

## **GROUP PROJECT WORK: PROFESSIONAL PRACTICE OF FORMAL AND INFORMAL KNOWLEDGE CREATION AND EXCHANGE**

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### **Introduction**

This paper elaborates on how to sustain and exchange knowledge creation through design research practices within design education. The didactic model of group project work provides a conceptual framework which unravels the knowledge creation processes in terms of design learning in a formal and informal way through each participative level.

### **The Learning Process**

Institutions in higher art & design education are by nature organizations which value learning and creativity. Education and knowledge creation is the core business of these organizations. As such, it is quite remarkable how poorly developed the notion of knowledge creation through research is at an institutional level. Although educational facilitators put lots of energy at enabling knowledge creation and facilitating learning at a student level; few organizations have developed a knowledge vision on how they can enable knowledge creation within research processes at an institutional level.

*The challenge of any evolving field is to bring tacit knowledge into articulate focus. This creates the ground of shared understanding that builds the field. [Friedman 2000]*

The new approach; the exegesis approach, gave the institution the wanted insights of research which addresses this stated issue on both a theoretical and practical level within the EMMA [European Media of Arts] and the PhD in Design program.

In art education, learning is considered from a constructivist point of view: “Learning is a process of creating knowledge” [Weick, 1991]. This definition of learning implies that knowledge is both the input of a learning process as well as the output of a learning process. Learning, perceived as a cyclic process, involves three types of learning activities: following a concrete problem or task students are triggered [A] to collect relevant information, [B] to process & synthesise this information and to [C] create and evaluate solutions for the initial problem or task [Renger, 2000].

When the learning process is observed from this angle, and it is part of the culture of the institution to value the learning process of the student as an important aspect to monitor [instead of focussing on output alone], this poses new challenges. One of these challenges, in the light of supporting the process, is keeping track of that process, and maintaining a fair and rigorous assessment process based on evidence delivered by the students.

*To be effective, designers can no longer focus simply on the narrow domains of specific applications. They must increasingly reach deeper and more broadly into the foundations of design, and they must understand more about the cultural contexts in which their designs are created and used. They are now called upon not only to produce new products but also to manage the processes by which the products are produced. They must also understand more about the ways products are used and the people who use them, about how to involve users in a design*

*process, and about how to evaluate designs based upon usage. In addition, more than ever before, designers are required to investigate and articulate the principles and methodology behind the designs through systematic research, experimentation, intellectual inquiry, and theoretical speculation. They are also expected to communicate their findings and contribute to a body of knowledge that constitutes the basis for an emerging academic discipline and a true science of design. [Design Vision; Proposal for a School of Design at the University of California, Irvine November 2002]*

### **Utrecht School of the Arts: Setting the Scene**

Utrecht School of the Arts [HKU] is one of the largest institutes of higher education for art and culture in the Netherlands. The school consists of five faculties, which together offer around 100 courses. The Utrecht School of the Arts offers courses within the area of Visual Arts and Design; Music; Theatre; Art, Media & Technology; Art & Economy.

The Utrecht School of the Arts aims to provide an exceptionally high level of the education; each educational facilitator [teacher, supervisor, tutor] - in whatever faculty - is a highly driven expert in his or her specialist area. It is within this context, the Utrecht School of the Arts is focussed at imparting sufficient knowledge and experience to students to enable them to flourish in the world of art and design.

The approach as discussed in this paper is being applied and educated within the European Media Masters of Arts. The MA in European Media [EMMA] is a master program for young professionals with a multimedia background who want to extend their technical and theoretical scope towards a master degree. The programme has been validated by the Open University, London.

### **Group Project Work**

In this module of the EMMA the development of (multi)media- & music-productions is the key strategy for acquiring professional skills and attitudes. The end-product of the module should be a client approved, state-of-the-art application or creative artefact or project portfolio. These end-products have to be made either as a team effort, with different members of the group taking different roles and responsibilities, in a manner which reflects current industrial practice. The goal of the project is for students to enrich their professional practice with formal and informal knowledge as in being part of a multidisciplinary team and as in applying project management skills, design skills and theoretical knowledge into a coherent state of the art design meeting the client requirements.

### **role of knowledge in design: formal and informal knowledge**

The group project's main focus is on enabling knowledge creation processes by the creation of an artefact within a professional setting. It is this central position of the artefact which evokes processes that enable learning and as such knowledge creation.

