



CHALMERS
UNIVERSITY OF TECHNOLOGY

Negotiated and authentic assessment with a focus on creative processes – case studies from courses in digital media

Downloaded from: <https://research.chalmers.se>, 2025-01-20 00:21 UTC

Citation for the original published paper (version of record):

Eriksson, T., Wideström, J., Axelsson, M. (2006). Negotiated and authentic assessment with a focus on creative processes – case studies from courses in digital media. *Shifting Perspectives in Engineering Education*: 53-60

N.B. When citing this work, cite the original published paper.

Shifting Perspectives in Engineering Education

Edited by Michael Christie

C-SELT
Chalmers
2006



Editorial copyright © Michael F Christie, 2006
Individual chapters copyright © individual contributors, 2006

Apart from any fair dealing for the purpose of private study, research, criticism or review, as permitted under the Copyright Act, no part of his publication may be reproduced by any process whatsoever without the written permission of the publisher.

ISBN-10 91-631-8476-1
ISBN-13 978-91-631-8476-5

Cataloguing-in-publication data:
Christie, Michael F (ed)
Shifting Perspectives in Engineering Education

[1] Higher Education. [3] Engineering Education [3] Flexible Learning [4] Flexible Delivery
[5] Gender [6] Curriculum studies [7] Educational Development [8] Supervision of research

Publisher: Chalmers Strategic Effort on Learning and Teaching (C-SELT)
Chalmers University of Technology, Göteborg, SE-412 96, Sweden

Email enquiries: michael.christie@ckk.chalmers.se

Printed at Chalmers by Repro

Contents

	Foreword Peter Olsson	7
1	Introduction Michael Christie	8
Part 1	Curriculum Reform	13
2	Factors involved in curriculum reform: a case study from chemical engineering Magdalena Svanström and Tobias Richards	14
3	Experiences from the transformation of an engineering education introductory project design course into a project design-build-test course Göran Gustafsson	33
4	Development of a new course in Process control and measurement techniques: lifting the level of comprehension to a system level Torsten Wik	44
5	Negotiated and authentic assessment with a focus on creative processes – case studies from courses in digital media Magnus Axelsson, Thommy Eriksson and Josef Wideström	53
6	Assessing group-work projects in higher education: some pedagogical and ethical considerations Michael Christie and Fariba Ferdos	61
7	Activating learning: the response of students on a new project course in pharmaceutical technology Anette Larsson	75
8	Planning an advanced course in Power Electronics Ambra Sannino	85
9	Assessing Lectures, a case study on the students perception Andreas Boklund	95
10	Constructive alignment in an Engineering Education masters course Rikard Bensow	103

Negotiated and authentic assessment with a focus on creative processes – case studies from courses in digital media

Magnus Axelsson, Thommy Eriksson and Josef Wideström

Introduction

The Centre for Digital Media and Higher Education at Chalmers University of Technology manages two masters programs, namely, Technical Communication (Teknisk Kommunikation) for civil engineers and Entertainment Design and Technology at the IT University of Göteborg. Both of these programs focus on the planning, production and critical evaluation of digital media and digital applications. This is a complex and multi-disciplinary area where holistic understanding and artistic approaches rival technical know-how in importance.

Our preferred pedagogy is problem based learning. Although we help with suggestions and examples of previous work it is usually the students who come up with a problem or project they would like to work on within digital media. The problem is usually practical and like the students in mechanical engineering, who are mentioned earlier in this book, our students tend to conceive, design, implement and operate a product. In our case the end result is usually a digital application, such as a web site, a computer game or a short film.

These projects mimic many aspects of the professional work that awaits the students after their education since they have a finished product as a goal. As a course planner you are faced with two alternatives; either give the students hypothetical projects or actual real-life projects. Even before starting a course it is obvious that hypothetical projects have advantages. An hypothetical project can be custom-tailored to exactly correspond to the learning objectives of the course. It also simplifies planning since the only parties involved are the teachers and the students. But what about the benefits of real-life projects? Would not a student project where the students worked on actual projects, with actual partners/clients, enhance their learning, at least when it comes to preparing them for future professional assignments? And would not these more realistic and demanding projects be more interesting and fun for the students to work on? After several years of experiments with such projects we have a few experiences and lessons learned which we would like to discuss.

