0.76$), ($r = -0.58$), ($r = -0.47$), and ($r = -0.99$) in dribbling, scoring, passing, and rebounding, respectively. Thus, this

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indicates that off-season training is a positive predictor of better performance among teenage basketball players.

Training forms a critical component in the achievement of success in any sporting activity. Normally, there is a recommended method of implementing training in a specific sport, which is strongly driven by the objectives of the coach and players. Training approaches can be implemented during either an active season or an off-season. This will depend on the choice of the coach and the availability of a plan to be followed by players. Basketball as a sport demands its players to be taken through rigorous training for them to achieve the best outcome in their respective sports.

For these training objectives to be achieved, the respective team coach needs to prepare a timetable that takes care of the athletes' needs in the best way possible. Most training manuals tend to recommend a program that can be adjusted over an active season so that athletes achieve their best form. On-season training has advantages and disadvantages of which teams are aware. This could be attributed to strength training perspectives, occurrence of injuries, recovery time, and rest time, among others. However, it is also important to know the challenges, gains, and problems that off-season training may have on basketball players.

Thus, this forms the core of this research, which is to examine the potential benefits of carrying out off-season training among basketball players. The main focus is on the specific attributes that off-season training entails for a basketball player enrolled in any team setting. The team setting will specifically include institutions with a strong bias for those who participate in a competitive environment in which team members are required to achieve outlined performance objectives. Even though some level of focus has been given on the relative benefits of implementing an off-season training program among athletes, the study focuses on basketball as a game that is loved by many Americans.

According to Preedy (2012), there are three main phases for basketball coaches: the off-season in which the main focus is on improving anaerobic and aerobic conditioning, the preseason in which technical and anaerobic abilities are improved, and the in-season in which maintenance of players' fitness capacity is a priority. This shows that off-season training is an equally important phase

that deserves to be given significant consideration. In this regard, the results of the study provide significant contribution into the body of knowledge regarding aerobic and anaerobic conditioning, which are the main attributes of performing off-season training.

Additionally, the study provides valuable information for basketball coaches and players participating in competitive settings. This is in the form of tips that coaches need to consider for players to achieve the best outcome in an off-season training program. The main goal of every coach is to see their team prowess regardless of the situation or opponent that their team is playing against. Thus, the study also raises the standards of off-season training by showing how it can be used to improve team performance.

In the contemporary world of sports, strength training of athletes is done to ensure athletes are in their best shape possible. The goals for training vary depending on the game, due to the unique movements entailed in each. Most of the time, the focus is mainly on preseason and in-season training because of the timing of the athletes' active involvement in their respective games. Preseason, in-season, and off-season training in basketball mainly focuses on enhancing the power, strength, balance, speed, fitness, skill work, and mobility of the players. However, the intensity given to each of these elements varies in each of the seasons. In most situations, off-season training is used to complement the strength training initiatives to be implemented in the other seasons. As a result, off-season training in basketball has been debated in different professional sports forums as a major phase in the development of professional skills of athletes.

Method

Participants and Sampling Procedures

The subjects for this research were selected from a group of youth basketball players participating in a high school setting. In this regard, 40 youth participants aged between 14 and 18 years were chosen from their respective school basketball teams. Coaches in these schools play an important role of linking the researcher to the athletes. During the off-season, athletes who wanted to participate in the study were required to submit their names to their coaches. Because getting a good number of study participants willing to remain committed to the program for the entire off-season

proved challenging, permission letters addressed to the school head teacher were circulated to at least five schools belonging to the same school district. The selection process did not give preference to athletes based on their anthropometric measures such as weight, height, body fat percentage, and VO_2 max. Because athletes portray these traits differently, the focus of the study was on how the off-season training program affected their performance.

Research Design

This research employed a quantitative study design because the focus was on the outcomes based on a comparison between youth athletes who attended an off-season training program versus youth athletes who chose not to attend a training program. A true experimental design was used whereby subjects were divided into two groups, experimental and control, on a voluntary basis (Andrew et al., 2011, p. 47). In this regard, a pretest–posttest group design was administered to each participant in the experimental and control groups. The pretest ascertained the skill level of each participant, which was used as the baseline information. On the other hand, the posttest established the skill level of athletes at the end of the off-season training season. Of the 40 voluntary study participants, 20 were allocated to the control group and 20 were allocated to the experimental group.

