Hybrid dialog: Dialogic learning in large lecture classes

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Hybrid Dialog:
Dialogic Learning in Large Lecture Classes

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ABSTRACT

Attendance at classical lectures usually leads to rather poor learning success. A wide variety of studies show that while lectures are as effective as any other method for transmitting information, they are inferior in many other dimensions. Lectures are not as effective as discussion methods in promoting thought and they are ineffective at teaching behavioral skills and subject-related values as well as at awakening interest in a subject. Still ex-cathedra teaching is a favored way to cope with a high student-to-teacher ratio. To solve this conflict between organizational and pedagogical requirements, a group of researchers at the Institute of Teacher Education at the University of Zurich has developed a hybrid course setting using an online learning platform. Their setting incorporates a dialog among students within a large lecture class. Furthermore a feedback loop enables the lecturer to continuously adjust the content of the lecture to the learning process of the students. In this article, the authors first present the structure of this setting and then illustrate how to implement it by the web-based open source learning management system OLAT (Online Learning and Training). Based on their research, they focus on key components for the success of their hybrid dialog. They show how individual and group learning can be fostered with corresponding assignments, assessments, and assigned roles such as moderators. Thus, the authors will define their position that the challenge of a large lecture class can be met while successfully implementing social learning and process-oriented assessments of academic achievement.

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INTRODUCTION

Lecturing still is the most common teaching method in colleges and universities globally (Bligh, 2001, p. 3). The vital role of lectures in academic teaching originates in the ancient Greek academy. Throughout the Middle Ages, the lecture remained the most important academic teaching method until today (McLeish, 1976, pp. 252–254), although it has repeatedly been criticized for being just an oral reproduction of written text (Apel, 1999, pp. 22–30).

Since the 1950s, not only the written word can be reproduced easily, but also the spoken one: In less than hundred years, radio, television, video, as well as computerized multimedia technology (on stationary as well as mobile terminals) became widely available. These developments have lead to traditional lecture being criticized as never before—and with good reason. Today, many faculty and educational researchers are experimenting with streaming lectures, with replacing or supplementing lectures by online tutorials, and so on (e.g. c.f. Brecht & Ogilby, 2008; Glass & Sue, 2008; Guertin, Bodek, Zappe, & Heeyoung, 2007; Spickard, Alrajeh, Cordray, & Gigante, 2002). We are observing these experiments and their outcomes with great interest.

Our research, however, focuses primarily on another aspect. We find that academic teaching often relies too much on the transmittal of information. While transmitting information to students is absolutely necessary for their acquiring knowledge, there is also a range of other learning dimensions which are equally important. For example, we would like students to think independently about subject matter, to acquire values associated with it, and to solve subject related problems. In other words, just knowing facts is not enough to be an expert in a specific subject. And while lectures are good for transmitting information, they are not appropriate for aiming at learning dimensions like independent thinking, value acquisition or problem solving (see section “Background”).

Hence, we have developed a hybrid didactic scenario, which aims at learning dimensions beyond acquiring knowledge—without renouncing the benefits of lectures in transmitting information. In the following, we are delivering some empirical background to corroborate our approach (section “Background”) and explain the didactic scenario, based on a short introduction to the theory of dialogic learning (“Part I: Hybrid Dialog—a didactic setting to implement a feedback loop in large lecture classes”). Then we explain how to implement our didactic scenario using the LMS OLAT (“Part II: Implementing a dialogical setting using the LMS OLAT”). The last part of our chapter focuses on fostering dialogic online learning (“Part III: “Practical Implications”).

BACKGROUND

During the 20th century, a lot of comparisons between different academic teaching methods have been undertaken. While more than a few of them didn’t show any significant results, some trends still can be discerned. They can be summed up to the following three basic propositions (cf. the meta-analyses in Bligh, 2001, pp. 3–20):

1. Lectures appear as effective in transmitting information as other methods.
2. Lectures are less appropriate than discussions when aiming at promoting student thought and the acquisition of procedural knowledge.
3. Lectures are not qualified to change student attitudes and value systems.

Concerning 1): In 298 studies, no significant differences showed up between the declarative knowledge students acquired through the following teaching methods: Lectures, discussions, reading and independent study, inquiry (e.g. projects), and others, mostly audio, TV, computer-assisted
learning (Bligh, 2001, pp. 4–8). The meta-analysis of Dubin and Taveggia (1968) came to almost the same conclusion.

That all methods seem equally effective doesn’t mean that information only has to be delivered by lectures—on the contrary, from a didactic perspective, applying a variety of methods seems more promising (Meyer & Paradies, 1993). But lectures being the most cost-effective method, cost-benefit considerations speak for their use. Considering the high student to teacher ratios many colleges and universities are faced with today, lectures are the method of choice to cover many students by few teachers.

If studying was only about acquiring declarative knowledge, a dominance of lectures would be a bit repetitive, but not a really noteworthy problem. But as already noted in our introduction, there are other important educational objectives like independent thinking, value acquisition or problem solving.

