



The Effectiveness of an Interactive Computer Assisted Programme and Traditional Instructional Method in Teaching Hockey

Dharmendra Singh*

Assistant Professor (GF), Department of Physical Education university of Allahabad (U.P.).

ABSTRACT

The Purpose of this study was to compare the effect of Interactive Computer Assisted Programme and Traditional Instructional Method in Teaching Hockey skills of male hockey players. For this study forty five male hockey players from University of Allahabad were selected by using purposive sampling technique between the age group of 18 to 28 years. Subjects were further divided into two experimental groups (Interactive Computer Assisted Programme and Traditional Instructional Method) and one control group of fifteen subjects in each group. Teaching schedule of eight weeks of Interactive Computer Assisted Programme and Traditional Instructional Method was prepared which was followed by the experimental groups on alternate days (three days a week). Harbans Singh Field Hockey Test (1982) was used to collect pre and post test data which was further compared by the application of ANCOVA and LSD post hoc test. It was concluded that both teaching programme has similar potential to develop different skills of male Hockey Players.

KEYWORDS : Interactive Computer Assisted Programme, Traditional Instructional Method.

INTRODUCTION:

There are many types of teaching and training methods used in the field of physical education and sports like Lecture method, demonstration method, imitation method, whole part method, part method, lecture cum demonstration method etc. sports seems to involve basic human development and exercise for their primary focus of evaluation, rather than physical attributes of the contestants as in the latter (although "presentation" or "presee" also be judged in both activities). Modern research has broadened scientific knowledge and revealed the interdisciplinary nature of the sciences. For today's students, this advance translates to learning a more diverse range of concepts, usually in less time, and without supporting resources. Students can benefit from technology-enhanced learning supplements that unify concepts and are delivered on demand over the internet. Such supplements, like imaging informatics databases, serve as innovative references for sports information, but could improve their interaction interfaces to support learning. With information from these digital datasets, multimedia learning tools can be designed to transform learning into an active process where students can visualize relationships over time, interact with dynamic content, and immediately test their knowledge. The technology should contribute to social development of a nation. Technology brings about changes in attributes, values and life styles of people. Technology has been used more and more for material gain, acquisition, consumption and consumerism. It promotes scientific, social and economic development of a nation. In recent years, numerous computers assisted learning programmes based on new teaching methods like the principles of cognitive apprenticeship and problem based learning, have euphorically been developed for various fields. However, many of these programmes failed due to low acceptance, economic inefficiency, or most seriously, problems with the implementation and evaluation in curricula. Computers are changing the way of doing our day to day activities, from paying our bills to programming our home entertainment systems. Obviously computer technology is revolutionizing instruction in ways that promise to improve the quality and efficiency of physical education. It is providing a challenging learning opportunity for physical educators as well. Since much of physical education involves the visual transfer of both concepts and procedures from the instructor to the student, it makes sense that using computer technology to enhance conventional teaching techniques with materials that include clear, informative images and real-time demonstrations melding sound and animation to deliver to the student in the classroom material which complements textbooks, 35 mm slides, and the lecture format. It has to go long way to catch the world standard and in order to catch the world standard; there should be proper planning and implementation of the programme. And the implemented programme should be evaluated from time to time so that the best result can be attained. To move in the above direction there should be continuous research on the players.

Methodology:

For the present study 45 males hockey players selected from university of Allahabad. Subjects were selected by using purposive sampling technique between the age group of 18 to 28 years. Prior to the administration of pre-test, a meeting with all subjects was held. Purpose of the study along with the various testing procedures and teaching programme was explained to subjects in detail so that they could fully grasp the importance of all features and should suffer not from any confusion regarding the hard work they will have to put in. All subjects motivated to put in every ounce of their energy in the experiment in order to promote scientific investigation in general and also to enhance their knowledge and skill. After pre test of various skill of Harbans Singh Hockey Skill Test, subjects were further divided into two experimental groups (Interactive Computer Assisted Programme and Traditional Instructional Method) and one control group of fifteen subjects in each group. The Computer Assisted Instruction Group received teaching components through computer programmes such as video shows, clippings, and so forth for Dribbling, Hitting and Shooting Hockey skills for 20 minutes duration followed by 40 minutes self practice in the play ground. Traditional Instruction Group received a 20 minutes lecture/ demonstration covering the same instructional content followed by 40 minutes self practice in the play ground of hockey skills. The duration of the experiment lasted for eight weeks and the number of sessions per week was confined to three alternative days, in addition to the regular academic programme as per the curriculum. Data collected with the help of suitable tool were analysed with the help of ANCOVA and LSD post hoc to compare the effect of Interactive Computer Assisted Programme and Traditional Instructional Method of experimental and control group. Both the components of Harbans Singh Hockey Skill Test (1982) i.e. dribbling and hitting, and dribbling and shooting was used tool for this study.

Results and Discussion:

Table -1

ANCOVA of Interactive Computer Assisted Programme and Traditional Instructional Method on Dribbling and Hitting Ability of Male Hockey Players

Source of variability	Df	SS	MS	F-Ratio
Between groups	2	183.35	91.67	4.64*
Within the groups	42	821.51	19.55	
Total	44	1004.86		

df1= 2; df2=42; f=3.22; p= 0.05

Table 1, indicate that there is significant difference exist between different training groups as calculated F-ratio of 4.64 is greater than required tabulated F-value i.e.3.22 at 0.05 level of significance. Further to know the actual difference due to training among different training methods post hoc test was applied.

