

Effects of Knowledge of Results on Specified Skill Acquisition among Fresh Cricket Players

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Abstract—This study was conducted to investigate the extent with which knowledge of results influences the performance of cricket players. A sample of 160 fresh students in the Department of Physical and Health Education who are novice in the game were randomly assigned into two groups. The first group of eighty (80) subjects was classified as experimental group while the second group of eighty (80) subjects was the control group. Subjects in both groups were asked to bowl and bat ten times each for a period of six weeks. After the first round, the subjects in the experimental group were allowed feedback on their performance in the first trial while those in the control group were denied feedback. Two null hypotheses generated for the study were tested using percentages and chi-square statistical analysis at 0.05 level of *significance*. Analysis of data showed that knowledge of results influenced the performance of cricket players. It was concluded that knowledge of results is pertinent for effective skill acquisition and could enhance better performance among unskilled cricket players. Hence, it is suggested that immediate feedback on the level of skill acquisition by the prospective and unskilled cricket players would inspire them for better performance in cricket tournaments.

Keywords—Batting, Bowling, Knowledge of Results, Performance, Skill Acquisition.

I. INTRODUCTION

Feedback is an essential component in the successful acquisition and development of skills, regardless of the stage of acquisition or age of the learner. Feedback provides information about the performance that allows the learner to adjust and improve or continue efficient performance. Feedback can come from internal and external sources; it may be given at different times such as concurrent or delayed; and it may provide different information such as knowledge of performance and knowledge of results [1]. One type of feedback most commonly used in skill acquisition studies is knowledge of performance (KP) and knowledge of results (KR). KP refers to kinematic information about the actual execution of the movements performed [3]. The information provides a basis on which to assess the correctness of the movement, for example a sprinter sees a video replay of his or her performance during a training session. There are two common forms of KP feedback; video or verbal feedback and self directed strategies [5]. Video and self directed attention focusing may be critical to actively involving athletes in the

learning process, such as identifying errors that the teacher believes to be important. Typical sport settings often limit the amount of instruction given due to participant numbers or time constraints, therefore if feedback is considered important in the learning process, performance could be enhanced through prompting athletes on task relevant movement cues [5].

Effective coaching feedback helps athletes learn how to correct errors quickly. After an athlete performs a skill or trial, he may ask, "how did I do?" or "how close was I to the mark?" Providing essential information to athletes at just the right time can accelerate their progress. Positive Feedback—when a skill is performed correctly giving a successful outcome. The player then knows what to repeat for the next time that he performs the particular action. This can get the player aroused and the player becomes more motivated. This type of feedback is essential for beginners. An example of this would be when a basketball player performs a good jump shot and the coach tells him that he had good technique [8].

Negative Feedback—This is more than just picking out a weakness in the players game. It includes what the player should do to correct the fault. This feedback must be used carefully because it can easily demotivate the player. To a player who is well developed in their sport this type of feedback is vital to tune their techniques; e.g. a coach telling a basketball player that his lay-up is not correct but that he should be placing the ball in the square on the board [9].

Extrinsic Feedback—This is feedback from without e.g. teacher, coach, friend or someone watching the player and telling the player how he is performing.

Intrinsic Feedback—This is feedback that comes from within of the performer to see how the skill was performed, e.g. a badminton player assessing his serve after it has gone into the net.

Three primary reasons for providing meaningful information to athletes and teams after a performance are to: (a) motivate, (b) reinforce good performances or discourage poor ones, and (c) speed up improvement. This type involves information about a performance provided from an external source, such as the coach, who may provide additional information in terms of knowledge of results and knowledge of performance [2].

Knowledge of results (KR) is defined as extrinsic or augmented information provided to a performer after a response, indicating the success of his actions with regard to an environmental goal. KR may be redundant with intrinsic feedback, especially in real-world scenarios—However, in experimental studies, it refers to information provided over and above those sources of feedback that are naturally

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received when a response is made (i.e., response-produced feedback. Typically, KR is also verbal or could be verbalized [3].

Knowledge of results means that the coach provides information that is specific to the outcome e.g "You were about 3 inches off your mark". It implies that knowledge of performance is information about what the athlete actually did that led to the outcome: "You leaned back just a bit too far, so shift your weight forward".