Concerning 2): Bligh (2001, pp. 8–12) analyzed 73 studies comparing the effect of different methods in promoting (independent) student thinking. His meta-analysis shows two clear tendencies: None of the analyzed methods is more ineffective in promoting student thinking than lectures, and the most effective method are discussions. A study by Bloom (1953, p. 166) documents the different potentials of lectures and discussions to activate student thinking. It shows that lectures prompt significantly more thoughts on the level of simple understanding (p < .01), but that discussions stimulate significantly more thoughts concerning problem solving or synthesizing (p < .01).

These results can easily be explained when taking into account the results of transfer research: Mental operations can only be learned through active thinking. Hence, subject-specific thinking skills can best be acquired by analyzing and solving concrete subject-specific problems and by associated metacognitive activities (Steiner, 2001, pp. 195–203). And as shown above, these types of mental activities are not promoted by listening to a lecture. In contrast, the frequent changes of speakers and perspectives taking place in discussions are more likely to provoke the analyzing and solving of problems—and first of all, they commit participants to think about the subject at hand and to take up their own position.

These arguments also explain the results of Bligh’s (2001, pp. 18–19) meta-analysis concerning procedural knowledge: Compared to lectures, most notably the practice of the focused skills is essentially more effective.

Concerning 3): Compared to discussions and the category “other methods” lectures also cause students less to acquire new or different values or to modify their attitudes (Bligh, 2001, pp. 12–18). This can be justified by the same reasons as given for the acquisition of procedural knowledge: Students develop value systems, interests or social behavior by acting themselves and not by following the mental activities of others.

If the educational objectives of a lecture go beyond the mere acquisition of declarative knowledge and involve students developing subject matter related values, social behavior or procedural knowledge, the method of traditional lecturing does not lead to the desired results. But for economic reasons, lectures can’t be simply discarded. Rather, they have to be enhanced by additional methods in order to cover the mentioned objectives. And in this regard, following the research presented above, discussions seem to be most promising.

HYBRID DIALOG: A DIDACTIC SETTING TO IMPLEMENT A FEEDBACK LOOP IN LARGE LECTURE CLASSES

In lectures with high numbers of participants, hundreds of students meet once a week for one or two hours. In their time together, these students are doing nothing but listening to the lecturer and taking notes. The attitude they take is passive and
receptive. That is not to say lectures don’t cause students to think, but the provoked thinking mode is mostly reactive, as pointed out in the background section. Furthermore, it seemed to us a waste of potential not to involve the students more actively in the lecture. As a consequence, we searched for a way to enable students to discuss the subject matter presented in our lectures.

Therefore, we have developed a dialogic setting using web technology, which allows students to participate in a dialog about the topics of the lectures (Eberle & Keller, 2003; Ruf & Weber, 2005; Zimmermann, Hurtado, Berther, & Winter, 2008). We successfully implemented this hybrid dialog in an academic lecture for teacher training. This setting aims at multiple goals, the most important of which are:

• Tapping the full potential of social learning by engaging all students in a multidirectional dialog with other students and with the lecturer. Thus the lecture should be more effective in promoting thought and building values concerning the subject matter as well as awakening an interest in it.

• Unburdening the lecturer from the responsibility for the individual learning outcomes and distributing the teaching/learning ratio more equally between lecturer and students.

• Creating a feedback loop between the audience and the lecturer, enabling him to continuously adjust the lecture to the learning development of the students.

Using new media to teach, we have to consider that the benefit of a medium depends on its use by people. No pencil writes on its own, and no book is read by itself. Accordingly, a didactic benefit can only be offered by electronic media if they are in the service of consistent didactic arrangements. Therein, the technologies have to fulfill their clearly defined tasks (Ruf, Frei, & Zimmermann, 2003, p. 192). Or to cut a long story short, we followed the maxim “tools follow concept”. (Zimmermann & Haab, 2005, p. 17). Earlier media research has tried for a long time to directly compare the efficacy of different media (e.g. film vs. written text). Meta-analyses with large numbers of such studies produced no winner in this competition (cf. Cohen, Ebeling, & Kulik, 1981). This is because, as Clark (1983, pp. 453–454) already pointed out, we do not really analyze the effects of media but of treatments, i.e. learning arrangements. So the results of so-called media comparisons are about arrangements used, not about media.

In this light, we hold it important to give a short theoretical explanation of the dialogic learning (Ruf & Gallin, 2003), which was the main source for our scenario.

In the dialogic learning, teaching and learning are oriented on the basic pattern of human dialog: During the generation of knowledge, the discussion partners alternately take the role of the speaker and the listener. Simultaneously, the partners guard the smooth processing of the dialog and they continuously take stock of it. Most essential is the permanent change of perspectives that everyone involved is forced to take upon each change of speakers. There are three basic perspectives that constitute a dialogic learning process:

• The perspective of the speaker who is teaching and learning, who lays out the things how he sees them by producing and instructing his view: I see it and I do it this way!

