

Toward a Seamless Learning Environment

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Abstract

A new plan and a design concept to develop an e-Learning environment using Squeak is proposed. The following key points for motivation design are described: Flexibility between learners and teachers, and portability for field environment.

1. Introduction

Education and learning environment should be the most important key issue for the next generation society. Traditional education methods face many problems. New education technologies and methodologies that use the internet and computers (commonly called “e-Learning”) are thought to be most hopeful for solving such problems. However, suitable designs for e-Learning education environments have not yet been established.

We propose a new education environment design from the following viewpoints of learning motivation mechanism: What causes motivation? When does motivation occur? How can we encourage motivation?

2. Hypotheses

2.1 Hypothesis 1: Learning = Teaching

The strongest learning method is teaching others. Usual learning environments are designed with a rigid structure between learners and teachers. They cannot move from their side to the other side in such rigid environments. We should create a flexible environment through which anyone can teach others using his/her knowledge and his/her own method.

2.2 Hypothesis 2: Good Learning = Good Timing

Learning is most effective when it is done at the time interest is piqued or at the time an idea arises. The

Japanese say that good ideas always arise in the bathroom, on the road, and just before falling asleep. We should create a learning environment that can be used in the field; in other words, a learning environment that can always be carried around.

3. Concept of Seamless Learning Environment

The following concepts for a seamless learning environment have developed from these hypotheses.

(1) Virtual classroom in which multiple people can participate from remote locations live, in real time to experience cooperative learning.

(2) All participants can work jointly to freely edit and customize the text and materials.

(3) Enable it to work on PDAs and cell phones in addition to PCs. (Development of a virtual machine that can be used independently of computer type.)

(4) New methods of stable communication control that would allow many people to participate at once. (Development of a server or Peer-to-Peer mechanism that allows multiple people to connect.)

4. Challenges to the Project

In order to realize the above concepts, an implementation method that uses Squeak and Squeak-based software (Swiki, Nebraska, and Croquet) seems very hopeful.

We are starting our development of an e-Learning system using Squeak. Our goal is the development of a cooperative learning environment that is freely customizable by any user him/herself and that is portable.

5. Summary

A plan to develop a new e-Learning environment that uses Squeak is described. Through the promotion of this plan, we would like to contribute to a cooperative relationship with the open source community of Squeak.