

EFFECTS OF MULTIMEDIA COMPUTER ASSISTED INSTRUCTION AND TRADITIONAL INSTRUCTION ON LEARNING DRIBBLING AND PASSING ABILITY OF SOCCER PLAYERS

J. JEYSON

Director of Physical Education,
T.D.M.N.S College, T.Kallikulam, Thoothukudi Dt., TN, India

Abstract:

To achieve the purpose of the study, seventy five students studying in St. Mark's Higher Secondary School Mookuperi, Nazareth, Tamilnadu were randomly selected as subjects. The age of the subjects ranged from 14 to 17 years. The subjects selected for this study were randomly divided into three experimental groups of twenty five in each. The experimental groups I, II and III were named as computer assisted instruction group, traditional instruction group and combined group respectively. All the subjects in the experimental groups (I, II and III) were given their respective training programme for 6 weeks duration. Dribbling and Passing are the essential fundamental skills in soccer. They play a vital role in the game situation and were selected as criterion variables for the study. Teachers cannot be eliminated from the teaching and the learning processes. The following variables were selected as independent variables for this study: Computer Assisted Instruction (CAI), Traditional Instruction and Combined Instruction. The design selected for this study was pre and post random group design. The data on dribbling and passing were collected by administering the Mor Christian General Soccer Test. The pre and post tests were conducted on the selected criterion variables prior to and immediately after the instruction programme. In both the cases the tests were administered on three consecutive days. The collected data from the two experimental groups prior to and immediately after the instruction period on the selected criterion variables were statistically analyzed with dependent "t" test to find out the significant improvement between pre and post-test means of the three experimental groups and the analysis of covariance (ANCOVA) was used to find out the significant difference between the three experimental groups. In all the cases 0.05 level of significance was fixed to test the hypothesis. The experimental groups namely the computer assisted instruction, the traditional instruction and the combined instruction have achieved significant improvement in dribbling, passing and kicking. Significant differences were found among the three experimental groups namely the computer assisted instruction, the traditional instruction and the combined instruction improvement in the selected criterion variables namely dribbling, passing and kicking. It was found that the improvement caused by the combined instruction group was better than the traditional instruction group and computer assisted instruction group.

KEYWORDS:

Dribbling, Passing, Soccer

INTRODUCTION

The present century is rightly technological due to the influence of advancements in the field of science and technology on the varied aspects of life, resulting in its modernization. The impact of scientific and technological advancements in learning is so great that it has given rise to a new discipline called

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Educational Technology. Today's learning is quite different from traditional learning. Similarly, the classroom practices in the coming century may be quite different from those of today. One can easily find out the explanation for these differences in the obvious impact of technological innovation and inventions. The shape of future school, colleges and universities is bound to change radically due to technological impact in the years to come. Technology has revolutionized coaching, training and learning systems. The influence can be felt in selecting suitable strategy and positions of players before and during the game.

Multimedia is a combination of text, graphic art, sound, animation and video delivered by computer and other electronic devices. It is a rich presented sensation. The ability of multimedia materials is to convey by picture, sound, animation, and movies. What is otherwise hard to express, to capture for reuse on any occasion. With the use of the computer by providing this information in a form, that can be engagingly interactive and easily recast by aspiring communicator is the explanation for the popularity and particularly long history of multimedia technology's role in education for many years. Computer assisted instruction is briefly known as CAI and is an interesting innovation in the education technology. A wide variety of CAI is available in part because so many sizes of computers are in the market. The traditional relationship between a teacher and a student is a tutorial one, as compared to two other forms of CAI and they are (a) simulation and (b) drill and practice. The response shown by a football player after seeing computer assisted instruction will be much more than involving in the regular teaching process.