• The perspective of the listener, who follows the speaker by adapting and reconstructing his remarks, queries and tries to incorporate the speaker’s view into his own intellectual horizon: How do you see it and how do you do it?

• Likewise, speakers and listeners take up a third perspective: the view from outside upon the course of the dialog from which
emerges a common view of things, a sense of cohesiveness: We all see it this way and that’s how we do it. Thus, subject related norms can be derived from the course of the dialog and help to establish the declarative and procedural knowledge that are validated by the academic and/or professional community.

Dialogic Learning transfers essential parts of the knowledge generating dialog in the medium of literality. Thus, it allows for a deeply reflected exchange between a potentially large number of persons. A further promising effect of this approach lies in the fact that newly acquired knowledge is better associated to the previous knowledge, be it declarative or procedural (concerning the essential role of linking new with previous knowledge, cf. Steiner, 2001, pp. 172–173).

In the following, we describe in detail the procedure of our hybrid dialog setting by pointing out the chronological sequence: A) through E) constitute one phase (refer to Figure 1 for an overview).

General Framework

Approximately 200 students attend the type of lecture class in which we successfully implemented our hybrid dialog setting. The students attending the large lecture class need to sign up for a learning group of about 14 members. Each group is facilitated by a moderator. The moderator moderates the online communication but also attends the lecture class as a regular or advanced student. Instructions for the use of the LMS OLAT are given out via email to the students by the assistant of the lecturer. These instructions are necessary in order to make online discussions efficient and to keep the course structure of the LMS as clear as possible. Additionally the students are introduced to three basic rules (netiquette) that guarantee a benevolent online communication: Contributions addressed to another group member ought to be i) task-oriented and specific, ii) constructive and quality-oriented, and iii) personal statements.

A. The workflow starts off with a traditional class held by the lecturer (approx. 90 minutes, the usual length of lectures in the German-speaking area). According to the topic taught an assignment is given at the end of the lecture. It consists of an initial assignment and a feedback assignment: These assignments have to be done by every student in order to meet the requirements for academic achievement (see B and C). The very first assignment is an “introductory assignment”, which links the mutual introduction of the students in each learning group with their personal attitudes towards the subject matter.

B. Half of the group members work on the initial assignment. They publish their contributions according to this assignment within 48 hours after the lecture in the file dialog on the LMS. In terms of OLAT the element “file dialog” has already been set for each group by the course manager of the LMS (assistant of the lecturer). Each file dialog
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is only accessible to the students assigned to the respective group (see Part II).

C. The other half of the learning group responds to the work done by their fellow students by reflecting and commenting their opinions and arguments according to the feedback assignment given to them. This happens within 72 hours after the lecture and is done in the same file dialog on the LMS as described under B) and creates an exchange in written form between the members of the same learning group. Since the students contribute in writing to the online discussion they are forced to get involved more intensively with the opinions and reasoning of the fellow students. The tasks of writing the contribution and commenting on a contribution alternate within the group from phase to phase with each assignment: Who first published a contribution as an initial assignment will then in the next phase comment on the contributions of the other half of the learning group as a feedback assignment and vice versa. The participation in the online discussion is required in correspondence with the performance record (see also discussion about assessment/ECTS in part III)

D. Within 96 hours following the lecture the moderator summarizes the online discussion by citing the best statements and also considers a new perspective to the discussion. This summary of the contributions is provided to the study group by the moderator as a file in a separate folder in OLAT. In addition the file is passed on to the assistant of the lecturer. The assistant concentrates the summaries he received from every group into a final summary and hands it over to the lecturer. This way the lecturer gets informed about the contents of the discussions which took place online: The lecturer learns which issues arose, what was well understood, and what needs clarification.

E. Last step of D) allows the lecturer to incorporate students’ contributions in the following lecture class. At the beginning of each class the lecturer refers to the online discussions on the topics of the past lecture and clarifies issues that have emerged in the discussion. It is also possible to invite students to present their best practice example or controversial contributions in front of class. Due to this feedback stage the attending students are activated in their learning process by associating new contents with foreknowledge, and the lecturer can build upon the actual skill level of the students since he or she gains insight into students’ learning processes.

This workflow A) through E) lasts one week and constitutes one phase (it is also possible to customize the duration of the phases; e.g., we have begun to integrate a two week phase twice a semester in order to relieve the time pressure somewhat). With the beginning of a new phase a new initial and feedback assignment is given out to the learning groups. The workflow is repeated continuously and guarantees an effective hybrid dialog.

Our lecture classes are continuously evaluated by two questionnaires, one at the beginning and one at the end of the term. In our case, these are comprehensive surveys which serve the purpose of our research. But also if no educational research is carried out, we recommend conducting a little survey. This enables the lecturers and their assistants to spot potential for improvement of the scenario and to carry out adjustments at relatively short notice.

