Abstract: In a changing European educational landscape, e-learning strategies become important tools to cross national and disciplinary boundaries. This paper introduces the first strategic e-learning project at the Department of Social and Cultural Anthropology of the University of Vienna. Furthermore, it discusses selected results of an evaluation of blended learning scenarios and models designed within the project. An adapted model for modes of interaction is deployed to develop and analyze these blended learning scenarios. Results indicate that holistic learning strategies are necessary to integrate all actors within this specific educational setting.

Introduction

The higher educational landscape in Europe is changing. Different programmes, initiatives, and projects aim to create learning and teaching environments, which allow students to study abroad, attain standardised credits according to the “European Credit Transfer and Accumulation System” (ECTS), and qualifications (bachelors, masters, and doctoral degrees). This European educational harmonization process is named after the place where it was proposed in 1999: Bologna. Besides its ambitious objective of creating a “European Higher Education Area”, the European Union also wants Europe to become the world’s leading information society in 2010. These two projects overlap in the fields of e-learning and e-teaching. Since this dimension of the harmonization process of the European educational landscape was neglected at the beginning, the “European Association of Distance Teaching Universities” (EADTU) launched a strategy called “eBologna” in 2003 (Bang 2005, Van den Branden 2004). Main aspects of this initiative for the integration of e-learning and e-teaching into the Bologna process are the internationalisation of e-learning and the promotion of the “virtual mobility” of students, teachers, and courses (Bang 2005).

Within this paper we introduce a learning environment at the Department of Social and Cultural Anthropology of the University of Vienna, Austria. First we present the technological infrastructure and the process of content production as well as strategies that have been developed within this e-learning project. We then discuss and analyze selected results
of an evaluation that was conducted for a period of one and a half years involving almost 900 social anthropology students. In doing so we are concentrating on the students’ experiences, uses, attitudes, and acquired competences in e-learning and blended learning in the context of methodology education in this Austrian social science setting. Finally, we discuss the outcomes of this local strategic project in the global context of the proposed European education area.

**E-Learning at the University of Vienna and the Department of Social and Cultural Anthropology**

First steps in the integration of e-learning at the University of Vienna were undertaken with the strategic project “New Media in Teachings at the University of Vienna” (Neue Medien in der Lehre an der Universität Wien), which started in 2002 and resulted in what is now the technological, organisational, and political infrastructure for e-learning and e-teaching at the university. E-learning at the University of Vienna is officially considered as “blended learning”, meaning the expedient mixture of face-to-face and online phases in education (e.g. Lorenz et al. 2004). At the didactical level an e-competence curriculum, amongst others, was established, which aims to prepare teachers to design, organize and realize their own e-learning courses. A dedicated “New Media Support Bureau” and e-tutors provide permanent support for teachers who have decided to implement an e-learning course. The project also resulted in the purchasing and the implementation of the learning management system (LMS) WebCT Vista in 2004, which was replaced by Blackboard Vista in summer 2007.

Whereas the University of Vienna is continuously fostering the practicing of e-learning, the Department of Social and Cultural Anthropology and its teachers, as the entire Faculty of Social Sciences, has been quite hesitant in applying e-learning tools, methods, and technologies. This may be due to the tendency of social anthropologists to distance themselves from the usage of information and communication technologies within teaching by “emphasising the ‘human’ aspect of anthropology where personal relations and socialisation are privileged” (Mills et al. 2004: 10). Other reasons why some anthropologists have decided to stay away from e-learning are the lack of established strategies to implement e-learning tools into the educational practice, the absence of information about e-learning basics, and the insufficient promotion of examples of best practice and their evaluation. The same is true for anthropology students who seem to have a very critical attitude towards e-learning and therefore need to be informed and included in the creation of e-learning models and concepts right from the beginning (e.g. Budka 2006, Pink 2004). To provide all those requirements, the project “Strategies for Networked Learning” was initiated in the beginning of 2006 at the Viennese Department by an e-learning experienced team of social anthropologists.

**Strategies for networked learning**

The e-learning project “Strategies for Networked Learning” ([http://www.univie.ac.at/ksa/e-learning](http://www.univie.ac.at/ksa/e-learning)) aims to develop strategies to include selected e-learning tools, methods, and technologies in the most useful and efficient way into the teaching and learning practices of undergraduate social anthropology students. To achieve this objective, an e-learning environment has been created, which comprises different learning tools:

- an open and free to use web-based hypermedia content pool (CP), which contains interconnected learning units that are produced by a team of teachers/authors of the Department of Social and Cultural Anthropology,
- the official learning management system (LMS) of the University of Vienna: WebCT Vista / Blackboard Vista, and
- selected wiki systems, which allow for collaborative learning and knowledge production.