Authentic negotiated assessment

We will make use in this chapter of the concepts of authentic assessment and negotiated assessment. Since we are teachers rather than educational researchers we use these terms in our own particular way. In our meaning of the term authentic assessment involves the use of collaboration with other professionals in the field. This means that as a major part of their assessment student work includes a project that is or is part of an actual project taking place outside of the scope of the learning itself, for example, at a company. The external partners function as clients and/or collaborators. With the term negotiated assessment we mean that the students, the teacher and the 'client' decides together what the focus, requirements and evaluation criteria will be for each project.

Case study 1: Digital Gestaltning at Entertainment Design and Technology, and the visual effects industry

The five-week course Digital Gestaltning (hereafter we use the English translation Digital Representation) is a part of the masters program Entertainment Design and Technology (EDT) at the IT University of Göteborg. EDT is a holistic and inter-disciplinary masters program focusing on the design and technology of digital media for the entertainment industry. In the course Digital Gestaltning the students (22 students in 2005) are introduced to tools for digital media production, such as Director (visual programming), Maya (3d animation) and After Effects (compositing). The aim of the course is to practice knowledge gained in the previous course Multimodal Interaction Design. Problem based learning is used as a pedagogical method, and the students work in groups of 3-5 students on assignments.

The group assignment involves creating visual effects with 3d animation in Maya and compositing of CGI (computer generated images) with live action footage using After Effects. In order to make the assignments more realistic and more interesting to work on, as well as helping the students establish a network of professional colleagues, the assignments have been planned as a small part in a larger whole; an actual movie production. Before the course introduction one of the teachers arranges for students to collaborate with film makers on actual movie productions. These film makers would play the role of clients, setting up the purpose, context and requirements of the assignments.

The film makers were to decide on this in agreement with both the teacher and the students. According to the circumstances of each project the agreement and project progress was discussed in different forums; either teacher-client, or teacher-client-students, or client-students or teacher-students. We could have tried to formalize these discussions (e.g. always discussing in the constellation client-teacher-students), but we judged that this would have made the process more difficult. In one case it was almost impossible to get in continuous contact with the client, due to heavy workload, and in order to have the assignment progress it was the teacher who was involved in the discussions with the students. In another case it was obvious that the client (a student himself) quickly developed a good relationship with the student group so that it was not necessary for the teacher to propel the project.

We choose to use the concept authentic assessment – collaboration on a professional basis – to describe this methodology. We argue that it ensures interesting assignments, ambitious work from the students and provides valuable contacts with film makers. We also use the term negotiated assessment to characterise the high degree of flexibility with which the students, the teacher and the ‘client’ decide things together.

Four different projects in 2004

This is the third year the course is given and the assignment has been gradually developed into its present stage of design. The collaboration with film makers concerning visual effects have been used in every course, but never with the current complexity. This year there were four parallel clients. The students choose between four different projects, all involving doing visual effects shots in animatic quality (‘sketches’). These involve:

- swarms of wasps in a degree project film for Filmhögskolan in Göteborg,
- character design studies of a supernatural skeleton character for a CGI feature film,
- a supernova explosion and the cloudscape of a gas giant planet for an Imax documentary
- replacing a live footage character with a CG (computer graphics) character for a horror short film.

Two of the film makers were Swedish, the other two based in Los Angeles.

Assessment negotiated together with clients, students and teachers

Each project involved several different aspects (e.g. modelling, texturing, animation, visual style) and clients, students and teachers decided together on the focus appropriate for each student group. Sometimes we focused only on one aspect, sometimes on two or three of them. We also negotiated intended quality for each aspect. None of the projects were possible to complete within the course time span, so compromises were necessary. In some projects it could be important to work with motion studies, in another the focus turned to the visual look of a character. The actual contact with the film makers (clients) varied substantially between the projects, ranging from none at all in one project to frequent meetings and e-mail contact between client, students and teacher in others. It is interesting to note that the assignments with the most frequent contact were also the two most successful projects in terms of quality of the final result, achieved grade and how well the student team seemed to work.