IMPLEMENTING A DIALOGICAL SETTING USING THE LMS OLAT

The general requirements of our scenario regarding the technical features of an LMS are quite low. Hybrid dialogs do not depend on specific
technical features except for the possibility of asynchronous text-based communication. In smaller classes one can implement a similar scenario to the one described here with a simple discussion forum. However, to implement such a scenario in large lecture classes with several hundreds of students, a powerful, modular LMS allowing customized course environments is needed. Of special importance are the possibility to divide the students into learning groups and a course element allowing the discussion of uploaded files.

The learning environment described in the preceding chapters is realized by using OLAT (Online Learning and Training), an open source, cross-platform LMS solution. Of course, our scenario could also be implemented using other powerful LMSes such as Moodle, Blackboard or Sakai—as long as they provide the necessary features displayed in the following section.

**Features of OLAT**

OLAT allows any kind of online learning with very little didactic restrictions. This is achieved by letting the user choose between different elements such as forums, wikis or tests while creating an individual course environment. Thanks to this fully modular approach the course authors can create their tailor-made learning environment with virtually no restrictions, whatever their didactic scenario may be.

The following course elements are currently available in the OLAT course editor (elements marked with * are necessary to implement our course):

- CP learning content* (IMS Content Packages)
- SCORM learning content
- Single page* (with integrated WYSIWYG HTML editor)
- External page
- Wiki
- Forum*
- File dialog* (discussion of uploaded files)
- Folder* (up- and download of files)
- Assessment* (shows results of assessments to learners)
- Task (with drop box, sample solution and scores)
- Test (with scores; IMS QTI standard)
- Self-test (anonymous and no scores; IMS QTI standard)
- Questionnaire* (IMS QTI standard)
- Enrollment* (learners enroll for learning groups)
- Contact form*
- Structure* (grouping of elements)

We will not discuss the capabilities of the elements listed above in depth here. For further information and the features of OLAT in general, see http://www.olat.org. Nevertheless there is a remark to be made regarding some course elements, concerning particularly wikis, questionnaires and tests. They are all typically used to create content by a group of users. Because OLAT is designed in a modular way, course elements one already worked with in an older course can be recycled within a new environment. For example, if one creates a Wiki accompanying a lecture one semester, it can be reused in the following semester in a new course environment without losing the content created by the students a half year ago. Thus user created content can grow over the years. It is even possible to embed one of those elements in multiple course environments at the same time and let users work simultaneously on it.

**Technical Implementation of the Didactic Scenario**

The following description of the actual implementation of our didactic scenario is based on OLAT. Nevertheless we try to look at these technical matters from a more generic point of view that provides hints to recreate a course environment
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similar to our own using any common LMS software. That said, some rather self-explaining details in the configuration of OLAT will intentionally not be discussed here. The following explanations all relate to Figure 2. It shows a screenshot of the course’s navigation column as seen by a course manager with all elements folded out (with the exception that it displays only one study group).

The main organizational layer of the course consists of the three areas public area, study group area and moderator area. They determine the visibility of the course elements towards the three different user types: The course managers (lecturer and assistant), the moderators and the students. We created right groups these user types are related to. Right groups allow us to easily adjust the amount of rights (read, write etc.) a group of users has concerning each single element. Thanks to the “enrollment” element (1) the users can choose which study group they want to be in—and by doing so they are automatically added to the appropriate right group. As the users just see the enrollment element in the beginning, they are forced to choose a study group before being able to use the course. Thus, the students are divided into learning groups without the need for the administrators to allocate them.

Because the purpose of the public area lies primarily in providing the students with various course-related information, students have read-only access for some parts of this area. For example, the students can download assignments uploaded by the lecturer himself under (2) (see “A” in the circle graphic in part I), and documents such as handouts or guides under (3). In these two elements, only the course managers are allowed to upload or change documents. If there is need for technical support, the participants are invited to post their questions publicly in the forum “technical tips” (6), thus fellow students can benefit from

Figure 2. Navigation column, as seen by a course manager
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the answers given by the course managers. The forum “café” (5) allows a two-way communication as well: On the one hand the course managers can quickly provide news to the students, and on the other hand the students get the opportunity to let their feedback be known by the course managers.

The study group area is the place where most of the learning activities within the course environment happen. It is visible only to the members of the respective study group, again using right groups. All steps between B and D in the circle graphic (Figure 1) in part I happen here. At the start of the semester all students have to write a text following an assignment designed particularly to introduce the participants to each other in the forum “introduction of group members” (8). This allows them to discover the possibilities of OLAT in the beginning within a single forum without being overwhelmed by a host of different elements.

Following this initial contact with the LMS software and their fellow group members, the main part of the learning process for the students happens in the structure “contributions/feedbacks” (9). After receiving an assignment (see letter A in the circle graphic), one half of the learning group proceeds by writing their contributions (letter B). The writing happens offline, the resulting texts are uploaded hereafter in form of rich-text files (RTF) to the corresponding file dialog of the current phase. For a screenshot of the actual file dialog element see Figure 3. There, the students are allowed to upload files, but not to delete or change anything. Only one’s own feedbacks in the forums may be edited. In general, only moderators and course managers have the right to alter and delete files here. A specialty of the file dialog element is its hybrid nature—one can upload files, just like in the folder element, but each file gets an independent forum attached that has the same possibilities as the regular forum element. This allows the other half of the study group to post their feedbacks during the online group exchange (letter C) directly to the contribution they are referring to. The fact that a fully-fledged forum is attached to each file and not just one discussion thread allows multifaceted discussions with different topics and main feedbacks about one contribution that remain well-arranged nevertheless.

