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MEDIA ETHNOGRAPHIC METHODS TARGETING STUDENTS IN A TECHNICAL EDUCATION (MEDIALOLOGY)

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Abstract

This paper investigates the process of designing, executing and evaluating a Bachelor “soft” skills based course, Media Ethnographic Methods targeting students in a technical education (Medialogy). The course was designed as a creative workshop encouraging innovation, group dynamics and participation. The multimodal form of examination facilitated different logics of presentation and discussion. In the examination, 80 percentages of the students were able to discuss and reflect upon theories and methods. It was important to link the new theories and methods, which can be fuzzy, in framing activities together with something technical that the students know and are interested in.

Keywords: Media ethnographic method, education, students

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1. Introduction

As in many other universities new programmes are designed at Aalborg University combining engineering and science with humanities and social science. As an example, the *Medialogy* programme is a new education where technologies and media in creative and interdisciplinary ways are intertwined. Students work with information technologies (digital media) and their interactions with sound, pictures, virtual reality etc. in different possible applications and always with the user in mind (Nordahl & Kofoed, 2009). In the past engineering educations have focused on imparting of “hard” or technical skills, which include technical or administrative procedures related to an organisation’s core business like machine operation and safety standards and procedures (Coates, 2006). However, increasing business complexity has shifted focus to coordination and communication; thus employers are putting more weight on “soft” skills. Globalisation demands universities to produce engineers who can possess expert knowledge and think in terms of international, technical, social and financial relationships (Hopp, 2000) and equipped with skills to easily cross national and cultural requirements.

The Medialogy course *Media Ethnographic Methods* (MEM) is a so-called “soft” course and focuses on the areas of psychology and ethnographic methods in relation to media. The course, which is part of the curriculum for the sixth semester Medialogy B. Sc. programme, has been carried out and continuously been developed during a period of four years. The implementation challenges have mainly been related to developing an attractive and inspiring course format and content that the students would find interesting and motivating.

Many of the students find that the technical areas of media technologies are the most important, and that all the so-called “soft” courses are not necessary. Included in this, was the question on how to establish a learning environment supporting the complexity of addressing “soft” and human values as crucial aspects of future engineering practices. It is a risk that interdisciplinary educations implement parallel tracks of “hard” and “soft” subjects rather than integrate the two sides of the coin (Nordahl & Busk Kofoed, 2012). Another challenge was to find a meaningful examination procedure where both theoretical, methodical and practical angles of the course could be included.

Many authors have written about the development of soft skills in engineering tuition (Falade, 2006; Pulko & Parikh, 2003). Whitmore and Fry (1974) defined soft skills as important job-related skills that involve little or no interaction with machines and whose application on the job is quite generalised. Soft skills that complement hard skills fulfill an important role in shaping an individual’s readiness for future work life requirements (Schulz, 2008).

Furthermore, the integration of soft and hard skills offer opportunities for original and creative ideas based on knowledge of the social and cultural context to which future engineering tasks apply. Different studies have presented definitions and classifications of soft skills (Ceylan, 2006; Nair & Patil, 2008; Noguez & Espinosa, 2004; Shakir, 2009; Ziegler, 2007).

These studies include soft skills such as teamwork, leadership, responsibility, self-directed learning, project management, planning, negotiation, oral communication, interpersonal skills, written communication, creativity, ability to apply knowledge in the workspace, capacity to learn new skills, critical thinking, problem solving, lifelong learning, information management and entrepreneurship.

According to Pulko and Samir (2003) and Coates (2006), soft skills include emotional intelligence, critical thinking, giving feedback and problem solving, report writing and presentation, project and team management. Emotional intelligence involves the accurate appraisal and expression of emotions in oneself and regulation in a way that enhances life by being able to consensually recognise emotional qualities of objects in the environment (Mayer et al., 1990). Poskey (2011) defined emotional intelligence as a set of competencies demonstrating the ability a person has to recognise his or her behaviours, moods and impulses and to manage them according to a specific situation. The elements of emotional intelligence include social competencies, social skills and personal competencies.