Experimental Manipulations and Interventions

First, behavior observation form a major component of retrieving baseline information and any differences observed on their performance skill set. For purposes of this research, the dependent variable was the differences observed in the performance skill set, focusing on how the off-season training changes the attributes of the baseline information that was retrieved. The independent variable was the off-season training design to which participants were subjected. The skill sets to be assessed included dribbling, scoring, passing, and rebounding. These influenced the desired measurement units that were used in assessing the presence of improvement or no improvement after the off-season training.

The pretest training stage relied on information provided by the respective coaches of each participant. This was used as baseline data based on the average figures provided by the coaches. When

these members rejoined their respective teams at the beginning of a new season, a postassessment that established the presence or lack of improvement was conducted. Scoring of the instrument was based on whether an athlete's skill set was high, medium, or low. Because this is a unique approach employed by the research, it has a positive impact on the reliability of the data because it showcases an improvement or lack of improvement among the participants in their normal school team setting. Thus, the data were meaningful for similar youth school settings. Additionally, the instrument eliminated any bias, because the pre- and postassessments for all athletes were done in a controlled setting.

Data Collection

As explained, the coaches of the respective participants played an important role in providing baseline information. They used the instrument tool that was provided to assess players' skill sets in scoring, dribbling, rebounding, and passing. At the end of the study, the same study instrument assessed whether there was an improvement in the mentioned skill sets.

Tests and Testing Protocol

The drills used in the off-season training entailed plyometrics and conditioning, agility, explosive movements in the weight room, core training, and hand-eye coordination skills. Table 1 shows the program that was used.

Table 1
Program Schedule

Week	Plyometrics and conditioning	Explosive movements in the weight room	Core training	Hand-eye coordination drills
1	Mon, Tue, Wed	Tue, Fri	Wed, Thur	Thur, Fri
2	Mon, Tue, Wed	Tue, Fri	Wed, Thur	Thur, Fri
3	Mon, Tue, Wed	Tue, Fri	Wed, Thur	Thur, Fri
4	Mon, Tue, Wed	Tue, Fri	Wed, Thur	Thur, Fri

Results

Sample

The sample that was used for the research was divided into two main groups: the test group and the control group. These groups were subjected to preliminary assessment for collecting baseline information that indicates the respective level of proficiency exhibited by both groups. After the preliminary assessment, the test group was subjected to the training drills, whereas the control group was not subjected to any training drill. The samples were generated from a high school setting of students who are active members of their school basketball teams (this was not limited to members who had been previously involved in competitive competitions).

Survey Findings

This section provides in tables and figures pretest and posttest data for the dribbling, scoring, passing, and rebounding skills of both the test group and control group.

Pretest Data

Table 2 and Figures 1 and 2 show the baseline information collected in the preliminary assessment of the athletes' skill sets.

Table 2

Baseline Information Collected in the Preliminary Assessment of the Athletes' Skill Sets

Skill	High	Medium	Low
Test group			
Dribbling	4	8	8
Scoring	6	3	11
Passing	7	8	5
Rebounding	7	6	7
Control group			
Dribbling	6	6	8
Scoring	5	5	10
Passing	8	5	7
Rebounding	5	6	9

