A CASE STUDY OF CAI TO A SPRINT RUNNING CLASS OF JUNIOR HIGH SCHOOL IN JAPAN

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INTRODUCTION: Education using computer has advanced rapidly at schools around the world.
In Japanese classroom, there will be one computer for each student. Learning with the computer has spread to many subjects, however, so far, there have been few practical uses for learning with computers in the field of physical education. And also, as one of new mediums computers are gaining recognition in physical education class.
The purpose of this study is to determine CAI's validity of improving "running time " in physical education class of Junior high school.

METHODS: Two hundred and fourteen students of Asahi junior high school in Japan were participated in this study. Each subject performed 100m sprint running and was measured his running time by using a mobile computer with the software ;"Run Taroh Watch" (Fig.1).In this study, software named "Run Taroh Watch" was newly developed with a personal computer (PC-9821Xa13,NEC). This software has both the function of stop watch and the function of velocity curve graph for each subject involving a data base. And also running time of 50m, 100m, 200m, 400m, 800m, 1500m, and 3000m distance will be able to measure easily with this software.

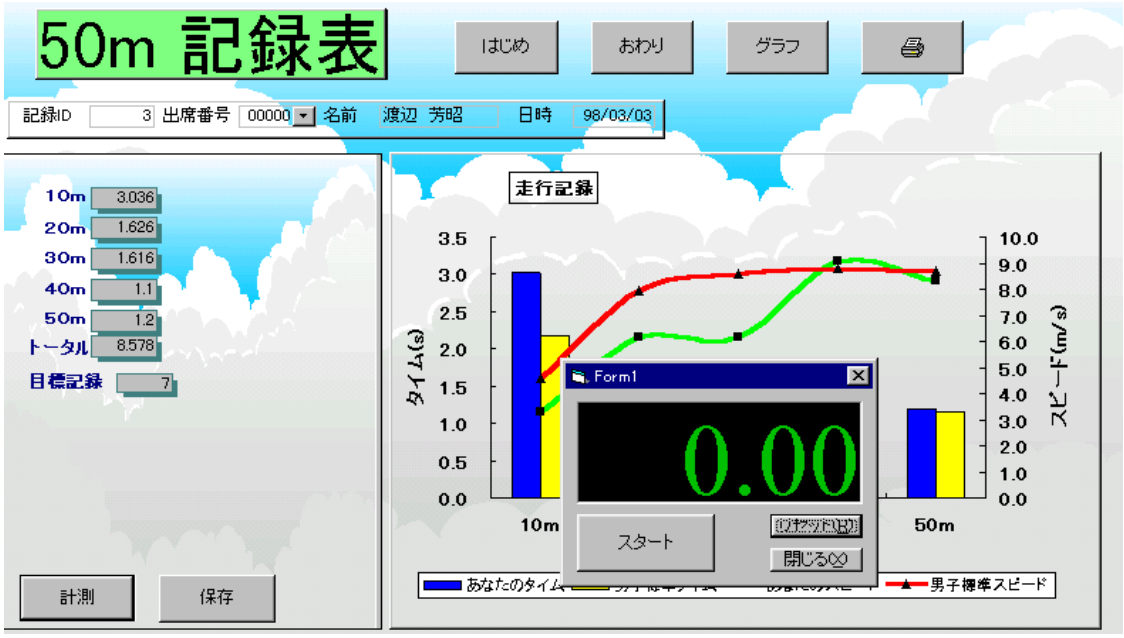

Figure 1 - Start window "Run Taroh Watch".

A questionnaire to each subject was undertaken at the end of 100m sprint running class.

RESULTS AND DISCUSSIONS: Sprint running time was improved with CAI to physical education class of junior high school. (Table.1) As a result of the questionnaire in this study, almost students answered that 100m sprint running class was pleasant. (Fig.2)
It is the reason why they can visualize the change of the running speed through 100m

distance by their own eyes immediately just after each 100m run. (Fig.3)