2. Problem Statement

Generally, related work suggests that soft skills are not sufficiently acknowledged in engineering higher studies, this also includes computer engineering (González-Morales, Moreno de Antonio & Roda García, 2010). González-Morales et al. (2010) particularly emphasise a lack of hands-on experience in professional development, which also is supported by the *Leuven Communiqué* from 2009 (The Bologna process – Towards the European Higher Education Area: http://ec.europa.eu/education/higher-education/doc1290_en.htm), where the Ministers underline objectives such as social dimension, student employability, lifelong learning and a global context, to be covered in the higher education.

Computer engineering, IEEE (2004) and ACM (2006) offer guidelines, principles and recommendations with a special emphasis on the critical need to combine so-called “hard” computer science foundational skills with organisational, social, collaborative, teamwork, communication and project based “soft” skills. The above-mentioned related work shows a growing interest to include soft skills in higher education programmes. Shakir (2009) present

different approaches to the inclusion of soft skills in higher education programmes, for example, (i) as an exclusive subject; (ii) by embedding soft skills in existing courses; and (iii) to develop soft skills support programmes.

González-Morales et al. (2010) presents a study from University of La Laguna, where they have developed a Bachelor degree programme in Computer Engineering emphasising that personal and social skills are critical for the future professional practice. They have included subjects that are exclusively focused on the development of soft skills in terms of emotional intelligence. In order to do so, they applied a project based learning approach, where the students work in groups of four to five participants. The project are formulated at the start of the academic year and during its lifecycle the students develop a real product for a real client, which is delivered when the project is completed.

To our knowledge, few studies report on how such soft skills in higher education programmes can be assessed. Within the Bachelor degree programme in Computer Engineering at La Laguna University, the assessment is based on formal technical reviews of prototypes created within project work and produced during a project life cycle (González-Morales et al., 2010).

Furthermore, the authors underlining that this educational alternative confirms that the students achieve higher performances compared to previously when a more traditional approach to the computer engineering education was applied (i.e. focusing on solely hard fundamental skills), and the students are better prepared to enter the engineering profession. A key factor in González-Morales' (2010) study was the increased motivation exhibited by the students.

3. Research Questions

The study particularly focused on the following questions:

- i. how can a learning environment be designed to support the complexity of addressing “soft” and human values as crucial aspects of future engineering practices?
- ii. how can a meaningful examination procedure be designed, where both theoretical, methodical and practical angels of the course are included?

4. Purpose of the Study

In this paper, we investigate the process of designing, executing and evaluating a sixth semester soft skills based course, *Media Ethnographic Methods* (MEM) targeting students in a technical education (Medialogy). The course has been evaluated and adapted during a period

of four years, including more than 300 students, to better fit the crucial interdisciplinary character of the Medialogy education and the “soft” character of the MEM course, including psychology and ethnographic methods in relation to media technologies. Particularly, the paper examines the resources involved in creating meaningful and creative teaching and learning situations fostering the students’ interest, motivation and skills in applying their gained knowledge in practical and scientific ways.

This is based on our experiences (based on student feedback) that many students, contradictory to the Bologna process and other international recommendations (The Bologna process – Towards the European Higher Education Area:

http://ec.europa.eu/education/higher-education/doc1290_en.htm; IEEE, 2004; ACM, 2006) as well as González-Morales et al. (2010), find the soft content not so necessary and, thereby, not so motivating. Rather they consider the media technical courses (hard skills) as more crucial for their future work life. The review of related work has identified a lack of knowledge when it comes to the integration of soft and hard skills related to psychological, sociological and cultural implications of the use and implementation of technology in different practices.

5. Research Methods

The study is based on a case study including four years of continuous development and improvement of the *Media Ethnographic Methods (MEM)* course. The study is based on situated class- and group room observations, performance assessment and document studies. Analyses of the students’ work samples in the form of written and visual materials, was carried out at several points during the course module. Furthermore, examination results (in written, visual and oral forms) were analysed in relation to the specific study plan. More than 300 students have.

6. Findings

In this chapter the background pedagogical principles and didactical considerations are described as well as Media Ethnographic Methods course development and content. Furthermore, the examination assignments and the assessment procedures are discussed.

