Virtual Weddings and a real wedding of linguistics, literature and cultural studies

"Streamed seminar on the project with Therese Örnberg (student participant) and Patrik Svensson (project leader) is available here"

Homepage: http://www.eng.umu.se/vw/

More information and a short movie:
http://www.eng.umu.se/city/city_theme.htm

Abstract

Studying a foreign language involves much more than just the acquisition of language proficiency and vocabulary. At the Department of Modern Languages/English we give courses, for example, in linguistics, literature, cultural studies and life and institutions. The courses are organized on a modular basis and it is our ambition in this project to break down the perception of English studies as a number of self-contained areas with only vague links to each other - a perception encouraged by the modular system - and to create instead an IT-based synthesis. We hope that in doing this we will promote a holistic view of the various phenomena and give students an insight into how modern technology can be used to create such a synthesis. We use the ActiveWorlds suite of software to create a desktop virtual reality environment. It provides us and the students with a single interface, which can be used to incorporate basically all aspects of the project.

The synthesis will be constructed around a given theme; several possible themes suggest themselves. Our plan is to begin with one pilot study and then to gradually extend the range and number of themes available. The pilot study will serve both teaching and research purposes; the approach will be problem-based. The theme chosen for the pilot study is wedding. The ultimate aim is for the students themselves to experience a “wedding” of ideas, knowledge and insights which they themselves have brought together during their work and which will be expressed in virtual form, played out anywhere from Austen’s England to present-day Sierra Leone.
Project update

The principal aim of this project is to create a model that will incorporate an innovative and communicatively and analytically oriented use of information technology and virtual worlds into the study of English at university level. The model will aim to integrate IT in such a way that a synthesis can be achieved between the various modular components of the course - linguistics, cultural studies and linguistics - culminating in a virtual event that is an expression of the whole concept.

We hope that the IT-based synthesis will promote a holistic view of the various phenomena and give students an insight into how modern technology can be used to create such a synthesis. The synthesis will be constructed around a given theme; several possible themes suggest themselves. Our plan is to begin with one pilot study and then to gradually extend the range and number of themes available. The pilot study will serve both teaching and research purposes; the approach will be problem-based. The theme chosen for the pilot study is wedding. The second theme, which will be used in 2001 is the city. The final theme will be monsters and abnormality.

We use the ActiveWorlds suite of software to create a desktop virtual reality environment. It provides us and the students with a single interface, which can be used to incorporate basically all aspects of the project. Naturally, our main focus is not on very fancy graphics and the level of detail found in ActiveWorlds is very appropriate for our needs. The virtual environment serves as a facilitator and as a creative arena where students build things together – thus engaging in both concrete and abstract virtual construction.

Students are encouraged to express themselves creatively and artistically - through building visual representations in the virtual world and through working with rich hypertext. The project emphasizes the importance of constructivist learning, collaborative work, non-textual representation, international cooperation and motivation.

The ultimate aim for the project was for the students themselves to experience a "wedding" of ideas, knowledge and insights, which they themselves have brought together during their work.

Progress report

In the autumn of 2001 we had carried two rounds of the projects. In 2001 the theme was weddings and in 2002 the city. A total of 14 students have been involved, and all of them have passed the course (the "c-uppsats"). In itself, this is an interesting aspect as there is a tendency for C students not to finish their C papers. We have found that the virtual environment increasingly has become an arena where students spend time and where things happen. In terms of progress, one very noticeable aspect is how the inworld construction and hyper textual representation have developed. Students also carefully examine what previous students have created, and there are many contacts between student groups.
In June 2001, some 30 people visited the world to take part in the presentation that the city students carried out. It was a very successful event which also taught us a great deal about how to stage virtual manifestations. Participants came from all over Sweden, from Europe and from the US. There were web cameras in the lab, which broadcast live images from the lab in the virtual world. This gave the visitors a sense of the physical environment the students were working in, and also a link between the worlds. Bringing in people from the outside is an important aspect of the project, and we find that the constant influx of people and ideas is vital to the project. For the next round we will further stress the non-textual and artistic means of expressions that are available. We will start out in the virtual world earlier, and Professor Reed Riner from Arizona State University will come to Umeå in 2002 and function as an external evaluator of the project.

Lovande yngre forskare belönad (only in Swedish)


Enligt motiveringen belönas han för att han är "en mångsidig och lovande ung forskare vars vetenskapliga produktion omfattar modern lingvistik, med förankring i historisk språkvetenskap, korpuslingvistik, digital engelska samt språkinlärning".