In the traditional method of teaching the teacher delivers instruction, typically through lecture; the teacher models the skill, often on a black board or over-head projector or lab or playfield. The student is given practice work, usually in work books or as handouts or in playfield. The coaching community is encouraged to a new process and direction by eliminating the use of the ever - "ready position". The foundational so - called ready position" has become factored and programmed into our relaxed movement (Muscle memory) and most of the developing players have fallen victim to it and accept it because of its traditional and ongoing teaching. Among the youth the most popular game is football. Football is a passing and running game of an unpredictable and constantly changing pattern. Determining an awareness of the other players and the ability to make quick decisions and act upon them without delay. There are some games, which are predominantly game of technique and soccer is predominantly a game of judgments. The purpose of the study was to find out the effects of multimedia computer assisted instruction and traditional instruction on learning dribbling and passing ability of soccer players.

REVIEW OF LITERATURE

[Takabayashi et al \(1999\) produced computer-assisted instruction \(CAI\) software for bronchial asthma patients to assist in self-management and avoid asthmatic attacks and death. Results show that CAI is feasible for most patients, and through active self-learning CAI can improve motivation for self-management as well as supplement the physician's instructions.](#)

Bosseler et al (2003) developed and evaluated a computer-animated tutor, Baldi, to teach vocabulary and grammar for children with autism. Baldi was implemented in a Language Wizard/Player, which allows easy creation and presentation of a language lesson involving the association of pictures and spoken words. The research indicates that children with autism are capable of learning new language within an automated program centered around a computer-animated agent, multimedia, and active participation and can transfer and use the language in a natural, untrained environment.

Mohen et al (2003) report that mental preparation strategies namely relaxation and imagery along with field training improved agility, speed, strength, endurance and cricket playing ability among University level cricketers. Results showed that ability, self-efficacy, goal-setting, and goal commitment were predictors of performance at the various stages of the experiment. Personal goal setting was affected by level of ability, as well as by perceived self-efficacy and satisfaction. Self-efficacy and goal commitment were direct as well as indirect determinants of performance.

It is inferred from the above literature and from the results of the present study that systematically designed computer assisted instruction, traditional instruction and combined instruction develops the performance standard, as the selected dependent variables are very important qualities for better performance in almost all sports activities and scientifically designed computer assisted instruction, the traditional instruction and the combined instruction may be given in training programmes of all the disciplines in order to achieve maximum performance.

From the results of the present investigation, it is also concluded that a significant difference exists between three experimental groups in developing dependent variables dribbling and passing.

METHODS

To achieve the purpose of the study, seventy five students studying in St. Mark's Higher Secondary School Mookuperi, Nazareth, Tamilnadu were randomly selected as subjects. The age of the subjects

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ranged from 14 to 17 years. The subjects selected for this study were randomly divided into three experimental groups of twenty five in each. The experimental groups I, II and III were named as computer assisted instruction group, traditional instruction group and combined group respectively. All the subjects in the experimental groups (I, II and III) were given their respective training programme for 6 weeks duration. Passing the ball is a key part of modern association football. This brings an advantage and helps to secure the possession of the ball, particularly as the play is towards the opponent's goal. The skill of dribbling the ball is seen much less in modern football matches than in the first half of the twentieth century. The hallmark of passing in soccer is the passing of the ball between players of the same team including the forward pass. A dribble is one of the most difficult ball skills to master and one of the most useful attacking moves. In a typical game play, the players attempt to propel the ball towards their opponent's goal through individual control of the ball, such as by dribbling (running with the ball close to their feet). Dribbling creates space in tight situations in which the dribbler is marked (closely guarded by a defender), and the dribbler can either score or create scoring chances after a successful dribble. Dribbling and Passing are the essential fundamental skills in soccer. They play a vital role in the game situation and were selected as criterion variables for the study along with the performance variables.