Near the end of the semester the students all have to complete a “final assignment” (13). It is the counterpart of the “introduction of group members”—the students have to analyze their own learning progress fostered by the lecture and the online discussion in a text they post in the forum. Finally the study group area contains all summaries by the group moderators (see letter D), collected in a folder the moderators directly upload their work to (11). Similar to the forum “café” (5) where topics of common interest are discussed, each study group area includes a forum (14) for the treatment of group-internal matters such as didactic subjects not related with an assignment or organizational questions to the moderator.

The smallest part of the platform is the moderators’ area. It is designed to improve the training of the group moderators. It mostly contains elements that we already used in a similar context within the other course areas, such as folders containing assignments to the moderators (16) or file dialogs where the moderators post their contributions following our assignments and discuss them by writing feedbacks (17). The “forum for moderators” applies one element only used here. The E-Learning Center of the University of Zurich allowed us to use an extensive, modular self-learning unit dealing with e-moderation they have developed. We integrated the modules relevant to the situation of our e-moderators using the OLAT-element CP learning content (CP=Content Package) (15), since the self-learning unit was provided to us as an IMS content package. The collaboration between different universities or institutes within the same organization is facilitated a lot by the possibility to easily import already existing XML-based CP or SCORM learning content (specifications of the IMS Content Package: http://www.imsglobal.org/content/packaging; Resources concerning

**Custom Implementations**

There are only a few course elements left we have hardly spoken of yet. One among them is the assessment element placed within the public area (4). It can be used to individually show the students their results in tests or other forms of assessment. The number of points reached and the amount necessary to pass the class are displayed to the user. As the user is identified by his account data, only the information concerning him is shown, this way full privacy can be assured to the students. We use the possibilities of this element to show the participants of our class how many of the 12 necessary textpoints they have already reached (for further discussion see part III). By simply importing a spreadsheet file containing the information about all participants to OLAT we update the database weekly. This file needs to contain at least a column with the usernames of all students whose assessment information should be updated and another column with the current amount of textpoints. It is also possible to add columns just containing pass/fail (y/n) information or comments to the student. This element is a great aid in implementing our textpoint system.

The last element we need to discuss here are the questionnaires. There are two of them: One is shown to the students at the beginning (7) and the other at the end of the semester (12). The questionnaire consists of various types of questions, such as single choice, multiple choice or free text. The results are provided to the researcher in a single Excel-file, ready to be processed further. This is more or less the behavior we can expect from tools like this, but we implemented it in a singular way indeed. OLAT allows the use of expert rules, a flexible syntax used to specify the behavior of course elements. We use them to link the first questionnaire (7) to the “introduction of group members” (8) and the second questionnaire (12) to the “final assignment” (13). This means that the student is required to fill out the questionnaire first before gaining access to the related forum.
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(“introduction of group members” or “final assignment”). Thus we virtually get a return rate of 100% (short of technical failures).

A specialty of OLAT is that what the course author sees while creating his course is not what the end-user sees. This is because OLAT provides a course editor view that gives the author full control over virtually every aspect of the course elements. He can freely add, remove and replace elements, but he can also determine under which circumstances a course element is shown or hidden to the end-user. Additionally a visible element can be made inaccessible to users. There are different possibilities to trigger visibility and accessibility of course elements:

- By access right group
- By date
- By expert rule
- By assessment (depending on the result of an assessment)
- By attribute (depending on personal data of the user such as name, field of study etc. This data is provided by AAI (Authentication and Authorization Infrastructure), a system providing one single login to students for different educational online services such as webmail or e-learning. AAI is used in many swiss universities (http://www.switch.ch/aai/about/). The installation of OLAT at the University of Zurich requires users to log in using their personal AAI-account data, hence identification is possible.)

We used three of these possibilities. For example the access to the study group area is controlled by access right groups (called “right groups” in the OLAT nomenclature). Study groups are only shown to members of the respective right group, e.g. study group A is only shown to students that chose group A during enrollment (1). Other elements are activated by date, such as the file dialogs (10). They show up as soon as the respective assignment is given by the lecturer, e.g. the file dialog for discussion phase 2 is visible from the day when the lecture about the topic of assignment no. 2 takes place. And as explained above, by an expert rule the accessibility of the “introduction of group members” (8) and the “final assignment” (13) depends on a questionnaire which has to be taken first.

We use the features described above to reduce the complexity of the course environment for the students: New course elements only show up when they are used, thus we can start with a quite simple and thus user-friendly environment. This makes up one of the greatest advantages of OLAT: While the course editor is very detailed, only this huge amount of possibilities to influence the behavior of the course and its single elements allows the design of very user-friendly course environments. Through the complexity of the authors’ view a maximum of simplicity on the users’ part can be achieved.

