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RESEARCH PLAN

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DESIGN FOR COLLABORATIVE LEARNING AND CREATION OF PARTICIPATORY MEDIA THROUGH VISUAL NARRATIVE CONSTRUCTION

Abstract

The doctoral thesis deals with design for collaborative learning and creation of participatory media through visual narrative construction. I base my thinking on CSCL (Computer Supported Collaborative Learning), social constructivism, communication studies in relation to audience participation and identity construction, narrative psychology and visual communication. My study attempts to encourage active people's involvement in questioning and creation of participatory media rather than passive consumption of traditional media. I will design, develop and test some new media tools in order to explore how narrative co-construction and participatory storytelling could be used in formal and non-formal education contexts. I would like to explore if collaborative narrative approach helps to situate learning and if portable and mobile devices could be of some use helping to achieve situatedness of student's experiences and activities. I will focus on visual expression and investigate how narrative can be employed to overcome complexity in interpretation of visual thinking. I am also interested to research whether affective value of collaborative visual narrative co-construction has positive influence in students' motivation and active engagement in to learning process. I base my work on experience with design for web based collaborative environments (such as Fle3 learning system) that we have been developing in Learning Environments research group in Media Lab UIAH as a starting point. I intend to design, develop and test tools specifically for participatory media creation and collaborative co-construction of visual narrative. I am using action research method: conducting several cycles of "interventions" in real communities in order to get user feedback and develop collaborative visual narrative tools further. My main goal is to design tools and methods for collaborative narrative construction that would be reusable in different formal and informal learning contexts.

1. Motivation / Background

Personal motivation

Almost three years ago I joined the Learning Environments for Progressive Inquiry research group in Media Lab[1] and got deeply involved in design for Computer Supported Collaborative Learning (CSCL). As my final work[2] in the Master's of Arts program I made the User Interface design for the Fle3 web based learning environment[3] that was built on progressive inquiry pedagogical model and ideas provided by pedagogical partner researchers (Leinonen, Kligyte et al 2003). My most important goal was to help the users to understand the underlying pedagogy through the design of the system and support the teachers/tutors in directing student interactions towards more desirable learning goals.

At the same time our research group participated in ITCOLE (Innovative Technologies for Collaborative Learning) European project[4] that was initiated to draw theoretical research in CSCL, technology and school practices closer to each other. The project brought together different organizations and working practices, people with various backgrounds, interests and expectations to one multidisciplinary and multinational project in order to develop a Pan-European CSCL system (Rubens et al 2003). Trying to find a common ground and shared understanding among different partners in the project was a challenge and a very valuable experience. Through the teacher participants in the project I learned about the ways CSCL systems are actually used in different school environments in different countries.

During the first year of my doctoral studies I have further explored the theoretical field of study, was involved in several projects in the Learning Environments group and focused my interest more towards people's agency and participation, communication, creative processes and identity construction within groups (communities) using web based digital tools for collaboration, rather than concentrating on CSCL in purely educational context.

Theoretical background

A big part of theoretical grounding for my thinking comes from **CSCL** research. At a very general level, the CSCL interest lies on how collaborative learning supported by advanced computer tools can improve knowledge production, interaction, distribution and sharing of expertise in peer learning communities. (Lipponen 2001). The CSCL field has been influenced greatly by Vygotsky's **social constructivism** ideas and his emphasis on the critical importance of culture and the social context for cognitive development[5]. According to social constructivists, learning is participation in social construction of knowledge rather than an individual effort. This is why learning and knowledge in CSCL are defined as constantly evolving process of negotiation of meaning (Wenger, 1998) with other people in the same socio-cultural environment. According to CSCL learning happens through raising up simple ideas, enriching them with new discoveries and facts, reviewing, evaluating and acquiring more complex understanding of issues. (Scardamalia & Bereiter, 1999)

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[1] Learning Environments for Progressive Inquiry research group in Media Lab UIAH
http://www.mlab.uiah.fi/7research/73.html
[2] I Think I Know What Is Good for You: User Interface Design for a CSCL system
http://www.uiah.fi/~gkligyte/Fle3/final.pdf
[3] Fle3 Learning Environment
http://fle3.uiah.fi
[4] ITCOLE (Innovative Technologies for Collaborative Learning) project:
www.euro-cscl.org
[5] Overview of Social Constructivist theories by Irene Chen, University of Houston
http://pdts.uh.edu/~ichen/ebook/ET-IT/social.htm

