

## A CASE STUDY OF COMPUTER AIDED INSTRUCTION IN A TEAM HANDBALL CLASS IN JAPAN

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**KEY WORDS:** computer aided instruction, physical education, handball

**INTRODUCTION:** There is general agreement on how physical education (PE) programs can be improved: classes need to be taught by more qualified instructors or teachers, and students need to spend more class time being physical active. PE programs should more positively promote a computer-assisted instruction (CAI) to make use of an information society. We assume that to take the advantage of visual materials through CAI will be helpful to inexperienced teachers in teaching PE programs on the regular curriculum. So the purpose of this study was to inquire the availability of practical effectiveness for teaching team handball in PE class at junior high school through CAI.

### **METHODS:**

#### 1. Consideration of effective use of CAI

There is three way of computer utilization to physical education. Simulation tactics motivation for study by database to play movie repeatedly. In this study, I think looking movie more effective for a beginner .so I developed CAI program of team handball to play movie repeatedly.

#### 2. Development CAI program of team handball

Contents of developed CAI program are Model pass and model shots A model steps A model tactics in a group A model goalkeeper.

I consideration for get rid of difference in quantity of information between notebook and CAI, for anybody operates easily.

#### 3. Carry out CAI to a team handball class

First-year Students at junior high school participated in a 5-week (twice a week) program of PE class. And they (N=78) were divided into the two kinds, the control groups and the experimental ones. The control groups run training programs with only a notebook for various skills and techniques of handball used in specified time of team meeting. On the other hand, the experimental group carried out the programs both through CAI and with a notebook at the same time.

#### 4. Conclusions from questionnaire and game

The questionnaire related to the changes of impressions of PE class was conducted after these programs. Moreover student's movement patterns videotaped in each game were analyzed in terms of the total number of goal scores, shootings, jumping shots, fouls, violations, and combination plays.

**RESULTS: Content of Class.** There is much difference between control groups and experimental one in the answer for question5 "Can you make use of team meeting for training and game? " Control groups are about 30% greater than experimental one as for student answered "yes". And experimental groups are about 25% greater than control one as for student answered "I don't know". It is supposed that control groups are more substantial team meeting than experimental one and many student control groups think about team meeting is substantial and make use of team meeting for training and game. On the other hand many student experimental groups think about team meeting is not substantial and not make use of team meeting for training and game. Introduce CAI to class reduce time and prevent student from talking each other. There is a possibility that CAI obstruct team meeting. This guess is supported by the answer for question6" Is teaching materials make use of team meeting?" 90% student of Control groups answered "Yes" but student of experimental one 70%. This result show that use only a notebook bring effective team meeting.

Question9'Give me your impression of the teaching materials". Experimental groups favorable impression 90% the other hand control groups negative impression 86%.

To give an example student's impression "CAI is easy to understand ", "A note book is hard to understand". It is supposed that CAI program to play handball movie repeatedly influence on proper image handball.

Question10"Do you want to make use of same teaching materials?" and question11"Do you want to study handball class again?" Experimental group answered "yes" 20 greater than control one. And 30 of student control group answered "no". A notebook materials could not bring student to motive for interest and improvement.

**Improvement of Skill and Techniques.** Question16 " What grade do you get on the skill at handball?" Contrary to my expectation control gropes is 10% greater than experimental one. It is supposed that experimental gropes graded themselves severely because of they could compare own play with model. But, control groups graded themselves irresponsible because of they couldn't compare own play with model. This results show that CAI played an important part in proper image. Programs with only a notebook more effective than programs both through CAI and with a notebook in team meeting. But programs both through CAI and with a notebook made a good impression on student.

CAI got more raise a desire for playing handball. Notebook is little effective get a proper image. Techniques of handball didn't show remarkable differences between the two groups. But CAI provides proper image to student, so experimental groups showed a tendency to strict analyze themselves. To introduce computer into PE class is effective side, but there are fear that neglect team meeting. It is necessary for us to grope for the effective use of notebook with computer. If it was computer introduce to PE class, class improves more substantial.

**CONCLUSIONS:**

1. There isn't much difference between the control groups and the experimental ones in improvement of techniques
2. CAI is effective in proper handball image as teaching materials

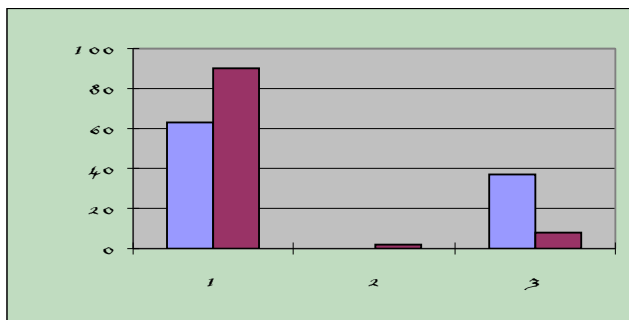


Figure 1 - Q1"Can you make use of team meeting for training and games?".

