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Research Subject	Support System for Cooperative Software Development Exercise		
Keywords	Software Development, Engineer Training, Educational Support, e-Learning		

Department of Information Science Saga University aims to educate software engineers with the most advanced technology by providing a new curriculum and JABEE course from 2003. In the research, I aim to construct an environment for effective education and instruction in a cooperative software development exercise, by integrating cooperative development tools and internet technology for supporting eXtreme Programming. Concretely I plan to realize following facilities.

- Documentation of requirements and specifications, and relating them with member information each other.
- Automatic management of tasks related to requirements and specifications using a version management system, a configuration tool and a unit testing framework.
- Instruction support by browsing progress information of each member and group on Web, which shared among project members.

This research provides a mechanism for effective instruction of the latest topics in software development technology. We can educate a lot of software engineers having the latest knowledge and contribute to improvement of knowledge level of whole software engineers. For our students, of course, the opportunity for advanced education increases. And the mechanism will be more significant, if it becomes public.

There are several studies which support software engineering exercise using usual e-Learning systems. As compared with them, this research aims to provide an environment for learning a certain development process systematically. This approach is rather similar to project management systems. But it is different from usual project management system, because its target is education.

Department	Faculty of Science and Engineering	Name	Mika Ohtsuki
Research Subject	TA Robot System for Foreign Language Education Using 3D Virtual Space		
Keywords	3D Virtual Space, Foreign Language Education, Educational Support, e-Learning		

I and my co-researchers have tried a foreign language education using 3D virtual space chat system. In the trial, we thought it is necessary to support lecture itself and promote students to learn by themselves after the lecture time. Therefore we proposed a TA (Teaching Assistant) robot system which assists foreign language conversation both in lecture and after-lecture time. It will support a lecture, because an educator can set a realistic situation by placing several robots in a virtual space. For example, he/she can set a store or a counter of a public office with several tutor robots talking typically for the situation, a nice substitute for role-playing activity. It will also promote the use of the

For the purpose of proper use of the TA robots, we adopt programs called as “chatter bots” making a reply based on pattern match. We examined several chatter bots, and design / implemented Chatter Bots Mediator which converts protocols between chat servers and chatter bots. We also added the system a facilities for processing behavior information in a 3D virtual space. As the first prototype system used Alice as a TA robot because Alice was multilingual and expandable. And the prototype system used Sony Communication Place Bureau, which is a 3D virtual space chat server used in the study. Now we are trying to support Japanese language, other chat systems, and so on.

How to use a 3D virtual space for education is important and has possibilities. You can use the TA robot system for placing robots which can do a typical conversation in a 3D virtual space. In a lecture, effective learning is expected because the virtual space and robots provide a more realistic situation. Students can exercise sentences again and again after their lecture. It promotes students to stay always, and to make a society of students. The society may help its member by changing information. The CBM are highly adaptable, and it can be adapted which any programs which can support students using conversation.