One of the interests in my research is people's agency and active creation of participatory media using new media tools in contrast with passive consumption of traditional media. My aim is to design some digital tools for communication in groups and collaborative creative activities through construction of narrative. Related to that, another relevant study area for my research is **technologically mediated communication** and traditional **communication studies** related to audience participation and identity construction. Talking about audience inactivity, for example, Habermas has expressed disappointment with the public media that has become a channel for one-way transmission instead of functioning as a public sphere and hosting public debates (Habermas 1991). Some researchers in traditional communication studies have addressed this question with proposals to create dialogical media space that would invite the audience for evaluation and response. In one of his articles Glasser points out the reviving power of storytelling in journalism and claims that narrative is a way to avoid incomprehensible abstraction of facts, because stories enable us to share our experiences and imaginatively interpret experiences of others (Glasser 1991). Through telling stories, picking out certain details in the sequence of events we reflect them in the light of our personal experience and in this way put some order in otherwise chaotic world. According to some researchers the most remarkable thing about storytelling is that it enables us to share our experiences with others transforming private experiences to commonly owned ones (Arendt 1990). More than that – storytelling has a potential to help us to become more aware about our realities, imagine new ones and in this way bring about better and more desirable realities. According to Arendt, even stories that tell "what happened" hold a potential for change. Similar views are propagated by **narrative psychology**: humans deal with experiences by constructing stories and listening to the stories of others. The basic idea is that different minds in the same socio-cultural environments make different meanings and build different realities through telling stories (Gergen 1998). By telling the stories about our past, we can construct new realities.

Another important field on which I base my thinking is **visual communication** in relation to human reasoning. Historically human communication has been putting emphasis on language-based communication and human reasoning based on verbal structures was seen as fundamentally different and superior in relation to perception. (Arnheim 1986) However, there have been a lot of studies done about the role of visual perception as a serious cognitive effort having to do with processes of generalization, categorizing, abstraction and memory. It has been noted that even more demanding cognitive task is visual expression. (Arnheim 1969). Words and language (especially written language) are made of small elements that are assembled together to make meaning. In contrast to that, image has the quality of accommodating millions of simultaneous relations among its parts. We perceive and understand an image at one glance and we can also analyze the details by concentrating on different parts and in this way create a linear story or certain interpretation of the spatial structure. My aim is to explore how design of new media tools for group collaboration could support people's visual expression together with verbal narratives in order to create a synergy of image and language in a way that none of them would be undermining or serving each other.

2. Meaning/Significance

Today the CSCL is becoming an increasingly important strategy in European educational policy. The need to use technology in western society's everyday life naturally requires changes in educational practices. Studies in CSCL reflect the concern about future generations ability to adapt in highly demanding and constantly changing environment: rapid changes in the world pose new challenges and require new skills from people every day, knowledge and information gets outdated fast and no skills or professions can guarantee stable life in the future. (Lipponen 2001). It has been widely recognized that future education has to be based on openness, creativity and interdisciplinarity. In order to develop people's ability to use the knowledge in real life situations the education has to be integrated in a larger ethical, cultural and social context. The future education should facilitate people developing curiosity, creativity, ability to adapt, "learning how

to learn" and "life-long learning" skills that are essential in our contemporary society. In this context I develop my research claims that respond to apparent needs in current educational practices.

The affective aspect of my study attempts to encourage people's active involvement in questioning and creation of participatory media rather than passive consumption of traditional media. The participative approach frees people to employ socially positive potential of media and empowers them. Creativity and community-building are crucial in the context of European integration process that attempts to include its diverse communities and still to maintain the differences. I will address this challenge proposing some innovative methods of education together with specific shared collaboration and participatory media creation tools to be designed and developed during my study.

3. Claims/Needs/Hypothesis

- *Collaborative narrative construction could support groups engaging in creative activities related to humanities, arts and non-formal education.*

Traditionally CSCL research has been focusing on learning natural sciences - the collaboration aspect proved to be extremely important in correcting misconceptions related to scientific knowledge and increasing understanding of the subject. Besides natural sciences the collaborative learning methods are appreciated in other human knowledge fields related to abstract, conceptual and analytical thinking: philosophy, politics, etc. There it inherits the model of academic scientific communities where members of academic circles foster each other's research by sharing their own study findings.

Narrative, on the other hand, has been promoted and used as a method of learning in order to encourage students' creative thinking rather than analytical reasoning, for example, in teaching literature, history, etc. "Constructing stories in the mind – or storying, as it has been called is one of the most fundamental means of meaning-making; as such it is an activity that pervades all aspects of learning." (Wells 1986). Studies of personal identity construction show that narrative approach is essential in identity and values formation process as well as understanding and interpreting the existing cultural environment (Bers 2001). However, narrative has been often seen as essentially personal construction and has rarely been employed in collaborative settings. My objective is to explore the possibilities to merge good parts of both approaches and to develop methods and design tools for supporting collaborative narrative construction in learning humanities, arts in formal and non-formal education contexts.