The need for written agreements

The need for written agreements deserves special attention. So far we have had three collaboration projects with degree project students at Filmhögskolan. These projects have the requirement to evolve further than just animatic quality; they need to be completed with a professional quality. Feedback from the students show that this results in realistic

and engaging work, but a potential problem is that there is not time for the students to complete the project within the course. The solution has been, so far, that the students voluntarily complete the assignment in their spare-time or in the course Digital Movie Making (also part of the EDT masters program). At least on one occasion, the client (the degree project student at Filmhögskolan) has raised the issue of a written agreement to ensure that the project is completed.

During another project credit was given in the movie credits only to the collaborating students, and not to the Chalmers University of Technology, which after all had initiated the collaboration, as well as supplied expertise, hardware and software for the project. Normally credit is taken for granted but this shows that there might be a need for a written agreement on how credit should be given.

Another kind of agreement involves Non-Disclosure Agreements. This was required for the two Los Angeles based projects mentioned earlier, since they involved high-profile feature film productions in the development phase. The students signed NDA's before getting access to the movie script and production design sketches. The only observed effect was that the required presentation in front of the class of the completed assignment became a bit vague concerning the aim and goal of the assignment.

Case study 2: Digital Representation in Technical Communication, the Expressbuss and the Universeum projects

In the visual effects projects discussed previously the students and the clients were the active partners, while the teachers of the course had an advisory or tutoring role. In the course Digital Representation in the program Technical Communication we have had two student groups assignments where we as teachers have not only been teachers but also active partners in the project. The program is open for all MScEng students at Chalmers and the course is a 9-week course focusing on tools and methodology in the use of digital media. The course stretches across both the fall and spring semester, making it especially suitable for collaboration with long-term projects.

Most of the student projects in this course have some degree of authentic and negotiated assessment; typical projects involve creating web sites for local sports clubs or designing learning games for school pupils. In 2003/2004 and 2004/2005 the students were involved in the projects 'Expressbuss' and 'Universeum'. The Expressbuss project was a research project initiated by Chalmers University of Technology, financed by Vinnova, and with Volvo Buses and Swebus (a local buss coach company) as close collaborators. The aim of the project was to develop new methods to do customer surveys, using an interactive digital questionnaire / prototype visualization. The budget was about SEK 1.5 million (about 150 000 Euro). The Universeum project was initiated by the science centre Universeum in Göteborg, which joined forces with Chalmers and Saab Ericsson Space in order to develop new exhibition booths. The primary target group for the science centre is youth, aged 10-12, especially girls. The budget in this on-going project is about SEK 350 000 (about 35 000 Euro).

Students having leading role in a professional project

We involved students in the projects both because they seemed to be interesting and educational projects to work on and because we anticipated that the students could give us fresh insights and new ideas. During the work on these projects it became obvious that they differed in one important way. The Expressbuss project was established and started before the students became involved so the student assignment became a limited and well-defined part of the production process (three students worked on one of four movie sequences). As teachers and project managers we were responsible for formulating the aim, goal, and concept of the project. We also guaranteed quality and we were responsible for integrating the sequence created by the students into the whole. This lent the student assignment a straight-forwardness and the focus for the students was simply to create a well done movie sequence. It should also be noted that the Expressbuss project actually involved one trainee from another media education, the three above mentioned MScEng students, one diploma thesis student and one doctoral student. Everyone was closely involved in different parts of the project.

The start-up of the Universeum project was quite different. This time the students were involved basically from the very start, with about 20 students joining introductory meetings and study visits at both Saab Ericsson Space and Universeum. This interest from the students eventually boiled down to three student groups completing prototype concepts and presenting them for the teachers and the participants from Saab Ericsson Space and Universeum. So, the students actually had the responsibility to define the concept of the project and had to have a holistic approach to the project, of course with us as teachers tutoring and trying to guarantee quality. We think that this responsibility was a bit intimidating for the students, since it was far from obvious what they should do. But it also made them feel very strongly for their projects and it was very important for them to have guarantees that the projects should be completed. These guarantees were difficult to get since the forms of collaboration was continuously evolving and for a long time the budget of the project was not certain. Universeum also announced that they wanted to go ahead with just one of the projects, called "Rymdlust". The three projects had to be combined into one project. Several students left the project for other assignments in the course, but in January 2005 a group of five dedicated students continued the development of the concept.

