



Comparison Effect of Multimedia Computer Assisted Instructions and Traditional Instructions on Learning the Selected Skills of Tennis

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Abstract

The purpose of the study was to examine the effect of multimedia computer assisted instructions and traditional instructions in learning the selected skills of tennis. To achieve the purpose of this study twenty four male subjects from St.John's College of Physical Education, Veeravanallur, Tamilnadu, India were selected as subjects and their age ranged from 18 to 28 years. The subjects were randomly assigned to two equal groups of twelve each and named as computer assisted instructions group and traditional instructions group. Both groups underwent training for six weeks. The skill performance variables namely service ability and fore hand drive were selected. The data were collected from each subjects prior and after experimentation on the selected variables and were statistically analyzed by using dependent 't' test and analysis of covariance(ANCOVA). In all the cases to test the significance, 0.05 level of confidence was used. The result reveals that both the groups showed significant improvement on selected skill performance variables.

Keywords: Multimedia, Computer Assisted Instructions, Traditional Instructions.

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Introduction

In recent years, the rapid advancement of technology has created new interests and tools for use in the educational domain. Researchers have identified different instructional, sport and physical education-related technologies that can potentially enhance the effectiveness of teaching physical education (Roblyer & Doering, 2005).

Kretschmann (2010) described three kinds of sports-related software to use in teaching sports and physical education: 1) videos of the specific sport techniques and game tactics; 2) software for analysing game play (e.g., Simi Scout) or human movement (e.g., Simi Motion); and 3) commercial gaming software that can have a motivating effect in educational Process. Moreover, while the Internet provides easy access to knowledge about everything including scientific and non-scientific information, it also provides different platforms for easy and cheap communication with others (e.g., email, video conferencing, group discussion opportunities). Macdonald and Hay (2010) identified the use of the above-mentioned technologies in physical education in the context of four main purpose: 1) to facilitate the integration of movement principles with movement performances; 2) to generate information for

the application and evaluation of movement principles; 3) to develop formative assessment processes; 4) to acquire summative assessment evidence for movement performances.

In recent times, however, the computer has dominated the scene, and we are now at the point where these remarkable machines can do just about anything that all the previous things were not able to do. So if you have not had to go through the "learning curve" of old-fashioned and out-of-date technology, then you have a real advantage.

The use of multimedia system in the class rooms and training centers has received considerable impetus from the general trends toward individualization of learning and encouragement of student participation in learning process. Multimedia systems are also multisensory and thus stimulate learning as it takes place in the world outside the classroom. They include multimedia kits, modules, sound-slide combinations, motion film and video television etc. However, their use in teaching physical education and sport is influenced by many considerations even though their value is immense (Kamlesh M.L, 1994).

The potential benefits of Computer Assisted Instruction (CAI) cannot be underestimated in the contemporary world. There is a plethora of established findings on the instructional value of computer, particularly in advanced countries. There are now several CAI packages on different subjects. It is obvious that the

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current trend in research all over the world is the use of computer facilities and resources to enhance students' learning. This may be the reason why Chang, et al (2004) opined that "many exercises that depart from traditional method are now readily accessible on the web", even though teachers do not use these facilities. They further showed that the interactive approaches to lecturing significantly enhanced learning.

Hypotheses

1. It was hypothesized that there would be a significant improvement in the selected dependent variables due to the influence of traditional instructional methods.
2. It was hypothesized that there would be a significant improvement in the selected dependent variables due to the influence of multimedia computer assisted instructional methods.

Methodology

The purpose of the study was to examine the effect of multimedia computer assisted instructions and traditional instructions in learning the selected skills of tennis. To achieve the purpose of the study, twenty four male subjects from St.John's College of Physical Education, Veeravanallur, Tamilnadu, India were

selected as subjects and their age ranged from 18 to 28 years. The subjects were randomly assigned to two equal groups of twelve each and named as computer assisted instructions group and traditional instructions group. Both groups underwent training for six weeks. The selected skill performance variables namely service ability and fore hand drive were selected. The data were collected from each subjects prior and after experimentation on the selected variables and the data were statistically analyzed by using dependent 't' test and analysis of covariance (ANCOVA). In all the cases to test the significance, 0.05 level of confidence was used. The investigator reviewed the available scientific literature from books, Journals, periodicals, research, papers and magazines and also taking into consideration the feasibility criteria of availability of instrument, the following variables are relevant to the present study.

Selection of Variables and Test Items

As per the available literatures, the following standardized tests were used to collect the relevant data on the selected skill performance variables and they are presented in table I.

Table – I. Selection of Variables and Test Items

Variables	Test Items/ Instrument	Unit of Measurement
Service Ability	Hewitt Tennis Achievement Test	Numbers
Fore Hand Drive	Hewitt Tennis Achievement Test	Numbers

Results and Discussions

The data pertaining to the variables in this study were examined by using dependent 't' test to find out the significant improvement and analysis of covariance for each variables separately in order to determine the difference and tested 0.05 level of significance. The

analysis of dependent 't' test on data obtained for service ability and fore hand drive of the pre test and post test means of multimedia computer assisted instructions group and traditional instructions instruction group have been analyzed and presented in table II.