- *Employing new media tools for collaborative construction of narrative could be the way to encourage participation, situate learning and help to deal with inert knowledge.*

Although I base my thinking on social constructivist ideas that knowledge is not contained in a single person's mind, but rather is distributed socially, in formal educational contexts the problem of, so called, inert knowledge (abstract knowledge that a person has memorized, but can not relate and use in everyday life) is still very persistent. As a reaction to that, situated learning proponents, such as Roschelle, state that the knowledge can not be taught in abstract, it should be taught in context and actively doing something related to the subject (Roschelle, 1995).

My claim is that using new media tools for collaborative construction of narrative could be a way to situate learning. According to narrative psychology theories "human activity and experience are filled with "meaning" and stories, rather than logical arguments or lawful formulations, are the vehicle by which that meaning is communicated."[6] (Bruner, J. 1996). Narrative is essential in meaning-making, we understand the world around us through sharing stories with others. Narrative is always positioned in some context and usually reflects some personal experience that takes shape and becomes meaningful through telling the story to others. In this way constructing a narrative together with other people around some subject matter could be a way to contextualize the subject in question, achieve active involvement of students and help them to make stronger connections to their actual living environment. New media technologies offer several interesting

possibilities, such as ubiquitous computing, portable devices, mobile technologies that could be utilized in interesting ways to achieve situated learning independent from formal educational settings. Small and portable new media tools can be very helpful in situating and employing physically and socially distributed cognition (used for example, when going to a museum, library or forest, visiting an expert, etc).

- *Using visual means and artifacts in collaborative narrative construction encourages active interpretation and meaning-making activities. It also helps to establish common ground and reach shared understanding in the group.*

As it has been stated in my theoretical background description, visual perception is an important part of human reasoning that is deeply interconnected with verbal reasoning. However, visual literacy is not explicitly taught in schools. We acquire visual perception and interpretation skills through development and experience rather than training. Visual communication is a fuzzy and culturally bound field - there's no conventional system for assigning meanings for arbitrary visual symbols. This suggests that "visual information is subject to more active personal interpretation - more so than with language." (Moriarty 1994) In that way, using visual means in collaborative narrative construction may encourage active interpretation and meaning-making activities by students. Expressing stories and ideas visually requires people to utilize their ability to summarize and communicate in a very concise way: remove unnecessary information, categorize details, generalize information and express it in a visual way. The possibility to compare and match student's own ideas and "mental models" with other people's visual thinking helps to develop a common ground in the group and through negotiation reach shared understanding of the subject.

- *Narrative approach helps to deal with complexity and "fuzziness" of visual thinking.*

Visual expression is very powerful tool of abstracting and making "mental models" visible for others. Self-taught visual skills are enough to make sense of the world around us, but guidance is essential if we want to learn to produce visual messages understandable for others. My claim is that narrative approach would help to deal with complexity in representation and interpretation of visual signs and concepts. According to Moriarty, visual perception system deals with the elements of image simultaneously, while verbal reasoning operates in sequence (Moriarty 1994). My claim is that since perceptual and cognitive processes are so interwoven, verbal and visual reasoning processes may as well happen simultaneously and complement each other.

- *Participatory media creation using new media tools may have emancipatory effect*

The mass media emphasizes the representative order of society: for ordinary people it is much more common to be spoken about than to speak for themselves in the media. (Heikkilä 2000). My claim is that by encouraging group interaction, focusing on participatory aspects of media creation and storytelling, it is possible to foster deeper connection and meaning-making processes in the group as well as sustain their sense of empowerment in the context of wider society. New media tools (especially Internet) may be used for crossing the threshold to reach publicity (walking around traditional mass media institutions such as press or tv). This kind of approach would create conditions for "small" people also to be the subjects and authors of the stories rather than objects to be represented or resources to be used in media. That is why in my study I would like to explore the aspects of empowerment and emancipation supported by creation of collaborative storytelling and participatory media.

4. Approach/Methods

During the doctoral studies my aim is to design and develop new media tools and methodology for collaborative visual narrative construction to be introduced and tested in the social context (formal or non-formal learning settings). The aim of my study is to create and explore the context for groups of people to reflect upon their experiences, create visually expressive stories together (or share stories with others) and make their experiences communal. The new media tools will

enable people to create their own participatory media: tell and share stories with a focus on visual expression.