6.1. Pedagogical principles and didactical considerations

Problem Based and project organized Learning (PBL) is the pedagogical approach for all educations at Aalborg University, so we decided that the course should have the same pedagogical strategy.

The specific features of the PBL method that was applied in this study included a course design where a student chosen and defined problem (case) was at the centre for investigation. The problem area (or case) was broadly framed (by the course leaders) and included media psychology and media ethnographic features related to the use of media technology targeting “work-practice-like” assignments including both theoretical, methodological and practical angles. Furthermore, the students had to make a project and work in groups. Learning in university education is not just about acquiring knowledge, but also about the way students handle that knowledge through a sequence of activities; the learning process.

Dewey (1916/2005) addressed this question by stating that education should offer a generic understanding of how knowledge is created. Through hands-on activities students were offered opportunities to create generic skills possible to transfer to different conditions and situations. Dewey (1966) is aware that there is always a danger when teaching remotes from everyday life and thereby becoming technical and artificial.

Finally, students had to use previous learned professional knowledge (for example, related to digital games) and apply this with new knowledge from their MEM course in their problem solution. Accordingly, this study takes into account students’ prior knowledge and interests. This is to reinforce enjoyable and inspirational experiences. Having enjoyable experiences means being engaged, this, for example, can be achieved through offering the participants opportunities for choices of action (Brooks & Rosenørn, 2012).

This kind of interest can be characterised as persuasive and associated with increased knowledge and desire to learn more (Krapp, Hidi, & Renninger, 1992). Dewey (1913) emphasises the importance of individual interest in learning situations characterised by having high personal meaning. In this sense, the learning environment related to the MEM course is designed so as to offer different resources for teaching and learning or, in other words, modes of expression in the form of writing, speech, and visuals.

To address hands-on activities a design thinking approach (Löwgren & Stolterman, 2004) was applied as a complement to the PBL organisation of the course in order to transform the learning environment to a creative practice. In this way, we consider the classroom setting as a design-like practice, which, in line with Schön (1987), is “learnable” but not “teachable” (p. 157). This is to say that learning-by-doing (Dewey, 1916/2005) was a core feature of the pedagogical design. This is to create informal conditions for creativity and innovation in learning situations that normally have a formal lecture format (Arminen, 2005). The way we approached this design-like, or creative practice, included offering the students a complexity of resources and phenomenon that potentially could become inspirational and assist the students in the learning process. Whether or not they did so, were depending on the students’

interest, which directed their attention in specific learning situations (initiated through different assignment - see below for further details). Kress (2010) emphasises that such attention frames a specific aspect of a learning environment. Therefore, the characteristics of the resources provided for inspiration frame the basis on which the participant engage and interpret creative learning situations.

What can be regarded as creative actions and creative practices? Creativity has been a topic of interest and a number of perspectives have emerged from the scientific study of the subject. Creativity is, on the one hand, defined from the perspective of creative cognition (Finke, Ward, & Smith, 1992) where creativity is regarded as cognitive, or mental, processes and structures contributing to creative actions (such as conceptual interpretation, hypothesis testing and searching for limitations).

On the other hand, creativity can be considered as a socio-cultural process where social transactions are at the core of creativity (Bennis & Biederman, 1997; John-Steiner, 2000; Vygotsky, 1998), where creative actions emerge from collaborative work emphasising the social dimension of creativity. Here, creativity is based on experience and interest where interaction between people and a socio-cultural context is fundamental.

In our use, creative actions and practices are directed to design activities and how the students, through the use of available resources, produce representations and realisations of his or her specific interest. This is in line with Kress (2010) and Schön (1987), who define design as closely related to communication and meaning, where the individual participates in the shaping of the social world. In this way, design, in the form of creative actions, is prospective, looking forward by focusing on the process and the participant's interests here and now and in relation to future effects of his or her actions. In this sense, the agency of individuals becomes crucial (Kress, 2010).