These instruments are used by teachers to construct various blended learning scenarios. Since most of the teachers had no or only little experience with producing learning material for the World Wide Web, they were introduced to a special authoring tool, which was already used and successfully evaluated in previous e-learning projects (e.g. Budka et al. 2005, Mader et al. 2004). This tool – the MindManager – is able to create mind maps which not only enhances creativity, but also enables the construction of hierarchical structures in a highly visual format. Authors can also easily connect text modules and elements to a hypertext structure without necessarily knowing HTML.

**Producing hypermedia learning units**
The MindManager supports authoring in a hypertext structure that enables the authors to produce HTML prototypes of the learning units and test them before being definitely integrated into the e-learning environment. The content can thus be evaluated and refined at various stages of production. Furthermore a RTF export function allows the user to create traditional course scripts (e.g. PDF or DOC documents) according to the book metaphor.

The learning units are exported to XML (Extensible Markup Language) by PHP scripting and stored in a database. The design of the database allows the direct integration of metadata (Dublin Core Standard, LOM, etc.), multimedia objects, such as images and bibliographic data, etc. Interconnected XHTML documents are then automatically generated from the database to be published on the World Wide Web. This system of learning material generation, which we call M2OST (Mindmap to Online Studies), is also able to integrate SCORM (Sharable Content Object Reference Model) content packages that can be imported into LMS (Budka et al. 2005). The formatting of the documents is accomplished through CSS (Cascading Style Sheets) to make the content fully accessible according to the Web Content Accessibility Guidelines of the World Wide Web Consortium (1999).

An innovative method, which adds a dynamic feature to the collection of static XHTML documents, is the automatic linking of the documents to a preinstalled wiki system (Budka et al. 2007). For this purpose a new PHP script, which automatically adds (hidden) links to each XHTML page of the learning unit, was written. Students are thus able to annotate pages and collaboratively create texts referring to the learning unit. In addition, this method allows authors and teachers to annotate and comment the learning units of their colleagues while they are still being developed.

Sharing terms and concepts with a glossary database

Authors define selected terms and concepts in the hypermedia learning units as well as in an online glossary database, which allows the sharing of terms in a collaborative way. Thus, authors can produce their own definitions, refer to definitions created by other authors or utilize several definitions of one term or concept. While authors may only edit their own contributions, they are enabled to annotate definitions created by their colleagues.
In the process of producing learning units, authors are provided with easy ways of labelling terms and concepts, which refer to definitions in the glossary database. Authors can simply mark the desired terms directly in their mind maps either by colour marking or by using a special element with an id-attribute like `<term id="5">Qualitative Research</term>`. Through PHP scripting, XHTML pages of the corresponding definitions in the database are then generated automatically.

**Remixing content using Yahoo! Pipes**

Having stored the produced content in a database makes it very easy to react to new e-learning related developments, such as Web 2.0 mashups, and to integrate additional features into the learning environment. One of these innovative Web 2.0 applications is Yahoo! Pipes, a powerful tool to aggregate, manipulate, and “mashup” content from around the World Wide Web (http://pipes.yahoo.com/pipes/).

For the usage of Yahoo! Pipes within this learning environment, we have added a filter and created some simple rules for mashing up selected learning units’ pages. These pages, for instance, can be combined with the output of a Yahoo! search restricted to the German version of the Wikipedia (http://de.wikipedia.org). The Pipe’s output can be accessed directly or it can be exported to a new RSS webfeed. Since Yahoo! Pipes can be accessed publicly, students are able to copy and adjust these feeds according to their own needs.

![Example of a Yahoo! Pipe](image)

To utilize this service, we wrote a PHP script, which generates a RSS 2.0 webfeed for the learning units produced within the project (cf. http://www.rssboard.org/rss-2.0). In this specific case only few sub-elements of the `<item>` element are used. The `<guid>` element, for instance, is linked to the order number of the XHTML pages and the `<category>` element describes the learning unit. Once the RSS 2.0 document is published on the web, it can be fetched by Yahoo! Pipes as a source (“Fetch Feed”).