Figure 1

Graphical Representation of the Test Group Baseline Assessment Information

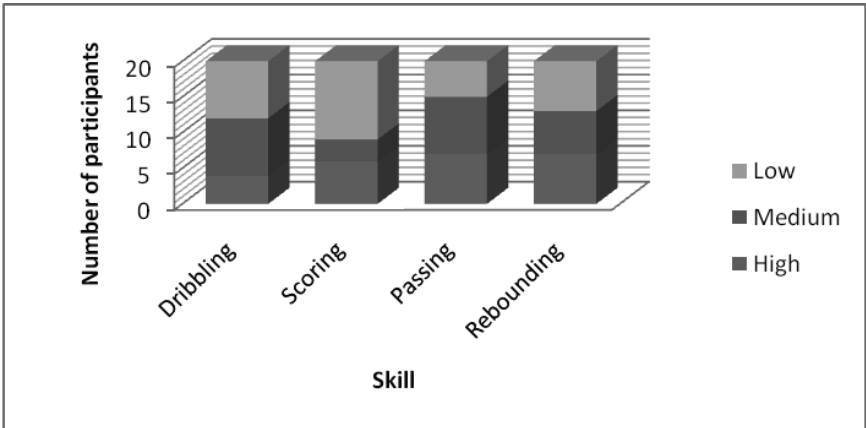
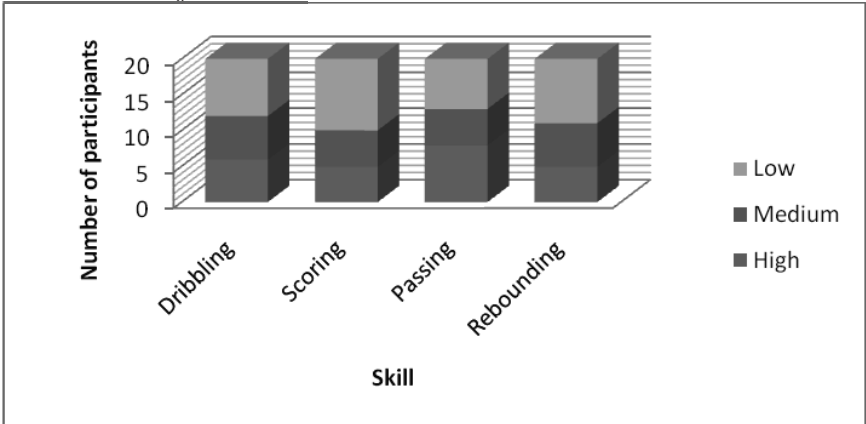


Figure 2

Graphical Representation of the Control Group Baseline Assessment Information



Posttest Data

Table 3 and Figures 3 and 4 show the baseline information collected in the preliminary assessment of the athletes' skill sets.

Table 3
Information Collected in the Postassessment of the Athletes' Skill Sets

Skill	High	Medium	Low
Test group			
Dribbling	12	4	4
Scoring	14	3	3
Passing	13	4	3
Rebounding	15	4	1
Control group			
Dribbling	4	6	10
Scoring	3	4	13
Passing	5	4	11
Rebounding	3	8	9

Figure 3
Post-Off-Season Training Assessment of the Test Group Athletes' Skill Sets

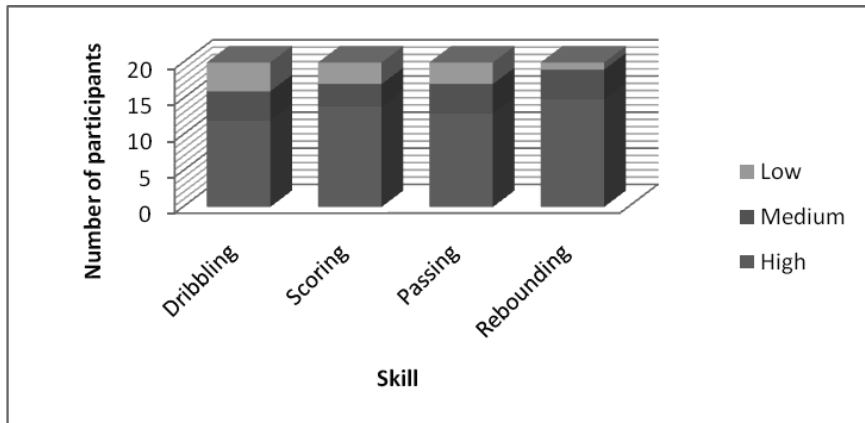
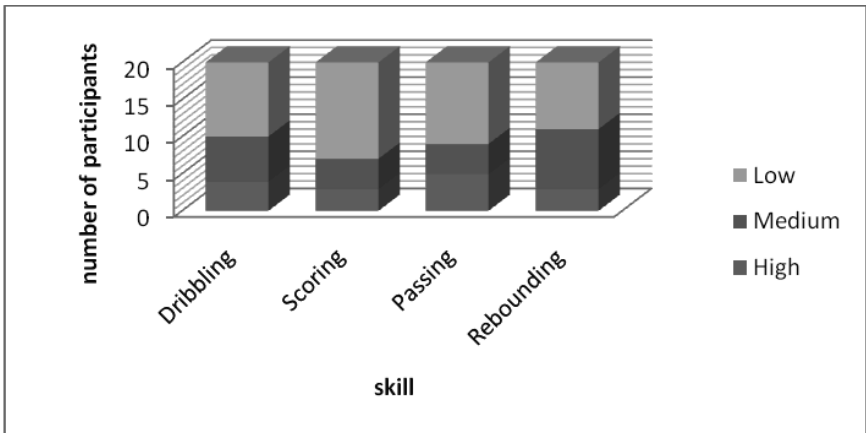