Considering the importance of interest, agency and choice of design actions for making representations and meaning of the specific MEM course content, we expected that a multimodal approach would have positive impact on the students' engagement and inspiration as it offers a more diverse practice where each modality has its own specific characteristics (Lemmelä, 2008). Each modality offers a certain materiality and affordances and as such it offers potentials and imposes limitations of what can become criterial. By offering the students different choices (modes) for representation (writing, image, speech), we created a learning environment that was multimodal and it is within such an environment the processes of representation and realisation has to be understood. Learning processes constitute acts of meaning making (Kress, 2010), where linking of activities and actions becomes central, for example, linking written material to images or vice versa. We expected that a multimodal

approach where linking of actions and different modes are in the foreground, should reinforce the students' engagement and interest for the activities included in the MEM course. In this way, the students had options to become participants as “doers” and involved in meaning making activities. The representations produced by the students are considered as signs of learning; a result of actions and a remake of inner transformative actions.

6.2. Course development and content

In order to address the inherent challenges outlined above, the ambition was to inspire the students to work with a complex theoretical area such as media psychology in an interdisciplinary and practical hands-on manner. Throughout the course the students should get enough methodological knowledge about ethnographic methods, particularly focusing on video ethnographic methods, so they know how to use it, create a material product showing how they have applied their knowledge from the MEM course. The course is described in the study regulation (Medialogy Studyguide, 2008, http://www.esn.aau.dk/fileadmin/esn/Studieordning/G_Bsc_Medialogi.pdf) and the aim of the course is: “to enable the student to: Acquire skills so as to choose and analyze the need of the end-user, and to acquire knowledge of the psychological impact on a chosen end-user when using specific media” (p. 26). The objectives are the following. By the examination the student shall be able to:

- **Apply** methods for empirical investigations of media-reception
- **Evaluate** media text in relation to end-user groups and lifestyle
- **Analyze** micro-psychological considerations of media content and the enduser group's use of media
- **Apply** theories and methods from psychology and ethnography for analysis of the impact of media” (p. 26)

The workload of the course is 3 ECTS and the assessment guideline outlined in the study guide includes that each student should be given a pass/not pass grade.

The course is planned as a three day workshop, and the structure of each day includes: (i) theoretical input in the morning; (ii) assignment of the day; (iii) group work with supervision; (iv) and by the end of the day joint presentation of results – and maybe more group work.

During the workshop each group has to set up a detailed test/evaluation scenario (based on ethnographic methods) related to the case(s) the group has chosen to work with and, based

on the findings from the test/evaluation, apply relevant psychological theories in order to understand and discuss the findings. In order to relate the ethnographic methods and psychological theories to media technology and to the students' prior knowledge and interests, each group has to choose a game for their case. This game constitutes the basis for the test/evaluation situation, where the students create their test/evaluation scenario on a gameplay situation and analyses this in accordance with their chosen problem. Furthermore, each workshop day has an assignment which the group can use as part of their final examination.

Based on the above-mentioned course framework, the concrete purpose of the MEM course during the spring 2012 was:

- To combine a case (cases) with the use of visual ethnographic methods and relevant media psychological theories.
- Relevant literature was given prior to the course and extra literature was handed out related to the discussions from each day and based on the groups' specific needs.

The content for each of the three days were framed by the focus on: (i) video ethnographic methods, (ii) that the test/evaluation should be based on a chosen digital gameplay situation, (iii) and the analysis should include relevant psychological theories. Based on this, each day was linked to each other, which is to say that each day progressed on the theoretical, methodological and practical content from the previous day. Table 1 describes the course content, day-by-day, given to the students detailing theoretical, methodological and practical content.