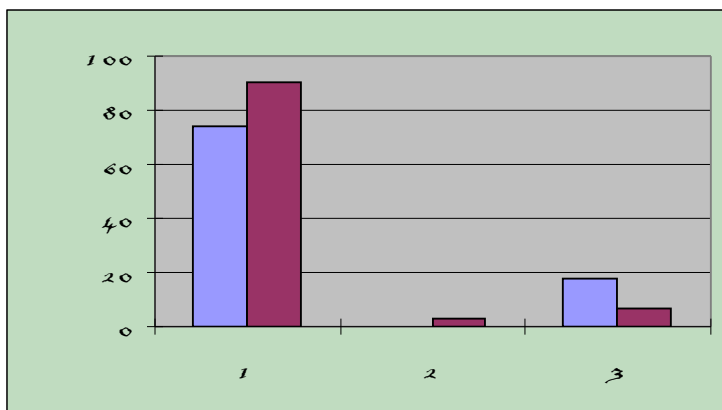


Figure 2 - Q2 "Is teaching materials make use of team meeting?"

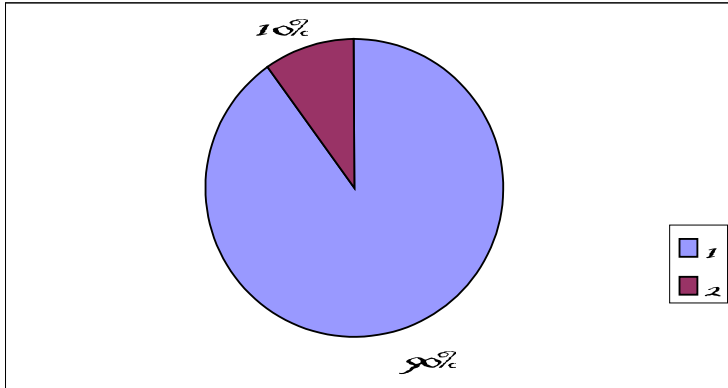


Figure 3 - Q3 "Give me impression of the teaching materials?" (experimental group).

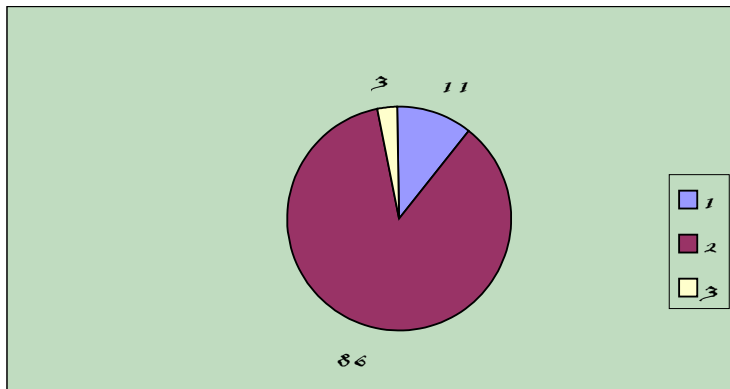


Figure 4 - Q3 "Give me impression of the teaching materials?"

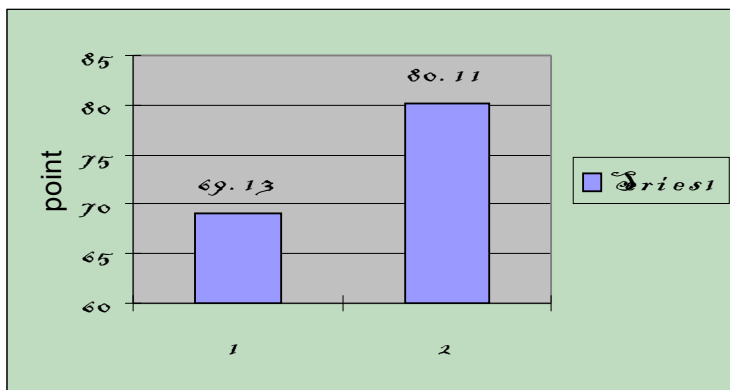


Figure 5 - Q4 "What grade do you get on the skill at team handball?"