Under sin tid som föreståndare för HUMlab har han dessutom initierat, och medverkat i ett flertal projekt av stort pedagogiskt intresse, heter det vidare. Priset, som förutom äran är på 30 000 kronor, kommer att delas ut vid Umeå universitets årshögtid den 8 november 2003.

Building a virtual world for learning, collaboration and experience

Project report for project 138-98
“Virtual Weddings and a real wedding of linguistics, literature and cultural studies”

http://www.eng.umu.se/vw/
Introduction

For the project leaders of the Virtual Wedding Project, the project has been a very important step to a new understanding of learning, multidisciplinarity, collaborative student work, non-traditional representation and virtual student contact. It has been experimental in nature, and has progressed over the years at the same time as the students involved have remained in the project even after the course has finished. For the first time ever, admittedly because of a suggestion from the American evaluator, we plan to create an alumni organization for a course.

The VW Project came about as an attempt to bridge the gap between the sub-disciplines in English as an academic subject - linguistics, cultural studies and literature – and as an opportunity to explore non-traditional representation in an academic context. Interestingly, in 1999, the cultural studies component was very new, and the English Department at Umeå University was among the first departments in Sweden to introduce this element in addition to the traditional linguistics and literature elements. The course chosen for the project was the C essay (a third term final paper which represents ten weeks’ work). Instead of writing a traditional paper, the students involved in the project have populated and created a graphical virtual environment. The work has largely been thematic, and it has been important to find rich themes which integrate literature, cultural studies and linguistics. The themes used for the three consecutive years have been weddings, the city and monstrosity.

This report will focus on the basic aims and structure of the project as well as progress, significant aspects, assessment, problems and the future. The report itself is accompanied by several other documents including a list of project presentations and an extensive evaluation of the project by Professor Reed Riner (Appendix 1). Throughout the project we have tried to involve people with different backgrounds and interests, and the fact that Professor Riner’s field is anthropology is characteristic of the project. We believe that outside associations and involvement are extremely important, and through a great many presentations, meetings and contacts, we have both tried to get feedback and new ideas, and tell other people about what we have been doing. Riner’s evaluation focuses on the students, and the results seem to indicate that students have both appreciated the project and feel that they have been allowed to learn and represent their work in new ways. For the project leader, this is the most important aspect of the whole project.

Background and general description

The field of academic language studies is traditionally split up into linguistics and literature in Scandinavian countries, and usually oral and written proficiency are integrated both as separate courses and as a natural part of other courses. This division might be specific to the language subjects, but academic settings with similar types of structure are not rare. Quite frequently the sub-disciplines need to protect their own turf, and specialization leads to varying degrees of compartmentalization. In the case of English and the Department of English at Umeå University in 1999, the sub-discipline cultural studies had recently acquired a similar status to linguistics and literature. While this might have been expected to promote multi-disciplinary work, this was only true to a limited extent. The curriculum structure is based on discrete modules, and the result is often, as one might expect, modularization. Moreover, there are issues of identity and delimitation at play here, and typically, a teacher identifies himself or herself as a linguistics or literature person, and students soon become immersed by this paradigm. A module is identified as linguistics, literature or cultural studies.
From the very beginning, one of the most important aims of the VW Project was to provide a cross-disciplinary approach and an arena where disciplines and people could meet. The approach is distinctly thematic, and while there is a great degree of variation in Swedish academic education, thematic approaches (especially formalized) seem to be much less frequent here than in e.g. the US. In order to create the arena described above we decided early on to use Active Worlds as a platform. This is a distributed virtual environment which makes it possible for many people to share the same graphical environment regardless of physical location. Figure 1 presents the user interface of ActiveWorlds.

One window shows the graphical world, one is used for text chatting and the window furthest to the right shows a web page. The possibility of integrating a representation of a virtual world with a browser window facilitates a complex and content-rich environment. There are typically links between the graphical world and web window. For instance, if you enter an area for a specific student group in the world, a student group web page might appear in the browser window. Importantly, the virtual world provides a non-transitory space which belongs to the students and which is available to the rest of the world. Also, the platform has proven easy to use for those with limited knowledge, and what can be produced looks relatively good. The graphical level of detail strikes a balance between too much detail and too much sketchiness.