Table 1. Hand-out to the students specifying the course content day-by-day

Workshop day 1	Workshop day 2	Workshop day 3
<i>Theoretical and methodological introduction:</i>	<i>Theoretical and methodological introduction:</i>	<i>Theoretical and methodological introduction:</i>
<ul style="list-style-type: none"> • Ethnography and user-centred design - matters of context. • Digital games and activity theory. 	<ul style="list-style-type: none"> • Making sense - Interpreting photographic and video materials. • Interaction Analysis and Conversation Analysis • Introduction to editing. • Motivation and engagement. 	<ul style="list-style-type: none"> • The psychology of emotions and social interaction.
<i>Practical assignment:</i>	<i>Practical assignment:</i>	<i>Practical assignment:</i>

Workshop day 1	Workshop day 2	Workshop day 3
<ul style="list-style-type: none"> -Choose a digital game as a case for analysis. -Decide which elements in the gameplay that should be the analytical focus. -Organise a test of the game when a person is playing (10 minutes). -Document the organisation of the study (including planning of the setup, such as camera-soundplace-light and what methods to be used - minimum two methods). Organise a situated interview related to the gameplay situation. 	<ul style="list-style-type: none"> -Finish video recording of gameplay activity observation. -Finish a situated interview based on the gameplay activity. -Choose focus of analysis. When relevant, use Conversation Analysis (CA) techniques to analyse the interviews and/or what is expressed in the video recording. -Consider how to use theory. -Analyse based on the chosen foci and initiate the consideration of theoretical possibilities (identify key words, concepts....). -Do not start any editing procedure - the outcome of the discussion will form a foundation for the editing process. 	<ul style="list-style-type: none"> -Analyse 2 minutes each of the gameplay observation and interviews. -Depending on the observation, the focus may be more on the body motion in this analysis - but include possible analysis of speech related to the body motion as well. -Use the techniques from Workshop day 2 and 3 and include excerpts from the transcripts, which should be attached to the final group paper as appendix. • Relate the observation and interview to each other in order to extend the understanding of what is going on by applying an appropriate theoretical perspective. -Find key concepts, models that are appropriate to apply to the results of the analysis in order to make sense of what is going on. - Describe the method and the process of analysis in writing (as a part of the final individual paper). -Describe and discuss the theoretical conclusions in writing (as part of the final individual paper). Hand in the video story/collage.

Hand-out to the students specifying the course content day-by-day.

The students liked the course and the workshop form with the combination of theory, practical work and their use of previous knowledge, particularly regarding the inclusion of games and the use of different video cameras for visual documentation and editing. They were very motivated which is shown in their final exam hand in. They have worked a lot to get the results as good as possible. The complexity of their chosen project required that it was presented several times during the three workshop days. For some of the students the theories and methods presented in the course was considered as chaotic and unstructured, that they had “done this before”, or “how can we use the theory” or “what does it mean to get a focus” etc. It was obvious that the new theoretical knowledge was difficult for many students to comprehend and to use. The video ethnographic method was more concrete and therefore easier to understand and to use, and the student’s prior experience and knowledge about the

different technical aspects regarding the different use of video and cameras made them more comfortable when working with the psychological theories.

The interesting observation was that the combination of using prior knowledge – even in a new situation – and hand-on activities supported the need for finding useful psychological theories to analyse and understand their collected data. In this way, the soft skills became “learnable” (rather than teachable).

6.3. Assessment

The examination was planned to include several aspects and modes, be related to the students’ future professional practice and evaluated through written, visual and oral modes. We wanted to see what the groups had produced: (i) an edited video story or collage; (ii) a project, in writing describing, analyzing and concluding their findings related to the game they had chosen; and (iii) an individual paper based on six questions. These different parts of the examination formed the foundation for the oral examination, which was carried out in the form of a discussion.

The examination preparation for the students was twofold: material made on beforehand in the group as well as the individual paper should be applied one (1) month before examination date and later preparation for oral presentation of their work and questions/answers. The following was instruction for what the students had to hand in before the oral examination and included different modes of expression:

- Video story/collage (4 minutes edited version)
- Group assignment describing the chosen problem/case (3-4 pages)
- Individual mini paper, based on questions (5-6 pages)