Knowledge of results suggests how successful the skill was performed, and comes from an external source. This could include a coach discussing the outcome of a performance with the athlete, who sees the ball dropping into the basket from a jump shot, or from score boards. If the skill execution is successful, the athlete is aware of the need to repeat the performance. When results are not favourable, a change must be made to improve performance. Hence, Knowledge of performance is information received about how well a skill was performed. It may be internal or external. For example, a diver may gain information from an external source such as video replay about the position of her body during a movement or a basketball player may put up shot and feels the execution is incorrect resulting in the shot being missed [3].

According to [4] good coaches are masters at giving and receiving feedback. They are continuously observing their players in action, analyzing their movements, and providing verbal and visual information to them about what they did, whether it met their expectations or not and what they might do in the future to improve.

Typically, coaches convey four forms of feedback as *knowledge of results*, *knowledge of performance*, *motivation*, and *behavioral control*. Knowledge of results entails a coach providing a player with information about whether or not s/he achieved his/her objective. In sports such as track and field a coach will provide athletes with information about their running times, distance jumped, or length of a throw. This is information that the athlete will need to confirm from reliable measurement instruments that the coach typically monitors such as watches or measurement tapes. In sports such as soccer and basketball, knowledge of results is typically redundant with what an athlete himself can monitor. This may include whether: a pass is completed, a defensive player blocked a shot, or a goal was scored. Actually because athletes can assess such information for themselves a question arises as to whether or not such information needs to be provided by a coach. Traditionally, coaches do provide such feedback, but this may be more because of convention and social expectations than of providing meaningful information to the athlete.

Knowledge of performance entails coaches providing athletes with information about the quality and quantity of their actions. This can be further broken down to include information about the decisions they make and how well they execute responses. For example, if an athlete made a shot when she should have passed, or passed to one teammate rather than another one a coach can provide feedback to the athlete about having made an error in decision making. For

games such as soccer and basketball, athletes must learn tactical decision making as well as how to execute skillful responses. A strength of the games approach to coaching (to be covered in a subsequent session) is that it promotes both tactical learning (decision making) and skill development together. [3]

A more commonly understood aspect of knowledge of performance is that associated with providing feedback about responses themselves. Coaches give information to players about where to face, how to place their feet, which part of the foot to kick a ball, the speed with which to pass, a ball and how to bend knees to generate enough force to propel a ball to the goal area. Knowledge of performance about the intensity of an action made by a player can also be critical to the athlete's development and a team's success. For example, an athlete may be able to perform the technical aspects of a task such as playing defense, but unless it is done with speed and alertness, it will probably not be very effective. Thus, knowledge of performance entails coaches providing feedback to athletes about the quality of their performance and the energy they expend performing various tasks [10].

II. MATERIALS AND METHODS

A sample of one hundred and sixty (160) fresh students in the Department of Physical and Health Education in Adeyemi College of Education participated in this study. The subjects who have not played the game before were randomly assigned into experimental and control groups. The test time focused on bowling and batting in the game of cricket. Subjects in the experimental group and control group were asked to bowl ten times each and bat ten times each per training session. After the first round, subjects in the experimental group were given treatment and feedback on the first trial while subjects in the control group were not given any feedback at all. The treatment continued for a period of six weeks.

Data were collected immediately after the training programmes. Students were randomly assigned into experimental and control groups. Subjects in the experimental and control groups were asked to bowl and bat ten times each during training session for a period of six weeks. After the first round, the subjects in the experimental group were given treatment and feedback on the first trial while those in the control group were not given any feedback.

III. RESULTS

Hypothesis 1: Will there be any significant difference in the performance test score of subjects in experimental and control groups before knowledge of results in cricket game.

TABLE I
RESPONSES ON PERFORMANCE TEST SCORE OF SUBJECTS FOR BOWLING
SKILLS BEFORE KNOWLEDGE OF RESULT

Group	No of Subjects	No of Trials per Subjects	No of Good Bowling	%	No of Bad Bowling	%	X ² Value
Experimental	80	10	236	29.5	564	70.5	2.28
Control	80	10	264	33	536	67	

Table I shows that there was no significant difference in the performance test score of subjects in experimental and control groups with Experimental group having 29.5% of number of correct bowling and control group having 33% of correct bowling before knowledge of result was introduced. It was revealed from the study that the subjects in experimental and control groups were at the same level of skill acquisition.