The module that was chosen for the project was the third term final paper (C essay). It provided us with a reasonable time frame (10 weeks) and was also “moldable” in that there were already cultural, linguistics and literature C essays; albeit very separate in the traditional format. The C course was also chosen because students had already had two semesters of literature, linguistics and cultural studies, and therefore certain basic knowledge on which to build. Choosing between disciplines for the C essay is actually a major decision for the majority of students, and most students also continue with the same sub-discipline for their fourth term paper (D essay).
It is important to realize that these essays have a very particular status in the educational system and that there are strong traditions as to the formal aspects. These papers are textual with an introduction, methodology section, conclusion etc. We felt that sometimes the formal aspects of the paper receive an unfair share of attention and that it might be limiting in its mono-modality and rigid structure. The type of environment described above lends itself to non-textual types of representation, and since there is no tradition or a standard, students have had a great degree of creative freedom. Of course, the basic idea of an essay of this type has remained: that students should present an independent and critical analysis and that they should be trained in analytical work, use of sources etc.

The project has involved four iterations to this point, and three of them took place within the project time frame. We chose to launch a new iteration every spring semester rather than every semester for several reasons. The main reason was that we needed time for reflection, analysis and development. This was probably a good decision, and we feel that we have had time to rework the project and take students’ opinions into account. The very first semester we also spent almost three weeks on a study visit to the US, which turned out to be very successful in many ways (see below for a more detailed discussion). We also produced a student guide after the first run of the project (see Appendix 2), which we have revised every year.

Students were offered the opportunity to participate in the project or write a traditional essay, and for the final rounds, about half of those doing the C level have signed up for the project. At the end of the preceding semester we introduced the project, and invited interested students to a HUMlab session. Because of fluctuating student numbers we have had the opportunity to work with student groups of varying sizes. During the semester we had a rough working plan, and tried to meet the students almost every week in physical space. Since we have made heavy use of HUMlab, which serves as a meeting place between technology and the humanities, we have also had access to a common physical project space. Generally speaking, the students have had a great degree of freedom, and through a collaborative learning setup, they have had support from their fellow students. Traditional C essays at the department (and at many other departments) tend to be very individual tasks, where a student has a supervisor, but relatively limited access to him or her (formally a C essay carries an allocation of 12 hours per supervisor).

Students have been encouraged to move from a theme and the individual sub-disciplines to an increasingly analytical and holistic understanding. As the semester has progressed, there has also been a shift from individual to collaborative responsibility. On a more practical level, students have produced a number of hypertext (web) papers which are linked to a graphical world which they spend time in and continually construct. The hypertext papers are shorter than traditional essays, of course, but they are linked not only to the world but also to other hypertext papers and to other material (for instance fellow students’ work). Overall, students in the project appear to have produced a little less or approximately as much text as regular C essay students. Students have been encouraged to experiment with representation, and as far as the world is concerned, there have been very few, if any restrictions. At the end of the semester, typically in early June, the students have presented their work in a final manifestation – both in HUMlab and in their virtual world. In 2001 and 2002, the virtual manifestations were visited by about 30 people including the students themselves. There were also been quite a few visitors in the laboratory environment. Figure 2 illustrates the concept of a virtual presentation.
Here we see a crowd gathered to listen to one of student group presentations in 2001. The theme of this iteration was the city. The virtual persona hanging in the air by the pillars on the left-hand side of the image is one of the students making the presentation. The actual presentation consists of what goes in the virtual environment as well as the chat presentations and discussions that occur in the text window (not shown here).

Building a world

The project has focused on student creativity rather than teacher or supervisor creativity. The virtual world was empty to start with (apart from a central tower which will probably be interpreted as a traditional monument in the future), and the students have created their own representations. We have also tried to encourage students to use other kinds of technology. For instance, students have been videotaped presenting their projects, and these clips have been made available on web pages. Allowing students to be creative, both with regards to the subject-matter and technology, might seem a trivial point, but in reality, much learning is controlled, and technology is often used to create teacher material that is then fed to passive students. Also, it is important to realize that students projects like the Wedding Project are exploring the extents of the technology. From this follows a learning situation in which supervisors or teachers are not in control, and where students will create, think and represent in ways that cannot and should not be predicted. The vision is about learning for life and allowing students to draw on their inner resources.

