Building Learner and Teacher Autonomy for New Learning Environments
Leena Subra, University of Jyvaskyla, Finland; Liisa Kallio, University of Jyvaskyla, Finland; Ulla Lautiainen, University of Jyvaskyla, Finland

The poster reports on the experiences of our departmental action research project aiming to explore the use of ICT-enhanced methods in promoting both learner and teacher autonomy/self-directedness in discipline-based language learning and instruction. The action research approach involves continuous staff development, needs identification and aims-setting, teacher and learner self-assessment, learner training, and development of a variety of learning tasks suitable for self-directed learning in both authentic and virtual learning environments. It also involves an attempt of creating a set of ICT-enhanced course formats which - without significant, time-consuming and technically demanding modifications - could be used in teaching and learning languages. The poster describes pilot courses which use different approaches, materials and programmes, and are aimed at different kinds of learners. They cover a variety of possibilities and combinations but remain within the same pedagogical framework, since learner and teacher autonomy are the basic guidelines in all the pilot courses.

Development of a Computer Aided Cooperative Classroom Environment
Akira Suganuma, Kyushu University, Japan; Ryunosuke Fujimoto, Kyushu University, Japan; Yutaka Tsutsumi, Kumamoto Gakuuen University, Japan

In the educational domain, a popularization of computers and the Internet enable us to hold lectures using Web contents as a teaching material. We propose CACCE, Computer Aided Cooperative Classroom Environment, which is an WWW-based supporting system for a classroom teaching. CACCE consists of a server-software and a client-software, that is to say, a teacher's browser and a student's browser. These browsers are connected together by a socket connection, sends and receives some messages such as a URL and the CACCE's command. There are three main features of CACCE. First, CACCE automatically refreshes student's browsers. Secondly, CACCE displays a cooperated mark and text on these browsers. Finally, student's browsers automatically report an URL of page shown by them to teacher's browser. This information is used as one of the guidelines for teaching. It is concluded that CACCE is not only a tool that broadcasts the document on a teacher's browser to students, but also a cooperative environment.

Using Knowledge Models in Intelligent Tutoring Systems
Stephen G. Taylor, Champlain Regional College, Canada

The Virtual Tutee system will be introduced as a prototype of an intelligent tutoring system. The user of this system adopts the role of the tutor and studies photosynthesis by tutoring a virtual tutee residing within the software. The system was produced as a simulation based on a model of the tutoring learning situation called the Knowledge Modelling Approach, which will also be introduced. Fifty college students participated in a test of the system.

An Evaluation of Interactive Studio Physics I
Holly Traver, Rensselaer Polytechnic Institute, USA; Michael Kalsher, Rensselaer Polytechnic Institute, USA; Karen Cummings, Rensselaer Polytechnic Institute, USA; Keith Hmielecki, Rensselaer Polytechnic Institute, USA

Rensselaer Polytechnic Institute has implemented an innovative physics course ("Studio Physics") that promotes collaborative interaction. Students work in groups of 2-4 on computers connected to the local network and Internet. Class time is spent on short lecture and group exercises. This research study evaluated Studio Physics in terms of grades and alumni responses. An examination of course grades from students who took the first courses of Studio Physics yielded no significant difference between traditional lecture and studio courses. However, as the studio course has evolved, learning has improved. Alumni were contacted and asked for their opinions on all types of courses, including studio. Alumni indicated working collaboratively with others helped them to improve communication, interpersonal, and computer skills, as well as the abilities to work with others, learn new material, and perform at their current job. This finding is important for work organizations, since much of work today is group-based.

Grasp of Few body element's correlative operation using Multi points measure data- Compair with 2 kind selection-
Atsushi Tsubokura, Osaka Electro-Communiation Univ., Japan; Kiyoshi Masui, Osaka Electro-Communiation Univ., Japan; Noboru Ashida, Osaka Electro-Communiation Univ., Japan; Kagemasa Kozuki, Konami Co., Japan; Katsuhide Tsuchida, Osaka Electro-Communiation Univ., Japan

Expert Operator has any skill for machine operation.But novice has a little skill.The novice do and error operate when try new operation skill.Our target is to trace the Operator's skill learning process and the task identify for the skill learned.The newer operation skill based another already learned operation skill.These Operator's skill was changing during Try Operating.The changed operation can show operation timing and used skill for operation. We used few body's measure data and identify his operation using symbolic way.Measure