

# DIEL Demo

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## ABSTRACT

In this demo, we would like to show how cooperative learning features have been added to the Moodle LMS, creating a virtual environment called DIEL.

## Categories and Subject Descriptors

[K.3.1 \[Computer uses in Education\]: Collaborative Learning, Distance Learning](#)

## General Terms

Experimentation, Human Factors.

## Keywords

Collaborative Learning, Moodle, Open Source Software, social translucence

## 1. A SHORT INTRODUCTION TO DIEL

The demo shows a technological infrastructure which has been developed as an extension to a popular, free-open source software, Moodle [1], in order to support the creation of a “dynamical learning space”. In a dynamical learning space, either in presence or in remote settings, teachers and students cooperate in the creation of shared knowledge, building meanings and concepts where each individual has own importance inside the learning process. Teachers coordinate interactions, steering the learning community towards an educational goal.

A new metaphor has been introduced inside Moodle, that of a virtual classroom, where interactions are welcomed and eased, and community services are provided. In a virtual classroom individuals are free to move and interact, find contents and insert opinions, without a fixed interaction stereotype. Each user is aware of what other users are doing: such community awareness represents an instance of the social translucence concept [3]. Every user is associated to an avatar, which moves inside a web page; logical proximity of activities maps into physical avatars proximity.

The organization of a learning activity inside DIEL becomes much like the exploration of a virtual set of “rooms”, each of them dedicated to a specific learning activity. Moodle resources appear as objects inside the room, and moving from room to room is achieved by traversing doors. When planning a “learning path” for the class, the teacher naturally maps materials and activities into a corresponding path. Number,

purpose and content of each room are defined by the teacher, while the learners are let free to explore them.

Out software can be applied in pure e-learning environments, or as support tool in blended teaching [2]. It automatically tracks all activities performed by students, this way avoiding tedious logging, and allowing teachers to concentrate on the learning process.

## 2. OBJECTIVES AND TARGETS

Moodle has widely shown its potential as support for several courses, mostly at university level. Experiences with the use of Moodle have been undertaken in many other settings, including vocational training (working students, qualification of teachers). Some experiences have been reported of the use of Moodle in high school settings, and ever with younger students, but it seems that both the use by schoolteachers, and the favor of younger students, are far from the success obtained at university level.

This could be due, to a larger extent, to the interface, which is extremely simple, text based and linear, organized along topics or by dates, possibly being not so much attractive to younger generations. Typically, teenagers are used to much more sophisticated settings, like video-games, and should be encouraged by finding inside DIEL a similar environment when fetching educational material. Instant messaging is also extremely popular among teenagers, who are used to finding peers on-line, and starting interacting by short text messages.

We believe that by introducing a much more enjoyable interface, the initial barrier between teenagers and learning environments could be reduced. Of course, it is up to the teacher to “populate” the environment with suitable materials and activities, in order to meet the intended learning objective.

Figures 1 and 2 below show the two possible interfaces, a 2D virtual environment and a 3D virtual environment. The teacher may freely set the environment to either type of interface, keeping the same structure and topology of the virtual set of rooms.

## 3. THE EXPECTED AUDIENCE

The ideal setting for experiencing with DIEL is one, where teaching is already organized as an active, collective process, with group activities and projects. To this respect, teachers may exploit the usual Moodle resources, like forums and wikis, to support individual and collective communications. DIEL could be used inside a lab, with one computer per user

simultaneously logged in, or supporting autonomous study activities, each student logging from home during the evening.

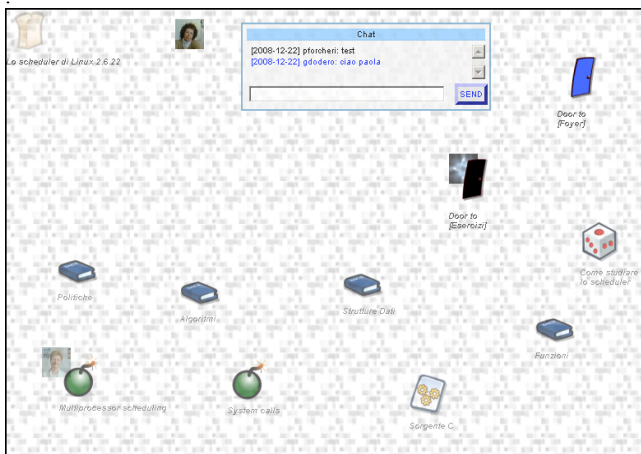


Figure 1. 2D interface to DIEL

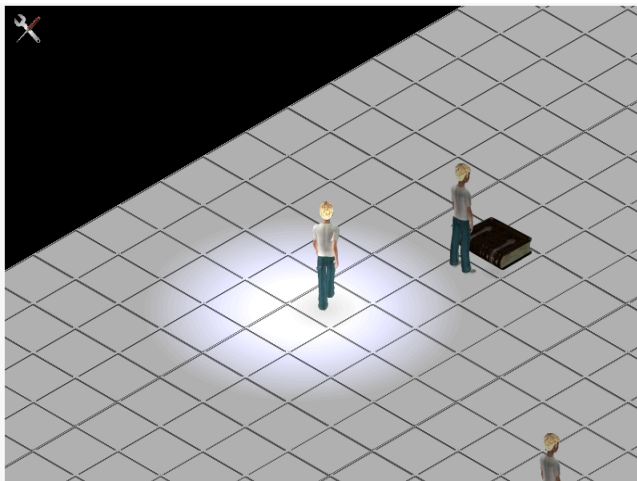


Figure 2. 3D interface to DIEL

The most enjoyable setting is however that of synchronous and distributed cooperation on a common topic, with or without the presence of the teacher. DIEL provides additional features, that is a collective whiteboard shared among participants, private textual chats among groups of users, and global (available to everyone, as opposed to private) text, audio, or video chats among all online participants.

Teachers and students who already experience this modality of interaction, for example chat on MSN, share documents on GoogleDocuments etc. will find that DIEL is capable of supporting these kinds of interactions in a simple and safe

environment. Such teachers are precisely those whose opinions we are looking for, in order to improve the features of DIEL through the widest possible range of user experiences. We would like to collect teachers' opinions on the suitability of this tool as supporting new ways of interaction, which would make the time and place of study closer to the attitudes of today's students in high school, and at the university.

The flexibility of the organization of a learning path in DIEL can also encourage learning by games, like treasure hunts, maze exploration etc. There is no limit to the imagination that the teacher may exploit in organizing the virtual classroom.

In this demo we will show existing short courses already organized on the DIEL server of the CASE group, at the Free University of Bolzano. Among them a "contest" can start to perform a treasure hunt, which has the purpose also to demonstrate the features of the environment.

Then, participants will be encouraged to design the organization of a short course and upload the teaching materials, working as superusers.

#### 4. TECHNICAL INFRASTRUCTURE

The DIEL server is accessed by a browser, preferably Mozilla, and requires no installation of software on the client machine. Due to the amount of required bandwidth, which is indispensable to gather the real time interaction experience, especially if the 3D interface is used, a fast connection is mandatory.

Participants may use for example their own laptops in a wireless setting of sufficient speed, or better, with ethernet cable connections.

#### 5. REFERENCES

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