At the start of the project, we felt the need to defend the graphical representation in the world, and to posit it very clearly as a symbolic representation of analyses and understanding. While the symbolic representative role of the world is still very important, we have also gradually come to understand that the virtual environment is also a place and an arena. Its role must thus not always be purely symbolic or functional. Indeed, there is a long history of looking at computer technology in a very functional fashion (originally computers were used as mathematical tools), and interestingly, there has recently been a clear shift towards a view
according to which we carry out activities and spend time in different kinds of digital environments.

One of way of thinking of the graphical world, thus, is as a place, and as an interface to the work that the students have produced. Importantly, students produce a great deal of hypertext work, and this is a vital part of the project work. In this context, having relatively little creative building and just different ways of getting access to the information through the world would be satisfactory. The advantages of using a virtual place would mainly be that it facilitates a single interface to disparate materials produced by several individuals and that it brings together people from geographically distant places. These are important reasons for using virtual environments. There is a sense of presence that is very different from the experience when reading a paper, browsing a webpage or even chatting in a chat environment. In the case of the VW Project, we have also tried to make the world a creative arena of representation where students have been allowed to represent, present and enact their work. In some cases this has resulted in rather non-symbolic representation and simple graphical links, but in most cases, students have experimented with the medium. In a few cases, the creative and artistic potential of the medium is very obvious. There is also another aspect of creativity here. The students “created” their approach to the project; we gave them no essay titles or directions for their work.

In Figure 3, we see something that we will find in most cities, but much more rarely in academic papers: a recycling station.

![Figure 3 - Recycling station](image)

This is a small part of the city that Team North built (one of the groups which worked with the theme *The City*), and the idea is to represent the work that led up to the concepts that this student group eventually chose. Here we find dumped concepts (entertainment, communication, and the city as a trend-setter) and dumped hypertext paper ideas (the walkman and the friendliness of the stranger). Visitors are encouraged to recycle these ideas, and through clicking on the trashcans, we get to know why they did not work.

Figure 4 shows the waterfall that can be found at one end of the glass room in the student project in which the main theme is ‘indifference represented as a monster’ (project iteration:
The student creator has used the medium to create an effect and an experience. After having walked through the pavilion, with access to various papers and media, the visitor reaches a waterfall with a sign. It is not possible to see through the water, and we do not know what to expect on the other side. The whole setting with its music is very suggestive, and upon entering the waterfall, the user falls down into a narrow space. Basically the avatar is trapped there, the waterfall behind is not directly accessible because of the height difference, and in all other directions, the user is confronted with high walls plastered with photos of human monstrosity. On a sign there is some text about Plato’s gadfly and directions as to which keyboard keys will lead to freedom.

We have gradually come to understand the importance of encouraging the students to immerse themselves in the digital environment as early as possible, and while we have addressed this issue, we need to change and refine the setup. There is a certain threshold here, and we need to be clear about the importance of spending time in the world. We have devised early courses in both ActiveWorlds and web editing, but somehow, there is a risk that they become decontextualized (especially if students have to learn hypertext and write hypertext papers at the same time). It would probably be useful to arrange some of the weekly meetings with the supervisors in the world, and also to ensure that external participants are brought into the world as early as possible. There is also a distinct difference between simply being in the world and building, and as suggested above, we plan to encourage early building to a greater extent in future iterations. The world needs time to grow from their ideas, and they need to spend time in a world that they have not populated yet. With many student projects in the world there is also the question of relating to what other students created in earlier iterations.

Collaborative learning

There is a strong focus on collaborative learning in the project, and it is very likely that this is partly the reason why basically all students finish their projects. While working on the projects, students help each other with content as well as technology, and the various teams form rather strong social groups. Teams cooperate but there is also some sense of competition. As the degree of collaborative responsibility increases as the project progresses, there is also a stronger
pressure on the students not to lag behind, and to work with the rest of the team. Problems and gains are also “real” in a sense that many classroom-restricted exercises are not. There will be a real audience in the world for the final manifestation, and the group has to work together to succeed. Problems with team members must be solved. To some extent, the use of a virtual environment might lessen the tension in groups as categories of students (parents, workers etc.) who might not be able to turn up for all group meetings in physical space can meet in the virtual environment. Some people will then be in the laboratory while others will be at home.

**Reaching out**

One of the most obvious aspects of the VW Project is the wide national and international involvement in the project, and the importance of reaching out to other people. Being a student at an academic department does not always expose you to a great deal of external influence, and students seem to appreciate reaching out beyond the classroom and the department. Involving other people and exposing the work to a large potential audience have a considerable motivational effect, and is different from writing an essay that will be archived. In the case of the VW Project, the world is the archive.