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**Figure 2:** Adding terms and concepts to the learning units

**Figure 3:** Example of a Yahoo! Pipe
Besides its innovative and flexible technological infrastructure, the e-learning project “Strategies for Networked Learning” is one of the first major steps in the systematic integration of e-learning and blended learning in social anthropology education at the University of Vienna. Since the e-learning environment constructed within this project is open and free to use, it can be easily expanded and interconnected to similar e-learning systems at educational institutions and organizations.

Evaluating blended learning in methodology education

The e-learning tools used within the project’s blended learning scenarios facilitate different “modes of interaction”, introduced by Anderson (2003a, 2003b) and Anderson and Garrison (1998) in the context of student-centred distance education: (1) student-content interaction, (2) student-student interaction, and (3) student-teacher interaction. Within our e-learning project, the hypermedia learning units allow in particular for student-content interaction. The LMS, on the other hand, basically contributes to teacher-student as well as student-student interaction by providing different communication tools, such as e-mail and discussion forums.

Several courses implementing blended learning scenarios have been evaluated within the e-learning project by surveying almost 900 students over a period of 16 months (October 2006-January 2008). In this paper we are going to provide selected results of

a) the winter semester 2006 and the summer semester 2007 evaluations concerning students’ usage and experience with the e-learning environment,

b) the winter semester 2007 evaluations concentrating on students’ changing attitudes and acquired competences towards e-learning and blended learning during this four months period.

Only data that was collected in proseminars (PS) with mandatory attendance for students in their first two years of study, which are part of the methodology curriculum in social and cultural anthropology education, are considered for this paper.
At the end of the winter semester 2006, 333 students in ten different courses at the Department of Social and Cultural Anthropology were questioned. Three courses of the PS “Quantitative Research” were evaluated, which aim at providing students with basic skills for a better understanding of the basic methods of quantitative research. Through presentations of theoretical issues, discussions, and the studying of relevant texts, students get prepared for creating, conducting and analyzing a survey. In addition, four courses of the PS “Scientific Writing” were evaluated, which focus on teaching the formal and stylistic skills of scientific writing within the field of social and cultural anthropology. Within the scope of these proseminars, students practice to create comprehensive scientific and journalistic texts.

At the end of the summer semester 2007, we questioned 261 students in twelve different courses, including five courses of the PS “Scientific Writing”, three of the PS “Quantitative Research”, and one PS “Qualitative Research”. Within the PS “Qualitative Research” students learn to practice different ethnographic methods and techniques, such as conducting interviews and participant observation, and to analyze the collected qualitative data.

In the winter semester 2007, we questioned 235 students at the beginning and 178 at the end of the semester. 115 of these students participated in both surveys on which we will focus in the following. Students were questioned in nine courses, including five courses of the PS “Scientific Writing”, three of the PS “Quantitative Research” two PS “Qualitative Research”.

For these courses several blended learning scenarios were realized using (1) the LMS WebCT Vista / Blackboard Vista and (2) hypermedia learning units, namely the units “Scientific Writing”, “Quantitative Research”, and a prototype of “Qualitative Research” produced within the project by a team of authors who also teach these subject matters. The implementation of these e-learning elements within the blended learning scenarios was evaluated by students in respect to the structure and functional use, the utility, and the comprehensibility as well as the personal usage of different tools.

The average age of the students within the first evaluation round in winter 2006 was 23 years, ranging from 18 to 72 years of age (N=333). Most of the students were female (80%) and in their second year of studies. The majority of students accessed the internet at home (92%) and at the university (50%). 45 percent of the students had prior experience with e-learning. Asked to self-assess their computer competence, students ranked themselves with 4,97 points on average on a 7-point Likert-Scale (ranging from 1 very low to 7 very high).

The second round of evaluation in the summer semester 2007 produced very similar demographic results. Again a majority of students (N=261) accessed the internet from their homes (95%) and the university (58%). But 70 percent of students had prior experience with e-learning at the University of Vienna and students also had a higher computer competence, according to their self-assessment (5,11 points on average on a 7-point Likert-Scale).