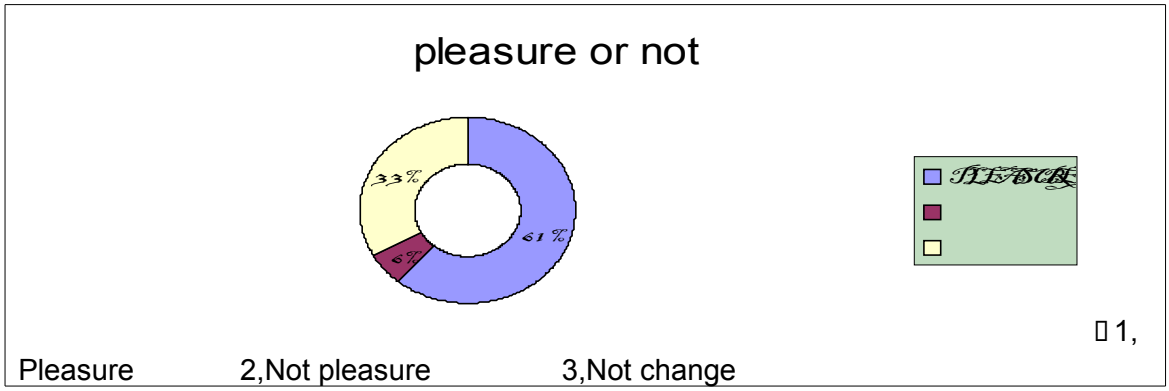

Figure 2 - Pleasure percentage to 100m sprint running class with a mobile computer.

Table 1 100m sprint running time for male students (n=108)

		May		June		
		M	SD	M	SD	Differences
Section time	0-10	2.241	0.175	2.446	0.224	-0.205*
	10-20	1.598	0.147	1.446	0.160	0.152*
	20-30	1.514	0.157	1.427	0.166	0.087*
	30-40	1.481	0.168	1.441	0.183	0.040*
	40-50	1.496	0.167	1.470	0.168	0.026*
	50-60	1.497	0.171	1.443	0.161	0.054*
	60-70	1.528	0.182	1.474	0.167	0.054*
	70-80	1.545	0.190	1.507	0.191	0.038*
	80-90	1.559	0.205	1.511	0.223	0.048*
	90-100	1.512	0.261	1.510	0.237	0.002
	Record	15.971	1.707	15.676	1.638	0.295*

*p <.01, n = 108

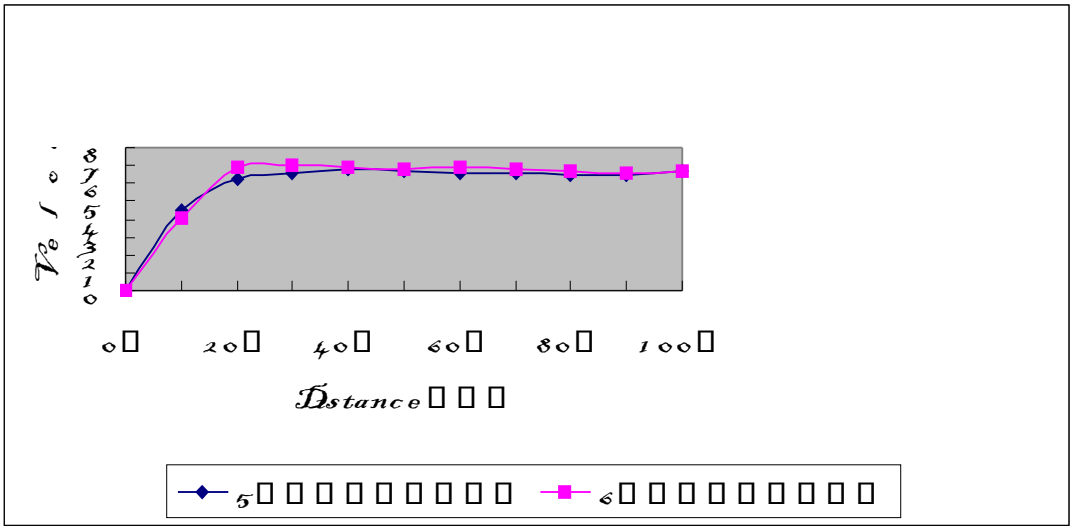

Figure 3 - Velocity curve graph of 100m sprint running by a mobile computer with "Run Taroh Watch".

CONCLUSIONS: In conclusion, it is suggested that CAI to a sprint running class with a mobile computer might have the possibility not only to improve “running time” more efficiently but also to arouse students interest in running itself by themselves.

REFERENCES:

Din, S. Feng. (1996) Computer-Assisted-Instruction, students-of-task behavior and their achievement. *Education and Treatment of Children,* **19**(2), 170-182.

Mohnsen, Bonnie, & Thompson, C. (1994-1995) Teaching biomechanics through interactive laserdiscs. *Computing Teacher,* December/January, 30-32.

Watanabe, Yoshiaki., M. Fujiwara, N., Yasuda, & Yamamoto, H. (1997) A case study of CAI to junior gymnastics class in Japan. *Proceedings of XV International Symposium on Biomechanics in Sports*, Texas U.S.A , pp157-161.