I intend to use my knowledge in web application design (particularly Fle3 learning environment) and Internet as a base platform in order to create new tools specifically designed for visual narrative co-construction in groups. However, I also plan to look into possibilities how small and mobile devices could enhance collaborative storytelling activities through adding pervasiveness and situatedness dimensions to the experience. The portable devices will be used as an integral part of the system, I do not plan to develop applications specifically for that.

The innovation in my study is not particularly technological, but rather in creating conditions of technology use in meaningful ways in appropriate contexts. My approach goes in line with the scope of Learning Environments research group: having strong theoretical grounding and being design oriented. Another important focus of our research group that I would like to continue with is promoting awareness about usability and accessibility issues, using cheap and available technology and designing new services, possibilities and conditions for facilitating people's collaborative activities in groups.

In this study I will use the action research approach: perform several experiments with groups of people during different stages of tools development and use the user feedback in further design and development of the tool (Stringer 1996). At the same time I intend to collect ethnographic data through observations and people's activity in the collaborative narrative system. I will conduct interviews in order to collect participants' personal reflections on the creative process and will use qualitative analysis methods to evaluate the results. Currently I have started initial preparations for a small-scale project involving ethnic minority groups in Finland.

In the actual "interventions" I intend to use two approaches:
- Participatory media creation through visual and verbal means (aiming to collaboratively construct shared artifacts).
- Participatory media creation based on visual clues (collaborative interpretation of artifacts, constructing shared meaning in the group)

5. Goals
- to design and develop tools and methods for collaborative narrative construction with the focus on visual expression
- to look into the ways portable devices could be used to support situatedness of creation of participatory media
- to investigate the conditions for collaborative narrative to emerge: what are the rules that need to be set in advance and how they could be executed during the collaboration. How the design of the system could support collaborative construction of narrative and what tools would a tutor need?
- to explore how visual means could enhance narrative construction in collaborative learning
- to explore the aspects of empowerment and emancipation supported by creation of collaborative storytelling and participatory media
- to look into the ways the design of the system could support group motivation, responsibility, feeling of belonging to community and trigger creativity
- to explore how collaborative narrative approach would encourage intercultural understanding and social integration.

6. Supervision and research community

My doctoral studies take place in Media Lab department in University of Art and Design Helsinki.

My research plan is based on my previous experience and knowledge that I acquired in Learning Environments for Progressive Inquiry research group through participation in projects such as ITCOLE (EU-IST 2001-2003), the Fle3 learning environment development, Unesco Young Digital Creators programme, etc. The colleagues from the research group provide constant support and help in evaluating conceptual ideas, also there's a lot of technological know-how in the group. My study is done in the context of the work done by our research group and project partners in other universities in Finland and abroad. The research group is funded by external research and development projects found and proposed by the group for such funding sources as Tekes, EU-IST and UNESCO.

In the spring 2003 I was accepted to a 'status' (unfunded) position in Graduate School of Multidisciplinary Research on Learning Environments (Oppimisympäristöjen monitieteinen tutkijakoulu) in University of Turku. The research school supports my studies through courses and community of peer colleagues working in the same field and facing similar kind of challenges in the multidisciplinary field of learning environments.

7. Schedule

I was accepted to do my doctoral studies from the beginning of January 2003. However, my focused study endeavor started from the May 2003 when I received Finnish Cultural Foundation scholarship for one year.

1st year (currently ongoing)
Getting familiar with studies and literature relevant for my research in areas such as CSCL, narrative studies, narrative psychology, communication studies and visual communication. Taking several courses in relevant study areas, writing some articles (follow up after MA studies and position statement type of articles), participating in 3 doctoral seminars and 3 conferences. Participating in some projects in Learning Environment research group, planning several new projects within the group. Planning future projects involving "real" communities (for example, the groups of ethnic minorities in Finland) and specifying research methodologies for collecting data. Performing initial interviews with the future project participants, planning how to take into account their expectations and design ideas.

2nd year
Performing several small-scale "interventions" in actual communities, designing and developing the tools specifically for participatory media and collaborative visual narrative creation based on feedback from the project participants. Reviewing and adjusting research methods based on experience from the field testing. Publications of work in progress in journals, seminars, workshops and conferences.

3rd year
More "interventions" with new media tools (particularly with portable devices), collecting data through observation and interviews, evaluation of findings. Publications in journals, seminars and conferences. Starting to write the thesis.

4th year
Writing the thesis.

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