What was the focus of the assessment? The straight answer to this question is that assessment in a university context is related to the curriculum - what is expected to be learned - and that which has been learned, captured in formative and/or summative assessment procedures. As underlined in the section on Pedagogical principles and didactical considerations (Section 3.1), learning is not just about acquiring knowledge but also about the way students handle that knowledge through a sequence of activities (the learning process). This statement has, of course, also influenced *how* the examination in Media Ethnographic Methods (MEM) was designed and, consequently, *what* should be recognised as signs of learning (Kress, 2010). In order to answer these questions, a definition of learning is necessary. We consider learning as a result of transformative engagement (Vygotsky, 1978; 1994; 1997) where our interest is in environments and conditions for learning. The different resources

potentially functioning as inspiration and assistance in the learning process, are viewed as multimodal in terms of that they are made in a multiplicity of modes, which all need to be taken into consideration when it comes to forms and practices of assessment (Kress, 2010). The signs of learning are changes in the participant's capacity for action, which, however slight, can be seen as an augmentation of the individual's capacity. Signs of learning are in this study similar to micro development, which is characterised by transition processes in learning and development over a shorter and longer time span.

The material handed in for exam was surprisingly good, and we could see that the students have worked very hard with the different assignments. Their choice of game and their video editing and footage showed their experience from previous Medialogy courses and constituted a hands-on frame for the linking of the psychological theories. The way they have used the methods and theory in their work was in general very satisfying. Less than 10 percentage of the students did not pass. The written group assignment (project) did describe their case and their chosen focus for data collection and analyses. The individual paper critically developed this focus by adding more in depth discussion, linking the methods to theoretical considerations. They have chosen relevant theories to analyse and explain their findings. The conclusions and reflections though were of different qualities. The more chaotic and unstructured the students had experienced the workshop format, the harder it was to grab the students' attention of interest. When an interest emerged, the different modes of expression functioned as inspiration and meaning making resources supporting agency together with the students creative actions, which influenced the quality of the conclusions and reflections in the examination.

The interesting thing was how the students at the oral examination were able to use their written assignment, their video story and and their individual paper in an oral presentation and discussion. If their written examination assignment, for example, needed some further explanations, they were able to explain the missing aspects referring to their video story or their individual paper. Related work (Kress, 2010) reports that the mode of writing often describes an issue (a story) in chronologically arranged sequences of actions and events. Images, on the other hand, show different entities in spatial relations within a framed space. These logics of writing and images, were confirmed in this assessment procedure. What was added, though, was that through the logic of speech (the oral part of the examination) the students developed a clear diachronic reasoning showing their interdisciplinary understanding of methods and theory related to media ethnography and media psychology. Examination results showed that more than 75 percentage of the students have reached the level of syntheses and evaluation according to Bloom's taxonomy (Bloom, 1956) in their written examination

assignment (group project and individual paper). Furthermore, the group project and the individual paper showed an impressive use of edited video material related to ethnographic methods and the media psychological theories. Data from the oral examination showed that 80 percentage of the students were able to discuss and reflect upon the theories and methods they have used.

7. Conclusions

The course was designed as a creative workshop including case-organised design activities and encouraged innovation, group dynamics and participation among the students. The creative workshop applied a design thinking approach and emphasised design actions, which the students sometimes experienced as chaotic elements. The theories and methods used in the course were well implemented. The multimodal form of examination contributed to a soft skill based diachronic reasoning, where the different forms of representations facilitated different logics of presentation and discussion. The written form facilitated a synchronic presentation of the different actions and events included in the course, whereas the visual form facilitated a presentation of the most salient actions and events. The oral form, finally, facilitated a diachronic in depth reasoning linking the different theories and methods used in the course. 80 percentages of the students were able to discuss and reflect upon concepts, models, theories and methods in the final examination (written and orally presented). The examination results showed that 75 percentages of the students reached the level of syntheses and evaluation in accordance to Blooms taxonomy.

It is crucial that the course assignments are concrete including a high degree of hand-on experience. Furthermore, it is necessary to find methods for the oral examination where the students' psychological and methodological knowledge can be evaluated in relation to their ability to frame it in analytical, critical and reflective ways.

In conclusion, it is possible to carry out an engineering course with "soft" content. However, it is important to consider the format and to link the new theories and methods, which can be fuzzy and risky, in framing activities together with something technical that the students know and are interested in. The framing and linking activities, thereby, acts as affordances and bridge the unknown with the known. This, in turn, create meaningful (rather than chaotic) opportunities for interest where social and individual transactions can emerge.

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