TABLE II
RESPONSES ON PERFORMANCE TEST SCORE OF SUBJECTS FOR BATTING
SKILLS BEFORE KNOWLEDGE OF RESULT

Group	No of Subjects	No of Trials per Subj.	No of Good Bowling	%	No of Bad Bowling	%	X ² Value
Experimental	80	10	464	58	336	42	0.50
Control	80	10	450	56.25	350	43.75	

Table II reveals that there was no significance difference in the performance test score of subjects in experimental and control groups with Experimental group having 58% of number of good bating and control group having 56.25% of correct bowling before knowledge of result was introduced. It was revealed from the study that the subjects in experimental and control groups was at the same level of skill acquisition

Hypothesis 2. Will there be a significant difference in performance test score of subjects in experimental and control groups in bowling skills after knowledge of results in cricket game.

TABLE III
RESPONSES ON PERFORMANCE TEST SCORE OF SUBJECTS FOR BOWLING
SKILLS AFTER KNOWLEDGE OF RESULT

Group	No of Subjects	No of Trials per Subjects	No of Good Bowling	%	No of Bad Bowling	%	X ² Value
Experimental	80	10	60	70	240	30	120.7
Control	80	10	42	2.75	458	57.25	6

Table III shows the performance of subjects for bowling after knowledge of results. It can be seen from the performance of subjects in experimental and control groups that the performance of subjects in the experimental group greatly improve and better than that of control group. The percentage of good and correct execution of bowling skills was 70% for experimental group while that of control group was 42.75%. The chi-square value of 120.76 obtain was greater than the table value of 5.99 the hypothesis which state that there will be no significance difference in performance test score of subjects in experimental and control groups in bowling skills after knowledge of results in cricket game was therefore rejected.

TABLE IV
RESPONSES ON PERFORMANCE TEST SCORE OF SUBJECTS FOR BOWLING
SKILLS AFTER KNOWLEDGE OF RESULT

Group	No of Subjects	No of Trials per Subj.	No of Good Bowling	%	No of Bad Bowling	%	X ² Value
Experimental	80	10	525	65.63	275	34.37	18.86
Control	80	10	440	55	360	45	

Table IV shows the performance of subjects for bowling after knowledge of results. It can be seen from the performance of subjects in experimental and control groups that the performance of subjects in the experimental group greatly improve and better than that of control group. The percentage of good and correct execution of batting skills was 65.63% for experimental group while that of control group was 55%. The chi-square value of 18.86 obtain was greater than the table value of 5.99 the hypothesis which state that there will be no significance difference in performance test score of subjects in experimental and control groups in batting skills after knowledge of results in cricket game was therefore rejected.

IV. DISCUSSIONS

From Tables I-IV, it can be seen that there is no much difference between the experimental group and control group as per their knowledge of bowling and batting in cricket game prior to knowledge of result. It was observed that the preliminary knowledge of both the experimental group and control group were the same before KR (knowledge of results). The chi-square analysis in the pre-test, experimental and the control groups showed no significant statistical difference and this indicated that the two groups were comparable before applied treatment.

Table II shows a very high significant difference between the experimental group and control group when treatment was given after each trial to experimental group, it was observed that there was a great change in the performance of their skill compared with the control group. This indicated that when feedback is given to an individual in whatever he has learnt, there will be improvement.

This finding is in line with [5] which suggest that feedback indeed influences performance interactively. Reference [6] reported a correlation of 0.60 between goals and performance when knowledge of results was given and a correlation of 0.01 when knowledge of results (feedback) was not given. This, therefore, suggests that knowledge of results is necessary for goals to be achieved.