LSD post hoc test of Interactive Computer Assisted Programme and Traditional Instructional Method on Dribbling and Hitting Ability of Male Hockey Players

Adjusted Means of Interactive Computer Assisted Programme	Adjusted Mean of Traditional Instruction Method of	Adjusted Mean of Control Group	Mean Difference	Critical Difference
1.04	1.22		0.13*	0.11
1.04		1.23	0.19*	
	1.22	1.23	0.06	

Above table show that there is significant difference among Interactive Computer Assisted Programme and Traditional Instruction Method as well as between computer assisted programme and control group as mean difference of both of them are more the required critical difference i.e. 0.11. No significant difference was found between Traditional Instruction Method and control group as their mean difference is much lesser than critical difference at 0.05 level of significance.

Table -2
ANCOVA of Interactive Computer Assisted Programme and Traditional Instructional Method on Dribbling and Shooting Ability of Male Hockey Players

Source of variability	Df	SS	MS	F-Ratio
Between groups	2	92.05	46.02	3.62*
Within the groups	42	521.01	12.71	
Total	44	613.06		

df1= 2; df2=42; f=3.22; p= 0.05

Table 2, indicate that there is significant difference exist between different training groups as calculated F-ratio of 3.62 is greater than required tabulated F-value i.e.3.22 at 0.05 level of significance. Further to know the actual difference due to training among different training methods post hoc test was applied.

LSD post hoc test of Interactive Computer Assisted Programme and Traditional Instructional Method on Dribbling and Shooting Ability of Male Hockey Players

Adjusted Means of Interactive Computer Assisted Programme	Adjusted Mean of Traditional Instruction Method of	Adjusted Mean of Control Group	Mean Difference	Critical Difference
1.09	1.25		0.16*	0.13
1.09		1.30	0.21*	
	1.25	1.30	0.05	

Above table show that there is significant difference among Interactive Computer Assisted Programme and Traditional Instruction Method as well as between computer assisted programme and control

group as mean difference of both of them are more the required critical difference i.e. 0.13. No significant difference was found between Traditional Instruction Method and control group as their mean difference is much lesser than critical difference at 0.05 level of significance.

DISCUSSION:

The statistical results confirmed that there was a significant improvement due to the effect Of Computer Assisted Instruction and Traditional Instruction on dribbling and hitting ability of male hockey players. It is concluded that Computer Assisted Instruction and Traditional Instruction had significant effect on dribbling and shooting ability of male hockey player. The study determined by Louise Fincher et al., (1996) recommended the need of software for athletic training, coaching and rehabilitation. According to Michael (2009), the multimedia learning and the i-pod coaching approach to learning, have had positive impacts on the sports education domain and on increasing learning and understanding in a sports context. Wilkinson et al.,(1999) proved that the multimedia approach to volleyball coaching through compact disc (CD) significantly improved cognitive and psychomotor skills of high school girls. Wong (2011) concluded that the development of E-Sports courseware triggered positive effects on the triple jump performance and psychomotor skills learning of the subjects. From the above literatures and the results of the present study, it is clearly understood that Computer Assisted Instruction, and (CAI) Traditional Instruction (TI) had produced significant development on the acquisition of hockey skills and performance of the subjects participated in the study.

REFERENCES

- Alexis, Leon., and Mathews, Leon. (1999). Introduction to Computer. Chennai: Leon Press. | Gold, R.S. (1991). Microcomputer Applications in Health Education. Dubuque, IA: William C. Brown Publishers. | Hair, J.F., Anderson, R.E., Tatham, R.L., and Black, W.C. (1998). Multivariate Data Analysis. (5th edn.). London:Prentice- Hall. | Joseph E. Donnelly. (1987). Using Micro Computers in Physical Education and the Sports Sciences. Champaign, Illinois: Human Kinetic Publishers. | Pradeep, K. Sinha and Priti, Sinha. (2003). Computer Fundamentals. New Delhi: BPB Publications. | Schacter, J. (2001). The Impact of Education Technology on Student Achievement: What the Most Current Research has to Say. Santa Monica, CA: Milken Exchange on Education Technology. | Steinberg, E.R. (1991). Computer-Assisted Instruction: A Synthesis of Theory, Practice and Technology. Hillsdale, NJ: Lawrence Erlbaum. | Wengilinsky, H. (1998). "Does it Compute? The Relationship between Educational Technology and Student Achievement in Mathematics". Educational Testing Service Policy Information Report. Educational Testing Service, Princeton, New Jersey. | Dario, Liebermann G., et al. (2002). Experienced Coaches' Attitudes toward Science and Technology. International Journal of Computer Science in Sports. 4:1, 21. | David A. Rogers, Glenn, Regehr, Thomas R. Howdieshell, Karen A. Yeh., Ellen, Palm. (2000). the Impact of External Feedback on Computer-Assisted Learning for Surgical Technical Skill Training. The American Journal of Surgery, 179,(4), 341-343. | Din, F.S. (1996). Computer-Assisted Instruction, Students' Off- Task Behavior and their Achievement. Education and Treatment of Children, 19:2, 170-182. | Erdner, R.A., Guy, R.F., and Bush, A. (1998). The Impact of a Year of Computer Assisted Instruction on the Development of First Grade Learning Skills. Journal of Educational Computing Research, 18:4, 369-386. | Fincher L.A., and Wright, K.E. (1996). Use of Computer-Based Instruction in Athletic Training Education. Journal of Athletic Training, 31, 44-49. |