The study trip that the two project leaders undertook in 1999 (which is well documented on the project web site) turned out to be important in several ways, and the network and ideas that we came across in the US have influenced the project greatly. Moreover, I think that it set the standard for the project in the sense that we found that there was a great deal of interest for the project and that people seemed to willing to take part in it. Since then the project has been presented a great many times, and there have been many national and international visitors in the world. A more detailed account of the dissemination of the project is presented in Appendix 3. The dissemination process has led to many ideas, discussions, criticism and new contacts. We have tried to feed these back to the project, and we have tried to let the students be part of this process. We think that it is important to let Swedish educational projects of this kind be known internationally, and it might be worth stressing that this particular project has attracted real international interest. In the introductory chapter of a new edited volume on language learning online (in print), Professor Uschi Felix (editor) presents an orchestrated vision of language learning, and says that “[t]his scenario describes ideal conditions which we rarely find in educational settings, although the Virtual Wedding project (see Svensson this volume) comes very close.” In a chapter in the same book, the project leader describes and evaluates the VW Project extensively, and that chapter (pre-print version) can be found in Appendix 4.

The fact that the project has largely taken place in HUMlab has been very important as HUMlab is an arena for interdisciplinary meetings.

![Figure 5 - HUMlab](image-url)
There have been many international and national visitors who have come to HUMlab to give a presentation who have also found themselves part of this ongoing project. For instance, Bruce Damer (authority on the development on virtual worlds and virtual events, writer and developer) and Galen Brandt (artist interested in virtual reality as a healing art) came to the laboratory in June 2000, and spent a great deal of time with the students. Bruce Damer has also come to most of the final manifestations (virtually).

Locally, we have worked together with the Department of Applied Physics and Electronics (Tillämpad fysik och elektronik), whose media engineering students have worked in the VW Project within the framework of a support training course. In 1999 and 2000, HUMlab ran several courses on virtual worlds together with the Department of Informatics, and these courses were also part of the project. There is now an informatics student writing a D essay (fourth term final paper) on the project. Per-Olof Ågren at the same department has been actively involved in the project, and has worked together with the project leader in publishing a few articles on the project. A student at the Department of Modern Languages wrote her teacher education degree assignment on the project, and a student at Bibliotekshögskolan in Borås has been working on representation in virtual environments (using the project as one example). There has been some cooperation with the Department of Education, and plans for future cooperation in the context of constructivist learning.

**Assessment and self-evaluation**

As was pointed out in the Introduction, Riner’s report plays an important role in the evaluation of the project. He bases most of his work on student and faculty interviews. He has also had access to student responses to the project that have been collected systematically over the three years. In this section, we will present a self-evaluation focused more on problematic areas and reflection than the previous, more descriptive sections.

**Integration of the sub-disciplines:** This was the main goal of the project as described in the application, and we have mainly attempted to bring about integration through a thematic approach, a structure which brings in the three sub-disciplines, and a common virtual arena. Having a theme and a space in which to work with that theme are important factors, of course, and asking students to write hypertext papers in the sub-disciplines as well as a combined paper creates a kind of basic structure. With respect to the hypertext papers, we experienced problems...
achieving a high level of analysis in the early stages of writing. This is a general problem, it seems, and students are also unused to carrying over knowledge from one area to another. There was ultimately a great deal of solid analytical writing in the project, of course, or students would not have passed. However, we feel that we need to encourage more complex linking between hypertext papers and between hypertext papers and the virtual world, and help students to get to grips with analytical writing (as opposed to descriptive writing). This could be achieved through the use of a case study at the very beginning of the project. The use of concepts as an organizing principle in the city iteration of the project was very successful, and seemed to promote integration and understanding. In future iterations we will probably work with concepts again. All in all, we have not been altogether successful in our attempts at integration, ten weeks probably being too short a time for students to both understand and implement an approach that had not previously been demanded of them. To really achieve integration we would need to start earlier in English studies. There is also the problem of assessing the level of holistic understanding, which is not only manifested in hypertext papers but also in the virtual arena and in the minds of the students. However, we need to develop the integration aspect further, and the IT component will be invaluable as it provides the “physical” space in which the integration can be realized.