*Practice tends to embody knowledge. Research tends to articulate knowledge. The knowledge creation cycle generates new knowledge through theorizing and reflection both. [Friedman, 2000]*

Within the setting of group project work formal and informal knowledge is being created and shared. First of all more specification is required in order to identify the meaning and effect of formal and informal knowledge. On the pedagogical level the group project can be classified as experiential learning in which problem solving plays a central role. The knowledge created occurs outside the traditional setting of classroom-based education. Students practice their profession within a real context such as experiencing professional practice, building up an understanding and reflection of social practices and group dynamics and finally develop their design skills. Explicating the group project we see that it enables students to experience skills and attitudes both formal and informal:

Formally students learn:

- to be prepared for the complexities of multidisciplinary projects and the necessary management skills to successfully complete a project of that kind
- design and development skills such as usage of software
- to develop an understanding of management procedures to complete all phases of project management from original concept development through to delivery and de-briefing.
- to conduct self directed research, both applied and theoretical, at M- level
- to explore a full range of research methods and technological applications with relevant case studies comparing and evaluating their application in the field of Multi-media.
- To reflect on the relevance and applicability of theoretical and models and insights in their creative practise, and to bring theory and practise into meaningful resolution.
- to structure and sustain a coherent self-directed contribution to complex externally assigned project(s) over an extended period of time
- to manage and co-ordinate their own skills and those of others in a manner which delivers results which are both innovative and practical.

Informally they learn:

- to work in multidisciplinary teams and deal with their group dynamics
- to balance their personal desires in their designs vs. the wishes and requirements set by the client and the context
- to develop the critical self-reflection needed to continuously question underlying assumptions of any proposition or assignment set by the context or the client.
- to take an informed position on the meaning and status of research in the context of multi-media
- to be able to discuss and present research concerns and interests employing an appropriate level of knowledge and references
- to develop the skills of sharing critical dialogues and conducting debate around a variety of specialisms
- to develop and reflect upon their personal professional practice by their dialogue with the industry

And as an institute we strive for:

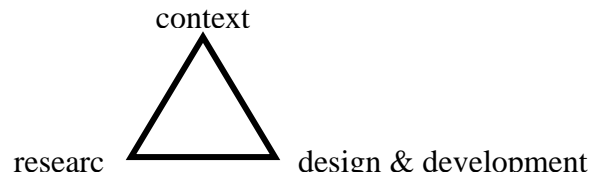
- providing the students with the skills and resources needed to successfully resolve a complex externally sourced assignment(s) which closely mimics future complex work situations in a safe but rigorous learning environment.
- developing the skills needed interrogate assumptions underlying a given assignment with an intensity sufficient to lead to innovative outcomes and a more developed subject area discourse.

- understanding a variety of the project models and methodologies including tasks, roles and responsibilities required to successfully resolve projects of this complexity.
- providing for a multidisciplinary environment in which successful cooperation with people from other disciplines and backgrounds is vital for successful completion of the projects.

In the end the required learning outcomes for the students are both from a formal and informal order: They will be competent to professionally deliver a client approved and state-of-the-art end-product. This end-product is the result of multidisciplinary team effort and responsibilities which reflects current industrial practice.

### Requirements for the Group Project Work

The problem-solving oriented didactic approach Group Project Work can only be operated under certain constraints and requirements. The following diagram illustrates the requirements necessary for the above articulated objectives:



Each group project work has the same point of departure: *the end-product of the module should be a client approved, state-of-the-art application or creative artefact or project portfolio*. It enhances the creative practise through informed dialogue with theory and its implications for design, production processes and making. This requirement demarcates the *context* in which the artefact is created. The client will brief the students what is required:

- Which techniques and/or platform is required, eg. games, film, web application
- Which target group audience, eg. the users
- Which aims and objectives, eg. for which purpose

From hereon the students will start their *research* [Frayling, 1993]:

- research into the design of the artefact, its technical objectives, its targetgroup audience, its aims and objectives
- research for the design of the artefact, user design related issues such cultural diversity
- research through design of the artefact, iterative prototyping (learning by doing)

This strand is especially designed to support the student in conducting supportive research underpinning the practical projects, as well as providing the student with the necessary tools and insights to undertake the research required in their project.

This closely relates to the core of the education, *Design and Development*. All the projects are characterized by a research and context driven design approach. This model incorporates formal and informal knowledge.