Table – II. Mean and Dependent 't' test of Traditional Instructions Group and Multimedia Computer Assisted Instructions Group on Selected Skill Performance Variables

Variables	Mean and 't' test	Multimedia Computer Assisted Instructions Group	Traditional Instructions Group
Service Ability	Pre test	8.50	8.167
	Post test	18.75	14.750
	't' test	19.559*	12.449*
Fore Hand Drive	Pre test	9.417	9.50
	Post test	19.917	15.50
	't' test	10.383*	6.573*

Significant level of confidence (11) 2.201

Since the obtained 't' values of both groups are greater than the table value, it is understood that the multimedia computer assisted instructions group and

traditional instructions group had significantly improved the service ability and fore hand drive. The analysis of covariance on the data obtained, service ability and fore

hand drive improved due to the effect of multimedia computer assisted instructions group and traditional instructions group and the results are presented in table

III.

Table – III. Analysis of Covariance of Traditional Instructions Group and Multimedia Computer Assisted Instructions Group on Service Ability and Fore Hand Drive

Variables	Adjusted Post Test Mean		Source of variance	Sum of square	Df	Mean square	'F' ratio
Service Ability	MCAIG	TIG	Between	85.536	1	85.536	30.368*
	18.644	14.856	Within	59.150	21	2.817	
Fore Hand Drive	19.935	15.482	Between	118.993	1	118.993	23.352*
			Within	107.010	21	5.096	

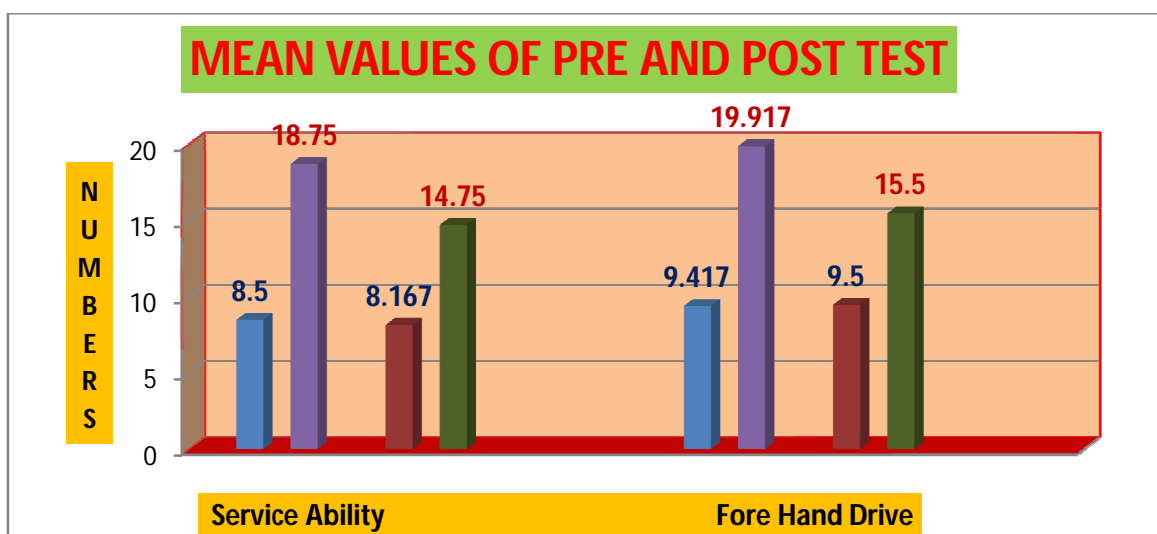
*Significant at 0.05 level of confidence (with df 1 and 21 is 4.32)

MCAIG -Multimedia Computer Assisted Instructions Group and
TIG- Traditional Instructions Group

Table-III shows that the adjusted post test mean values of the service ability and fore hand drive of multimedia computer assisted instructions group and traditional instructions group are 18.644, 14.856, 19.935 and 15.482 respectively. The obtained F-ratio values are 30.368 and 23.352 which is higher than the table value of 4.32 with df 1 and 21 required for significance at 0.05 level. Since the obtained value of 'F' is greater than the

table value, it indicates that there is a significant difference between the adjusted post test means of multimedia computer assisted instructions group and traditional instructions group in improving the elected skill performance variables namely service ability and fore hand drive.

Figure – I. Showing the mean values of multimedia computer assisted instructions group and traditional instructions group on selected variables.



Discussion on Findings

The results agree with the studies done by (Christmann, et al., (1997), Vernadakis, et al. (2003), McKethan (2001). The findings of the study are on par with the literature that relatively both multimedia computer assisted instructions and traditional instructions methods required to improve the selected skill performance variables namely service ability and fore hand drive tennis.

Discussion on Hypotheses

It was hypothesized that there would be a significant improvement in the selected dependent variables due to the influence of multimedia computer assisted instructions methods and traditional instructions methods. The findings of the study also produced the same results. So the hypotheses were accepted at 0.05 level of confidence.

Conclusions

Within the limitation of the present study, the following conclusions are drawn.

1. On the basis of the results obtained by statistically analyzing the data, it is concluded that there is a significant improvement found between the pre and post tests of selected subjects on service ability due to the influence of both multimedia computer assisted instructions methods and traditional instructions methods.
2. On the basis of results obtained by statistically

analyzing the data, it is concluded that there is a significant improvement found between the pre and post tests of selected subjects on fore hand drive due to the influence of both multimedia computer assisted instructions methods and traditional instructions methods

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