PRACTICAL IMPLICATIONS

As it goes for part II we presented usability as a part of the technologies provided for our hybrid dialog. In this section we show how we link these online tools with cooperative work in the large lecture class. We focus on key components which make up our hybrid dialog. On the one hand we are discussing the importance of assignments and their assessment in our hybrid scenario. On the other hand we consider the individuals who fill in different roles to make the scenario work.

Assignments

Of course, technology is of crucial importance for the realization of our scenario—after all, it couldn’t be implemented without using an LMS.
But, as mentioned in Part I, a technical tool needs to be in the service of a pedagogical or didactic concept. Because assignments are a key factor to cooperative learning (Sluijsmans, Prins, & Martens, 2006, pp. 48–50; cf. also Salmon, 2004), they play a major role when using an LMS for cooperative learning.

Without meaningful and authentic assignments, there is little prospect of a fruitful learning dialog as intended by our dialogic scenario. Meaningful in this context means that the assignment has to aim at core problems of the subject matter at hand and that in order to fulfill the assignment, the students are supposed to acquire corresponding knowledge and to discuss their learning progress as well as difficulties encountered with each other. For the same reasons, the assignment should be authentic, that is, as similar as possible to the real tasks a professional in the same field would have to deal with. The authenticity of assignments also has a motivating affect on students and facilitates a transfer of the knowledge acquired into the later professional life (Gibbs & Simpson, 2004, pp. 14–16).

To illustrate the type of assignments we present an example from our scenario: One assignment follows the lecture on the topic of educational theory according to W. Klafki, one of the most influential thinkers in the field of didactic theory in the German-speaking area. The initial assignment instructs the students to take on their future role as a high school teacher and to write a request to their school administration. They are supposed to request an increase of weekly lessons of their subject (e.g. Mathematics or English) and to corroborate their requests with arguments derived from educational theory according to Klafki. As described in Part II, the students upload their contributions as rich-text files to the file dialog element of the current phase. This element automatically attaches a discussion forum to each uploaded file. The feedback assignment instructs the other half of the learning group to respond to these requests by posting a message in this forum. In these replies they take on the role of teachers of the same school who are teaching a subject which is threatened by the requested increase of the other subject. They are to explain to the school administration—also based on the educational theory according to Klafki—why the number of weekly lessons of the other subject should not be increased and why the number of their own subject should be kept up (the detailed technical handling of this interplay of initial contributions and feedbacks is described in Part II, section “Technical Implementation of the Didactic Scenario”, (10)).

Assessment

There are two important issues we want to address in this section. The first is the importance of new instruments to assess cooperative learning as it happens in our dialogic scenario. The second issue discussed here is the difference between grading systems based on punishment and such that are based on positive reinforcement.

In assessing the “whole-task” assignments (Sluijsmans et al., 2006, p. 57) described above, the usual e-assessment tools that mainly focus on item-based testing of declarative knowledge are of no use (Sluijsmans et al., p. 47). Rather, we need a paradigm shift from a test culture to an assessment culture (Birenbaum, 1996; Sluijsmans et al., p. 46; and Zimmermann, in press): “Contrary to more traditional forms of testing, performance assessments in which the students often are confronted with ill-defined problems do not provide clear-cut right or wrong answers. The performance is evaluated in a way that allows informative scoring on multiple criteria” (Sluijsmans et al., p. 50). The instrument widely used for this purpose is the so-called scoring rubric (Sluijsmans et al., p. 50; Allen, 2003, containing a large list with examples).

To assess the quality of the texts written in our scenario, we have also developed a scoring rubric. It aims at the three performance dimensions:
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a. quality of the presented subject content,
b. critical thinking, and
c. exchange (concerning only the feedback assignments, aiming at how deeply the thinking of the other student is reflected and discussed).

A further important change needed when shifting towards an assessment culture is an orientation towards potentials and qualities shown in student achievements (each quality displayed in a student work leads to a better grade) instead of the widely established deficit orientation (i.e. everything in a student work that conflicts with established knowledge is marked as false and leads to a lower grade).

In the same direction goes our not punishing students for failing assignments but rewarding them for assignments fulfilled (following the principle of positive reinforcement, cf. Woolfolk, 1993, pp. 221–222). Before this change, students who didn’t fulfill each and every assignment were denied the passing of the assessment and had to repeat the lecture in the following year. This caused some dissatisfaction on the side of the students so that we have established a “textpoint system”: For each text that has been submitted timely and that is of at least sufficient quality (measured by our scoring rubric), students receive 2 textpoints. If texts are not submitted timely, but within a certain time frame (before the next lecture), and they are of sufficient quality, students receive 1 textpoint. The same is the case when the text is submitted timely but is not qualitatively sufficient—if the student submits a revised version before the next lecture. In the course of the semester, there are 7 to 8 phases (depending on the number of lecture sessions, which can vary). Therefore, students can gather a maximum of 14 to 16 points, if they fulfill every assignment. To release the pressure somewhat and to make the rewarding system work at all (if every point possible would have to be gathered, it would still be a deficit oriented system), we set a threshold of usually 10 to 12 points that have to be achieved in order to pass the assessment. Students who gather less than the required amount of points fail and have to repeat the entire course.