## **knowledge transfer: enabling knowledge creation**

In parallel to the group project work the institute also focusses on what enables these processes and how we as an institute can foster these new creations in order to support the exchange of these. It can be said that the enabling learning processes is the core business of institutions of higher education [Thomassen, 2001]. As such universities have developed a range of services [libraries, campuses, ICT-systems] and hired competent staff to enable and stimulate learning and knowledge creation. Krogh, Ichijo and Nonaka [2000] have defined key enablers, which promote learning:

- Creating the Right Context
- Managing Conversations
- Globalising Local Knowledge

These concepts, although from the knowledge management discourse, are highly applicable in the above articulated model of the group project work approach towards learning and the role of the artefact.

### *Creating the Right Context*

Effective learning depends on an enabling context, which can foster ideas and facilitate the articulation, creation and evaluation of learning experiences. As such the “whole process of knowledge creation requires the necessary context or “knowledge space”. Creating a ‘right context’ is crucial to student-centred learning and typically requires the institute to initiate a learning process by stating a problem or assignment. By offering the students a formal assignment from the industry a context is created and the student will be enabled in its knowledge creation. Furthermore the associated workflow of the group project work approach [from concept to end-product] is supported by contextual supportive studies such as the Methods of Research and Project Management.

### *Managing Conversations*

Educational facilitators in student centred education often apply the beneficial effects of conversation on individual learning processes. In coaching student groups educational facilitators often rely on conversations for the purpose of stimulating intellectual effort, promoting the articulating of progress and structuring the workflow. These Socratic dialogues stimulate students to articulate the knowledge and learning experiences acquired and promote critical reflection. [Thomassen et al, 2001] The students are supported by their domain related supervision involving both a project supervisor and process supervisor. It is within this manner the group project work can fully flourish as both supervisors keep a close watch on relevance and connection to the assignment, the quality and creative innovation of the end-product.

### *Globalising Local Knowledge*

Critical to the quality of learning processes is the flow of information between students, educators and the institute. Supervisors require access to articulated learning experiences to enable coaching or evaluation of student-users. Peer learning can be promoted by enabling the exchange of learning experiences within and between student groups. Furthermore, the institute may require the collection of research papers, concepts, project plans and the final end-product. As a consequence the institute requires the students to upload and share the articulated experiences formal and informal: as in uploading formal deliverables but also informal logs elaborating on their (personal) experiences. So both articulation and reflection on local knowledge will be globalised with the usage of an E-learning environment. And can therefore be shared, created and exchanged.

### **Case study: DEMOR joins the forces**

*Demor is a location based 3D audio shooter. This highly innovative game was developed by a multi-disciplinary team of seven EMMA-students for the Bartimeus Institute for the visually impaired. Demor does not only focus on the entertainment aspect of computer gaming, but also attempts to contribute to the emancipation of the blind and visually impaired people in order to enhance their integration with the 'sighted' world. It is a proof of concept developed on the basis of theoretical and practical research. (DEMOR, 2004)*

If apply the design triangle on the DEMOR case we see that:

- *Context:* the Bartimeus Institute for the visually impaired demarcated the assignment given to the students. Therefore the students could develop and create a concept within the constraints of the institute and which type of users it represents. In other words clarification was given on the technology to use, the targetgroup audience, the purpose of the game.
- *Research:* the outcomes of the research can be characterised within three interlocking areas and accordingly gave both the students and the institutes highly desired insights into the targetgroup (visually impaired kids), the technique (audiogame), the purpose of the artefact (entertaining game), the design and development (audio game developing, location based techniques). research for the design of the artefact, user design related issues such cultural diversity
- *Design and Development:* the core of the project triggered the students to broaden and deepen their skills as designers, developers and project management. The project enabled them to upgrade their portfolio and their professional skills and attitudes. It also provided them a position as a designer/developer/manager in the highly competitive field of professional practice.

The institute gained insights into their target group audience, into techniques to use for this particular group, essence of the game and extra attention and awareness for this matter.

### **Conclusion/Openings**

The group project work approach originated as a response to traditional approaches for design learning. An important focus of the approach is the ability to enable knowledge creation and exchange. This is where concepts and ideas from the field of knowledge management appear to be highly applicable to an educational setting. We believe as an institute that the active actors in the process of design created knowledge so highly necessary and required for this innovative field of design. Working in close contact with the professional practice we can offer students and the industry a platform on which innovation, creation and experience are priority.

The requirement model for a fruitful practice of the group project work demarcates the design and research area into three interlocking areas, research, context and design. And accordingly help students and educational facilitators to create and articulate their retrieved knowledge through all the ranges of this full design cycle: education and industry.

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