Figure 4

Post-Off-Season Training Assessment of the Control Group Athletes' Skill Sets



Analysis

Descriptive Statistics

The descriptive statistics function in Microsoft Excel 2010 established the mean, standard deviation, sample variance, skewness, and confidence level (95%) of the test and control groups during preassessment and postassessment after athletes had been taken through the off-season training program. Tables 4 and 5 list the descriptive statistics preassessment for the test group and the control group, respectively. Tables 6 and 7 list the descriptive statistics postassessment for the test group and the control group, respectively.

Table 4

Descriptive Statistics Pretest Assessment for the Test Group

Descriptive statistic	Dribbling	Scoring	Passing	Rebounding
Mean	6.67	6.67	6.67	6.67
Standard deviation	2.31	4.04	1.53	0.58
Sample variance	5.33	16.33	2.33	0.33
Skewness	-1.73	0.72	-0.94	-1.73
Confidence level (95.0%)	5.74	10.03	3.79	1.43

Table 5*Descriptive Statistics Pretest Assessment for the Control Group*

Descriptive statistic	Dribbling	Scoring	Passing	Rebounding
Mean	6.67	6.67	6.67	6.67
Standard deviation	1.15	2.89	1.53	2.08
Sample variance	1.33	8.33	2.33	4.33
Skewness	1.73	1.73	-0.94	1.29
Confidence level (95.0%)	2.87	7.17	3.79	5.17

Table 6*Descriptive Statistics Posttest Assessment for the Test Group*

Descriptive statistic	Dribbling	Scoring	Passing	Rebounding
Mean	6.67	6.67	6.67	6.67
Standard deviation	4.62	6.35	5.51	7.37
Sample variance	21.33	40.33	30.33	54.33
Skewness	1.73	1.73	1.67	1.41
Confidence level (95.0%)	11.47	15.78	13.68	18.31

Table 7*Descriptive Statistics Posttest Assessment for the Control Group*

Descriptive statistic	Dribbling	Scoring	Passing	Rebounding
Mean	6.67	6.67	6.67	6.67
Standard deviation	3.06	5.51	3.79	3.21
Sample variance	9.33	30.33	14.33	10.33
Skewness	0.94	1.67	1.6	-1.55
Confidence level (95.0%)	7.59	13.68	9.40	7.99

Correlation Analysis

The correlation analysis entailed a correlation of the test and control groups in the pretest and posttest assessment stages. Tables 8 and 9 show the r value for each skill preassessment and postassessment, respectively.

Table 8
Pretest Assessment r Value

Skill	r
Dribbling	0.17
Scoring	0.5
Passing	-0.5
Rebounding	0.28

Table 9
Posttest Assessment r Value

Skill	r
Dribbling	-0.76
Scoring	-0.58
Passing	-0.47
Rebounding	-0.99

Discussion

First, the study supports Jay et al.'s (2005) findings that training is a positive predictor in the demonstration of positive performance among athletes. In the research, the results of the regression analysis for the test group illustrate that athletes who participated in training showed improvement in their respective skills of passing, scoring, rebounding, and dribbling.

Second, the findings also reveal an increase in the average performance of athletes, as demonstrated in the graphical illustrations. Indeed, the average scores for dribbling, scoring, passing, rebounding improved significantly in the test group and dropped in the control group. In the initial assessment, the performance of the two groups was almost at par. This supports Margaret's (2010) view that participation in off-season training can lead to positive outcomes in the performance of athletes.

Third, the results also imply that athletes who participate in agility drills, explosive movements in the weight room, core training, and eye-hand coordination skills during their off-season training will experience improved performance and coordination when the

season resumes. Thus, these results can be of use in institutional teams that usually go on breaks during which the coaches have little or no access to the athletes. Finally, more research still needs to be done in determining how the length of off-season training might impact the performance of athletes.

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