

Chapter 8

The “Edutab Box”: A Computer–Supported Collaborative Learning System — Practical Activities and Future Directions

Tatsuro Furuya

*Elementary School Attached to the University of
Yamanashi, Japan*

Kazutaka Mizukoshi

Digital Alliance Co., Ltd., Japan

Yoshiaki Mizuochi

Joetsu University of Education, Japan

Yuto Omae

Nihon University, Japan

Takayuki Oshima

Joetsu University of Education, Japan

Norihisa Sakakibara

Joetsu University of Education, Japan

Hiroataka Takahashi

Nagaoka University of Technology, Japan

Kazuhiro Yatsushiro

Yamanashi Prefectural University, Japan

ABSTRACT

Collaborative/active learning is a notably effective educational method. Since tablet terminals are now being widely used in the educational field, it is being possible to use tablet terminals for collaborative/active learning. To do this, a computer-supported collaborative learning (CSCL) system and software is required. The authors report on the development of CSCL system/software called the “Edutab box.” The authors also report on three practical activities/research studies involving the use of the “Edutab box” in regular public elementary school classrooms in Japan, in three contexts: 1) debate practice, 2) creating social studies class reports, and 3) lesson study (a re-reflection of class observation). As a future direction, the authors propose an “intelligent Edutab,” which is an extension of the “Edutab box.” The development of the prototype—and of practical activities/research studies using the prototype—is reported.

DOI: 10.4018/978-1-7998-1400-9.ch008

INTRODUCTION

Attempts to use Information and Communication Technologies (ICT) in the field of education have been in progress since the 1980s, when Personal Computer (PC) usage began to spread. Initially, the use of applications such as Logo (Stahl et al., 2014) was mainstreamed using a stand-alone desktop PC. In the 1990s, the Computer-Supported Collaborative Learning (CSCL) system was also developed as a system designed to support collaborative/active learning (Stahl et al., 2014). But there are few in regular public schools.

To introduce CSCL system in regular public schools, there are at least three issues:

1. The system is expensive,
2. The system only works in a computer (PC) room, and
3. There are teachers who are not good at ICT.

The “Edutab system” that the authors are developing is a system that can solve the above issues.

First, the “Edutab box”—which is the basic component of the “Edutab system”—is implemented using the Raspberry Pi (Raspberry Pi, 2019), shown in Figure 1. Raspberry Pi is widespread throughout the world and can be purchased cheaply and easily. And the developed “Edutab system” is integrated into a micro SD card. Therefore, it can be used simply by inserting a micro SD card into the Raspberry Pi and turning on the power.

Second, the “Edutab box” provides an autonomous Wi-Fi network without any extra devices. Since the “Edutab box” has a functional wireless access point, the authors don’t need to construct a new network in the classroom. In addition, since the system is built by using Web technology, the Web server in the “Edutab box” is accessed from the browser of a tablet terminal or a smartphone. Therefore, it is possible to freely lay out the arrangement of desks, regardless of the place of use—such as a classroom or library room.

Figure 1. Picture of the “Edutab box”



24 more pages are available in the full version of this document, which may be purchased using the "Add to Cart" button on the publisher's webpage:

www.igi-global.com/chapter/the-edutab-box/239644

Related Content

Effects of Computer-Based Training in Computer Hardware Servicing on Students' Academic Performance

Rex Perez Bringula, John Vincent T. Canseco, Patricia Louise J. Durolofo, Lance Christian A. Villanueva and Gabriel M. Caraos (2022). *International Journal of Technology-Enabled Student Support Services* (pp. 1-13).

www.irma-international.org/article/effects-of-computer-based-training-in-computer-hardware-servicing-on-students-academic-performance/317410

Effect of Computer Assisted Instructional Package on Students' Learning Outcomes in Basic Science

Simeon O. Olajide and Francisca O. Aladejana (2019). *International Journal of Technology-Enabled Student Support Services* (pp. 1-15).

www.irma-international.org/article/effect-of-computer-assisted-instructional-package-on-students-learning-outcomes-in-basic-science/236071

The Promotion of Self-Regulated Learning Through Peer Feedback in Initial Teacher Education

Elena Cano García and Laura Pons-Seguí (2020). *International Journal of Technology-Enabled Student Support Services* (pp. 1-20).

www.irma-international.org/article/the-promotion-of-self-regulated-learning-through-peer-feedback-in-initial-teacher-education/255119

A Systematic Review of Game Designs and Outcomes of Serious Games Targeting Different Groups in Language Learning

Yukun Hou (2023). *International Journal of Technology-Enhanced Education* (pp. 1-19).

www.irma-international.org/article/a-systematic-review-of-game-designs-and-outcomes-of-serious-games-targeting-different-groups-in-language-learning/323454

Correlation of University Lecturer Leadership Styles, Students Satisfaction, and Learning Outcomes During the COVID-19 Pandemic

Wenwen Cao (2022). *International Journal of Technology-Enhanced Education* (pp. 1-17).

www.irma-international.org/article/correlation-of-university-lecturer-leadership-styles-students-satisfaction-and-learning-outcomes-during-the-covid-19-pandemic/308468