CAI has proved to be a powerful tool for the teachers in the educational process and of course there is some change in the teacher's role. CAI directly interacts with the students individually and with the teachers. Teachers have to play their role in the CAI. Teachers cannot be eliminated from the teaching and the learning processes. Hence, the researcher has to use the following variables as independent variables for his study. They are as follows:

1. Computer Assisted Instruction (CAI)
2. Traditional Instruction
3. Combined Instruction

DATA COLLECTION

The design selected for this study was pre and post random group design. The data on dribbling and passing were collected by administrating the Mor Christian General Soccer Test. The pre and post tests were conducted on the selected criterion variables prior to and immediately after the instruction programme. In both the cases the tests were administered on three consecutive days. The collected data from the two experimental groups prior to and immediately after the instruction period on the selected criterion variables were statistically analyzed with dependent "t" test to find out the significant improvement between pre and post-test means of the three experimental groups and the analysis of covariance (ANCOVA) was used to find out the significant difference between the three experimental groups. In all the cases 0.05 level of significance was fixed to test the hypothesis.

ANALYSIS OF DATA

The data collected from pre-test and post-test experimentation was statistically examined for significant difference, if any, applying the analysis of co-variance (ANCOVA) at 0.05 level of significance. Table-I presents the summary of the mean on pre and post-test data for the experimental groups on independent variables Dribbling and Passing.

**Table-I
Summary of Mean for the Pre and Post Test Data on
Dribbling and Passing of Experimental**

Criterion Variable	Mean	Computer Assisted Instruction Group	Traditional Instruction Group	Combined Instruction Group
Dribbling	Pre Test	28.23	30.45	28.99
	Post Test	27.98	29.54	27.22
Passing	Pre Test	3.92	5.08	4.28
	Post Test	5.60	6.48	9.00

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Table II presents the results of the paired sample t-test on pre and post-test means of the dependent variables Dribbling and Passing.

Table-II
Paired sample t -Test for Pre and Post Test Means of Dribbling and Passing

Variable	Computer Assisted Instruction Group	Traditional Instruction Group	Combined Instruction Group
Dribbling	8.47*	9.41*	20.02*
Passing	11.23*	9.89*	28.01*

*Significance at .05 level

Table II shows that the dependent 't'-test values between the pre and post-test means of computer assisted instruction, traditional instruction and combined instruction groups are 8.47, 9.41, 20.02 respectively. Since the obtained 't'-test value of experimental groups are greater than the table value 2.09 with df 24 at 0.05 level of confidence, it is concluded that computer assisted instruction, traditional instruction and combined instruction groups had a significant improvement in dribbling. Table II also shows that the dependent 't'-test values between the pre and post-tests means of the computer assisted instruction, the traditional instruction and the combined instruction groups are 11.23, 9.89, 28.01. Since the obtained 't'-test value of the experimental groups are greater than the table value 2.06 with df 24 at 0.05 level of confidence, it is concluded that the computer assisted instruction, the traditional instruction and the combined instruction groups had a significant improvement in passing.

The analysis of covariance on Dribbling and Passing of computer assisted instruction group, traditional instruction group and combined group were presented in Table- III.

Table-III
The Analysis of Covariance on Criterion Variables of Experimental Groups

Criterion Variable	Adjusted Post Test Means			Source of Variance	Sum of Square	df	Means Square	F-ratio
	Computer Assisted Instruction Group	Traditional Instruction Group	Combined Instruction Group					
Dribbling	28.95	28.34	27.44	B	28.89	2	14.45	99.96*
				W	10.26	71	0.145	
Passing	5.66	6.15	9.08	B	157.83	2	78.91	227.11*
				W	24.67	71	0.35	

*Significant at 0.05 level confidence.
(The table value required for significance at 0.05 level with df 2 and 71 is 3.98)

From the table III, it is seen that the adjusted post-test mean values of dribbling for the computer assisted instruction, the traditional instruction and the combined instruction groups are 28.95, 28.34, and 27.44 respectively. The obtained F-ratio of 99.96 for adjusted post-test mean was more than the table value