We state a significant correlation between the hypermedia learning units, their subject matters and the level of utilization within the blended learning scenarios. Students in courses of teachers who actively integrated the learning units into their didactical concepts, found the explanation, comprehensibility, and structure of the subject matter to be logical, not complicated, and easy to understand. Those teachers were either authors of this learning material, and therefore developed a perfect understanding of this hypertext, or they gained a deeper understanding of the online learning content through their participation in the project. Students seem to reflect this level of identification teachers developed with the hypermedia learning material. In the context of the modes of interaction (Anderson 2003a, 2003b) in blended learning scenarios, it can be argued that a low level of teacher-content interaction directly results, through student-teacher interaction, in a low level of student-content interaction (cf. Budka et al. 2007).

The demographic data of the third and the fourth round of evaluation at the beginning and at the end of the winter semester 2007 indicate again very similar results in age, gender, and year of study. In comparison to the surveys conducted in the winter semester 2006 and the summer semester 2007, the number of students (N=115) accessing the internet at the university increased to 60 percent. Equally, students’ prior e-learning experience jumped up to 76 percent.

Within this semester students’ self-assessment of their computer competence increased from 5,18 to 5,34 points on a 7-point Likert-Scale. In a gender context, these data indicate a difference in computer competence between women and men that is increasing during the semester (N=115).
Computer competence

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Table 1: Gender gap in self-assessing computer competence (winter semester 2007, Oct. 07 – Jan. 08)

Students also had to rate the importance of media competence for succeeding in the labour market and for their personal professional outlook. Interestingly, students seem to acknowledge the importance of media competence in general, but not necessarily in the context of their own future. At the end of the semester media competence was considered more important, but again not for the students’ personal professional prospects.

Whereas e-learning in a broader sense was considered meaningful over the whole semester, the usefulness of e-learning was declining in the very concrete context of social anthropology methodology education (from 5,53 to 5,11 points on a 7-point Likert-Scale). We claim here that the teacher is one of the crucial factors for the students’ acceptance of e-learning tools and blended learning scenarios.

Other important factors in the acceptance of e-learning are the students’ age and year of study. Students in their first year of study are more likely to be motivated as well as de-motivated by e-learning. On the contrary, e-learning and blended learning does not have significant influence on more experienced students’ level of motivation. Students in a later year of study consider communication and collaboration through e-learning more meaningful and useful than their inexperienced colleagues. This could be caused by student’s changing needs in different stages of study, e.g. student beginners need more face-to-face communication and collaboration to orientate and network in the new social environment.

In addition to life experience in the university environment, experience with e-learning tools and blended learning scenarios is also a critical factor for students’ e-learning attitude. Students with previous e-learning experience consider the impact of e-learning and blended learning on critical and reflective thinking as more positive than e-learning inexperienced students.

In summing up we can state that there are several social factors – age, gender, experience, competence, and interaction – that have to be taken into consideration in implementing blended learning scenarios. Depending on the educational contexts these factors are of different importance.

Conclusions

E-learning at the Department of Social and Cultural Anthropology of the University of Vienna is becoming more integrated into students’ learning practices, as results of the evaluation, which was conducted in several rounds over a period of 16 months, indicate. Through the project “Strategies of Networked Learning”, the first major step in the systematic and strategic e-learning implementation at the department, teachers also made first experiences with e-learning concepts, methods, and tools. Interaction and communication between teachers and students are crucial factors in the students’ acceptance of e-learning tools and blended learning scenarios. The social factor is therefore of utmost importance in introducing, using, and practicing new technologies in an educational context. It is exactly this social interaction between humans that is of such high importance to social anthropologists that makes technologies meaningful and accessible to people.
Outcomes of the evaluation also show that the implementation of e-learning environments can intensify gender differences in the deployment of computer technologies. Thus, active gender mainstreaming seems to be necessary and should be considered for future projects. In general, students developed more concrete conceptions and positions of e-learning, its implementation, and its impact on their social science methodology education.

Processes of identifying strategies, implementing tools and methods, and evaluating scenarios and models for e-learning in the social sciences need to be planned and conducted openly and holistic by integrating also the critical voices. Solely this way, e-learning will also find its place in technology critical environments such as social science education (cf. Budka 2006).

The products of this local and disciplinary e-learning project – the learning environment, the blended learning scenarios, and the educational strategies – which are created as open and flexible as possible can not only be used in a inter- or transdisciplinary way, they also can be used in a global context. Once comparable standards are implemented in the “European Higher Education Area”, evaluated and tested blended learning scenarios could be exported into similar settings at other social sciences departments. The learning environment, thus, fulfills the requirements of the eBologna initiative by enabling the mobilization of “virtual” courses.

References