The change from a punishing to the rewarding textpoint system has led to a significantly better judgment of our online scenario: In the last semester under the punishing system, about 10% of the 169 students questioned used the free comment part of our final questionnaire to complain about the “hard regime” and about an exaggerated “school regimentation”. In the following semester, under the new textpoint system, only 1 out of 57 students questioned made a remark in that direction. Also in face-to-face and e-mail conversations, we have hardly received any reproaches concerning the textpoint system, in contrast to the often harsh comments concerning the previous punishing system.

The increased acceptance of our new assessment system can also be demonstrated quantitatively. Our final questionnaire includes an item in which the students give a rating about how appropriate they find the online discussions as a course assessment. The scale ranges from 1 (very inappropriate) to 7 (very appropriate). A statistical comparison of these ratings for the fall semester 2007 (n=169) and the fall semester 2008 (n=184) shows that the number of students who rated the online discussions as a very or clearly inappropriate course assessment (values 1 and 2) was reduced to less than half after the change to the textpoint system (37% in 2007, 16% in 2008). In turn, the number of students who rated the online discussions as a clearly or very appropriate course assessment (values 6 and 7) was reduced to less than half after the change to the textpoint system (37% in 2007, 16% in 2008). Overall, the mean estimated appropriateness rose from 3.63 in 2007 to 4.37 in 2008 (p.000). This data means that the implementation of the textpoint system especially reduced the number of students clearly unhappy with the online discussions as a course assessment from more than a third to less than a sixth of the students. At the same time the number of
students clearly happy with the assessment could be increased from about a fifth to almost a third of the students.

**The Role of the Lecturer and Students**

The number of large lecture classes at universities strongly indicates that, despite the criticism, the large lecture class still has a role to play in university teaching. The question is how to ensure or improve the quality of the actual standard of large lecture class teaching. The integration of new learning technologies changes the culture of learning putting more weight on learner oriented methods. This includes more communication between learners and teachers as well as among learners and a stronger focus on the development of skills and competences. These claims lead to a new role of the teacher in terms of new forms of learning arrangements, support and assessment (Reinmann, 2005, p. 260).

Within hybrid learning environments, the main focus of effective lecturing shifts to the mediating role the lecturer holds in the learning experience of the students. In particular ensuring cohesiveness in the class requires intervention at critical points to pull together disparate strands of discussion (Bender, 2003, p. 33; Feenberg, 1989, pp. 34–35; Field, 2005, p. 210). Thus the role of the lecturer has to be defined in terms of the students’ expectations such as structured lecturing which includes revising the previous lecture. These expectations are met by our hybrid dialog setting.

**The Role of the Assistant of the Lecturer**

The tasks of the assistant of the lecturer are very diverse. In our setting the assistant combines different roles in one person. As a course manager the assistant sets all elements in the OLAT course: The numbers of learning groups within a large lecture class as well as the complex course structure of the LMS OLAT with the various numbers of elements demand a course manager. It is possible to appoint a second assistant who is only responsible for the LMS course management and additional technical matters. The assistant in our setting is also the person in charge of supporting the moderators. He or she organizes their instruction at the beginning of the semester and coordinates the assignments for them. He or she also assists the moderators in rating the online contributions of the group members. At last the assistant administrates and makes the final decision over textpoints.

Finally the most important task of the assistant is to bridge between students and the lecturer. By passing the aggregated summaries of contributions to the lecturer he fills the gap of information between them and enables the lecturer to cover the vast content of the online dialog in his lectures.

**The Role of Moderators**

The success of cooperative online learning not only depends on well-structured assignments but also on the assistance by moderators allocated to a learning group. Thus our hybrid dialog scenario incorporates moderators moderating the online discussion. Moderators in our setting are students who attend the lecture class on a regular basis but additionally fill the role as a moderator. (It is also possible if not preferable that advanced students fill this role, which is hardly possible in our case, only due to the fact that our course is a post-graduate course with short average duration.) Moderators in our case therefore are not providers of knowledge since they do not possess more knowledge than their fellow students. Instead general tasks of moderators refer to the support of the online activity: fostering the feedback culture among the study group members, initiating questions for controversial discussions, leading attention to certain topics. Moderators are also addressed with organizational questions (e.g. concerning assignment requirements) and smaller technical problems. At the beginning...
of the semester the moderators are instructed by the assistant of the lecturer and receive a manual for moderators (Zimmermann, Haab, & Schneider-Lastin, 2008). They learn how to administrate the element “file dialog” and other communication tools and how to summarize the contributions at the end of each phase. The latter is the most important aspect of the tasks done by the moderators. Moderators regularly pass on summaries of the contributions published on the LMS OLAT by the study group members to the assistant of the lecturer (see also procedure described in part I). Additionally moderators rate in each phase the two poorest and two best contributions. This rating serves the purpose of a quality control: Poor texts can be refused and very good ones can be passed on to the lecturer by the assistant. In order to do the rating properly moderators exchange their experiences and approaches with their fellow students who also fill the roll as moderators. For these activities they use the moderator’s area on the LMS OLAT (see also Part II). The communication among moderators plays a very important role in the development of a common quality agreement and prevents different levels of standards in each learning group.