Non-traditional representation, creativity and “play”: The project presents a very different kind of academic C essay, and one key concern in the project has been to allow students to experiment with new media and creative expression. Academic language teaching is very text-oriented, and generally speaking, there is very little use of pictorial and other non-textual elements in student work. This is true of much academic education and research (not least in the humanities). Hypertext is rarely used, and when it is used, the focus is often not on experimental use of the medium, but rather on distribution of “paper” papers. One of the problems we have faced in the project has had to do with the threshold that has to be crossed in adopting a new medium. Students have been fostered in the “traditional” paradigm, and early work is often characterized by being in the textual tradition. It takes time to disregard the tradition, and it is very important to encourage creative work and exploration of the possibilities that the medium offers. We require students to “play” and to explore. The threshold described here is one of the reasons why the final hypertext papers might not always be as “hypertextual” as we would have liked them to be. A rich set of links, interrelations, multi-medial material and context is needed to avoid fragmentation and “flat” hypertext work. The case study approach mentioned above might be one way of strengthening this aspect of the project. Another relevant point relates to the fact that the project is built on student creativity in relation to new technology rather than students as consumers of ready-made digital packages.

Assessment of student work: University teachers learn how to grade academic papers, and there are rarely any clearly formulated accepted standards for what is required in terms of analytical thinking and content. The formal requirements (number of pages, footnotes, bibliography, structure etc.) are much more explicit. We believe that one of the great benefits of the project is that it challenges the notion of what a C essay is. From the point of view of assessment, however, the situation changes and becomes more complicated. There is the hypertext component as well as the virtual representation, the presentation in the world, the collaborative work, and the integration of the sub-disciplines to take into account. We realized from the very beginning that this is an important point, and adopted a strategy which was articulated in the Student Guide, and which we have followed throughout. Here we say that the gathering and analyses of the material as presented in the hypertext papers will form the basis for assessing grades. The relevance of the virtual manifestation will also be important. Other
aspects taken into consideration are the ability to work in a group and meet responsibilities, and how well students have tried to use the new media (bearing in mind each student’s starting-point). The emphasis is on what students have attempted to do and the process students experience. We also point out that “as we are going to work closely together with you and as we are going to have weekly meetings and discussions we believe that we will get a fair picture of your work.”

Conclusion

Finally, we would like to return to the learning experience that the project leaders have experienced, and how rewarding it has been to work with students in the project. The senior member of the project team, who has been working with educational technology for 25 years, says that this is about the only time it has actually worked, and where technology has been used not to do digitally the same thing as we do outside the computer. Naturally, there are many things concerning the project that need rethinking and new approaches, but there is no doubt that the project will continue to be run by the department. Planned changes include an alumni organization, an initial case study, earlier immersion in the world, and more encouragement of artistic expression. We are also planning a somewhat similar project where Cyberspace will function as multicultural and multidisciplinary arena (together with several other departments and faculties). In both these projects we will make us the emergent phenomenon “blogging” for student diaries, online presence and networking.

There is local as well as national and international support for the project, and in an increasingly economized educational system, there is also a financial aspect to the project. Students who take part in the project finish their C essays in contrast to pass ratios from about 50% for regular students. The project is also interesting in the sense that facilitates pooling of resources. Several supervisors who work together with a group of students achieve better results than the traditional one-on-one paradigm. Needless to say, this project represents only one way of experimenting with digital arenas for learning, thematic approaches and student creativity, but having done that, we feel that we have taken responsibility for what we feel is one of the most important tasks for modern university education: allowing for more experimental learning situation, accommodating new media in non-traditional ways and giving students the right to create their own representations.
Dissemination of the Virtual Wedding Project 1999-2002

A) Newspaper and magazine articles


B) Presentations, seminars and lectures

The following list includes presentations, seminars, lectures and conference presentations. In addition, the project has been presented a great many times in various HUMlab contexts, and has thus been disseminated more widely than the list indicates. Many of the presentations in HUMlab have been for national bodies of different kinds (e.g. Utbildningsutskottet and Nätuniversitetet). Unless otherwise stated, the presentations have been carried out by the project leader.

1999


2000


[17] Apr 27. Short presentation of the project for Telia.


2001


2002


[28] Apr 2. Presentation of HUMlab and the project at Information Arts, San Francisco State University.


[34] **Nov 26.** Creating virtual arenas for language learning: shared graphical spaces, student creativity and co-evolution. Seminar at Open University, England.

**C) Articles and chapters**


**D) Student papers**