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of 3.98 for df 2 and 71 required for significance at 0.05 level of confidence. The results of the study indicate that there is a significant difference among the adjusted post-test means of the computer assisted instruction, the traditional instruction and the combined instruction groups on the improvement in dribbling. To determine which of the paired means had a significant difference, the scheffe's test was applied as post hoc test and the results are presented in Table IV. From table III, the adjusted post-test mean values of passing for the computer assisted instruction, the traditional instruction and the combined instruction groups are 5.66, 6.15, and 9.08 respectively. The obtained F-ratio of 227.11 for adjusted post-test mean is more than the table value of 3.98 for df 2 and 71 required for significance at 0.05 level of confidence. The results of the study indicate that there is a significant difference among the adjusted post-test means of the computer assisted instruction, the traditional instruction and the combined instruction groups on passing. To determine which of the paired means had a significant difference, the scheffe's test was applied as post hoc test and the results are presented in Table V.

Table IV
Scheffe's post-hoc test for adjusted mean differences of Dribbling

Dribbling	Computer Assisted Instruction Group	Traditional Instruction Group	Combined Instruction Group	Mean Difference	Confidence Interval
	28.95	28.34	27.44	0.61*	0.07
	28.95		27.44	1.51*	
		28.34	27.44	0.91*	

*Significant at 0.05 level.

Table IV shows that the adjusted post-test mean difference on dribbling between the computer assisted instruction and the traditional instruction groups, the computer assisted instruction and the combined instruction groups, the traditional instruction and the combined instruction groups are, 0.61, 1.51, and 0.91 respectively. The values are greater than the confidence interval value 0.30, which shows a significant difference at 0.05 level of confidence.

It may be concluded from the results of the study that there is a significant difference in dribbling between the adjusted post-test means of the computer assisted instruction and the traditional instruction groups, the computer assisted instruction and the combined instruction groups, the traditional instruction and the combined instruction groups. However, the improvement in dribbling is significantly higher for the combined instruction group than the computer assisted instruction group and the traditional instruction groups. It may be concluded that the combined instruction group is better than the computer assisted instruction group and the traditional instruction group in dribbling.

Table V
Scheffe's post-hoc test for adjusted mean differences of Passing

Passing	Computer Assisted Instruction Group	Traditional Instruction Group	Combined Instruction Group	Mean Difference	Confidence Interval
	5.66	6.15		0.29*	0.47
	5.66		9.08	3.22*	
		6.15	9.08	2.93*	

*Significant at 0.05 level.

Table V shows that the adjusted post-test mean difference on passing between the computer

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assisted instruction and the traditional instruction and combined instruction, traditional instruction and the combined instruction are 0.29, 3.22 and 2.93 respectively. The values are greater than the confidence interval value 0.47, which show a significant difference at 0.05 level of confidence.

It may be concluded from the results of the study that there is a significant difference in passing between the adjusted post-test means of the computer assisted instruction and the traditional instruction, the computer assisted instruction and the combined instruction, the traditional instruction and the combined instruction groups. However, the improvement in passing is significantly higher for the combined instruction than the computer assisted instruction and the traditional instruction groups. It may be concluded that the combined instruction group is better than the computer assisted instruction and the traditional instruction in improving passing.

DISCUSSION ON FINDINGS

The result of the study indicates that the experimental groups namely the computer assisted instruction group and the traditional instruction group and the combined instruction had significantly improved the selected dependent variables namely dribbling and passing. It is also found that the improvement caused by the combined instruction group was better than the computer assisted instruction and the traditional instruction groups.

CONCLUSIONS

On the basis of findings of the study the following conclusions were drawn.

- 1.The experimental groups namely the computer assisted instruction, the traditional instruction and the combined instruction have achieved significant improvement in dribbling and passing.
- 2.Significant differences were found among the three experimental groups namely the computer assisted instruction, the traditional instruction and the combined instruction improvement in the selected criterion variables namely dribbling and passing.
- 3.It was found that the improvement caused by the combined instruction group was better than the traditional instruction group and computer assisted instruction group.

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