The time exposure of the tasks done by moderators is compensated with 2 Credit Points (equals 60 hours of study work) according to European Credit Transfer System.

CONCLUSION

There is a widely spread prejudice that large lecture classes make it impossible to address self-directed learning. This may be true for traditionally held lectures, but there are ways to enhance the unidirectional communication of lectures. As we have shown above, the use of electronic communication technology is a very promising means to establish a multi-directional dialog. However, a promising dialog doesn’t emerge just out of applying technology, but has to serve a certain didactic purpose in a pedagogically structured teaching and learning environment. The dialogic learning (Ruf & Gallin, 2003) provides a theoretical and practical basis to design such environments.

Learning Management Systems have to support the implementation of teaching and learning environments. They best can accomplish this by being as shapeable as possible, because sensible and functioning environments are primarily created by a didactical and pedagogical approach. Thus, LMSes have to ensure they do not over-rule didactic demands by technical restraints: Tools should be able to follow didactic concepts (Zimmermann & Haab, 2005, p. 17). With OLAT, we have presented a flexible LMS that enables creating customized teaching and learning environments. Above all, this is due to its modular structure and the possibility to customize courses by right groups and expert rules.

Of course, our favoring OLAT for the scenario described in this chapter does not mean that it could not be implemented by other LMSes, because hybrid dialogs do not depend on specific technical features except for the possibility of asynchronous text-based communication. And in smaller classes, one can implement a hybrid dialog with less complex tools such as a simple discussion forum.

Hybrid dialogs offer advantages on different levels. Firstly, the continuous running through the dialogic workflow enables a constant adjustment of the teaching supply by the lecturer and its use by the students. Secondly, such a “just-in-time teaching” (Novak, Gavrin, & Christian, 1999) has proven to be highly motivating, because everybody involved takes responsibility for their own learning as well as for the learning of others. Therefore, it is important to be aware of the specific roles the different people involved (students, moderators, assistants, lecturers) take in the different stages of such a scenario and which demands these roles make on them. Last but not at all least, a hybrid dialog can support a paradigm shift from mere
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testing to genuine assessing and thus increase intrinsic student motivation by establishing formative feedback processes and positive reinforcement (Zimmermann, in press).

There are some challenges regarding hybrid dialogs that have yet to be addressed. For example, there is a group of about 10-15% of the participating students that, according to our questionnaire, displays very little appreciation of our scenario and an accordingly low motivation. We hypothesize that these are people with a (generally or specifically with regard to educational science) low intrinsic learning motivation. There are also other possible factors that may influence the estimation of hybrid dialogs, such as writing abilities/strategies (cf. Torrance, Thomas & Robinson, 1994) or personality traits (cf. McCrae & Costa, 2003, pp. 37–57). The influences of all these individual factors on the estimation of hybrid dialogs and on the resulting amount of dedication displayed by students have yet to be analyzed (corresponding research is currently conducted by T. Zimmermann in the context of his doctoral thesis).

Another issue is the balance of assessing learning processes and learning products. The assessment applied in our scenario strongly emphasizes learning processes: Initial contributions as well as feedbacks are documentations of students’ learning processes and not final products. In contrast, no final learning products such as term papers have to be produced. One may argue that this lopsidedness counterbalances the excessive product orientation in the current academic teaching culture, considering that by far most academic assessments address learning products and hardly account for learning processes. But we hold that this would be a polemic argumentation. Instead, educational science has to search for ways to reconcile process and product orientation, since they address both sides of the same coin. Consequently, possibilities to include learning products and their assessment in our hybrid dialog scenario have to be explored. Therefore, our next step will be to let our students write a brief term paper at the end of our course. In these papers, students will integrate their contributions and feedbacks as well as the feedbacks received into the overall context of the lecture and reflect their learning progress. This adds extra value to the online discussions, as they lead towards the goal of writing a term paper and have therefore to be reconsidered. The term papers could also be reviewed by fellow students to reduce the amount of work on the side of the lecturer and his assistants, who would “merely” have to control the peer reviews. The effects of this measure will have to be analyzed to draw further conclusions about the integration of process and product regarding hybrid dialogic learning.

The described research into the success factors of online learning dialogs on the pedagogical side as well as the development of maximally customizable LMSes on the technological side seem to be the most promising ways to further enhance the potential of hybrid dialogic learning. Overall, we hold that hybrid dialogs have already proven to be very effective means to achieve deeper learning.

REFERENCES