It is important to note that knowledge of results revealed to the subjects in the experimental groups has not given them information about how to perform the task better; rather, it has been information with which the level of effort can be regulated. [7]

V. CONCLUSION

This study investigated the extent to which the knowledge of results of cricket players influences their performance. The results from Tables III and IV showed that knowledge of results is deemed pertinent for effective skill acquisition and could enhance better performance among unskilled cricket players. It was revealed that goals without knowledge of results (feedback) are not sufficient to improve performance, but given goals, knowledge of results is sufficient to effect performance improvement. Thus, knowledge of results seems necessary for goals to be effective.

There are two reasons why knowledge of results or feedback has motivational effects. First, it shows performance in relation to goal. Furthermore, recent experimental evidence suggests that feedback in relation to specific goals is particularly important for persons high in achievement need, such as athletes.

In athletics, importance of knowledge of results cannot be over-emphasized. There is no form of athletic competition in which knowledge of results would not be available to the performer after athletic performance and competition. It can be seen that with the knowledge of results, performances in skill are improved and it enhances high achievers. It also increases the percentage of performance in skills from low to high.

It was found that the effects of receiving performance feedback after task performance were significantly greater than when no feedback was experienced. Also, feedback increased the relationship between performance and self-set goals.

Positive Feedback-When a skill is performed correctly giving a successful outcome. The player then knows what to repeat for the next time that they do that particular action. This can get them aroused and the player is then more motivated. This type of feedback is essential for beginners. An example of this would be if a basketball player performs a good jump shot and the coach tells them that it had good technique.

Negative Feedback-This is more than just picking out a weakness in the players game. It includes what the player should do to correct the fault. This feedback must be used carefully because it can easily demotivate the player, to a player who is well developed in their sport this type of feedback is vital to tune their techniques. E.g. a coach telling a basketball player that their lay-up is not correct but they should be placing the ball in the square.

VI. RECOMMENDATION

Based on the findings, it was recommended among other things that immediate feedback on level of skill acquisition by the prospective and unskilled cricket players would go a long way in inspiring them for better performance in cricket tournaments.

Coaches should focus not only on giving and discussing knowledge of results of their athletes' and teams' performances but also should give complete and accurate knowledge of results (KR) in relation to the goal set.

It is important to understand that when we give feedback to others we are contributing to our programme and that when we receive it we should think of it as something that can help us improve, rather than as personal criticism.

The knowledge of results should be of good quality (is specific non-redundant and should not be delayed). Practice trials (activities) should yield feedback in terms of performance information that is measurable and observable. Practice trials without feedback are wasted trials. Rules for using performance information and adjusting consequent self-set goals should be established by athletes, probably after instruction by the coach.

REFERENCES

- [1] Coker, C. A. (2009). Motor learning and control for practitioners (2nd ed.). Scottsdale, AZ: Holcomb Hathaway
- [2] R. A. Magill (2009). Motor learning: Concepts and applications (8th ed.). New York: McGraw-Hill.
- [3] G. Marios, Yannis T, Kostas, L. (2007) The Effect of External Versus Internal Types of Feedback and Goal Setting on Endurance Performance. In Athletic Insight, On line Journal of Sports Psychology. 9, (3)
- [4] H. Anshel, (1991) *Sports in Psychology: From theory to practice*. 1st edition, New South Wales, Australia: Gorsuch Scaris Drick Publishers.
- [5] J. Cheffers & Evaul, T. (1978) Introduction to Physical Education Concepts of Human movement. Englewood Cliffs New Jersey: Prentice Hall, Inc.
- [6] M. Erez, (1977). Feedback: A necessary condition for the goal setting – performance relationship”, in Journal of Applied Psychology, 62, 624-627.
- [7] Mouratidis, A. (2008): The motivating role of positive feedback in sport and physical education: Evidence for a motivational model. *Journal of Sport & Exercise Psychology*, 30 (2), p. 240
- [8] Shapiro, D. C. (1977). Knowledge of results and motor learning in preschool children. *Research Quarterly*, 48, 154-158.
- [9] Smoll, F. L (1972). Effects of precision of information feedback upon acquisition of a motor skill. *Research Quarterly*, 43,489-493.
- [10] Reeve, T. G., Dornier, L. A., y Weeks, D. J. (1990). Precision of knowledge of results: Consideration of the accuracy requirements imposed by the task. *Research Quarterly for Exercise and Sport*, 61, 284-290.