Formalizing a structure for the Universeum project

In discussions during February between the students and teachers we finally formalized the project structure. The students were going to have the initiative and do most of the development of the creative concept and the actual production work. The teachers were active participants in the project group but would focus on inspiration, tutoring, offering expertise and working on specific and difficult parts of the production, basically taking workload off the students. The teachers would also do the research and development work. This was important in order to meet the requirements of the original grant proposal and to satisfy the funders. Universeum and Saab Ericsson Space would function as clients and reference groups, approving proposals on three mile-stone meetings. The milestone

meetings were an important curriculum design feature because of the complexity of the task. When needed additional companies could be involved as consultants, for example in the actually building of the exhibition booth.

Case study 3: School of Photography and Film and the movie industry

An interesting example of authentic assessment is the degree projects at the School of Photography and Film at Göteborg University. During our own collaboration with the school we have had interesting insights into their pedagogy. The degree projects always involve the making of a short film. These productions are examples of very close collaboration between the student (acting as director for the short film), other students at the school (often acting as producers or editors etc.), semi-professionals in the movie industry (e.g. young actors looking for work experience), and companies (e.g. Göta Film, Sonet Film acting as production companies).

There are several advantages with such close collaboration. First, it gives the student hands-on experience of professional level film making, which is of course very important in the highly competitive movie industry. Second, the close collaboration with professionals helps the student build his or her professional network and reputation. It is also very important for landing the directors their first assignment in the industry. Finally, movie making requires considerable resources and a large team of people with different skills; collaborating with partners outside the school gives well-needed financial support and an equally well-needed film crew.

Comparison between educating movie directors and architects

It could be interesting to compare the above pedagogy with the problem based learning employed at the School of Architecture at Chalmers University of Technology. There are several aspects of film making and architecture which make a comparison interesting; both the architect and the movie director works with large scale, large budget projects where both artistic, technical and financial requirements must be met, and in large teams with a divergent range of other professionals. Architect students often work with 'real life' projects, but usually in parallel with the professional architect, resulting in a kind of semi-authentic pedagogy where the projects are real but the working context is not (since they do not actually collaborate with others in the project). Architects are generally not considered professional architects capable of working on large scale projects after their degree. They usually need to start working at simple projects or defined parts of a project, until after several years they are ready to be responsible for larger projects. Maybe the education of architects could benefit from the authentic assessments employed at the School of Photography and Film?

Conclusions

Every authentic assessment assignment is unique with different demands, foci and goals. This is an obvious result of the fact that it involves real life projects which are never identical to each other. The effect is that the assessment of the students must be adapted

to each project; in other words the assessment has to be negotiated. Thus, authentic assessment requires negotiated assessment.

So far the authentic assessment projects we have been involved in have been quite informal, and even though no big problems have occurred so far, we see the potential risks with this informality. We have had problems with clients that were not available, projects that were close to cancellation due to uncertain financing and so on, and it is easy to envision even worse problems that could arise. Therefore we believe that in future the collaborations need to be more formalized, e.g. written agreements on financing, who is responsible for the completion of a project, non-disclosure etc.

Often the authentic assessment projects are quite demanding on the students, both because the anticipations from the clients are often quite high and because the students usually have a very ambitious approach to the project. Therefore, a lot of time is spent on tutoring, with the teacher sometimes on the verge of stepping in as an active partner in the assignments. One side effect that we noted with authentic assessment projects was that when collaborating closely with the students, the contact time increased greatly as compared to the other student assignments in the same course. This is rather obvious. But it is important to ensure that in a course where tutoring plays an important role (as is the case in this course) this increased contact time should have pedagogical benefits. The presence of professional clients in the projects is also important since it gives the students additional insights and knowledge. Another conclusion is that, yes, the students find these real life projects more interesting and fun to work on.

References

- Abercombie, M.L.J (1980) *Aims and techniques of group teaching*. London: Society for Research into Higher Education.
- Biggs, J and Moore, P. (1993) *The process of learning*. Sydney: Prentice Hall.
- Biggs, J. (2003) *Teaching for Quality Learning at University*. Buckingham: Society for Research into Higher Education and Open University Press.
- Boud, D (1995) *Enhancing learning through self assessment*. London, Kogan Page.
- Boud, D. and Felettie, G. (1997) *The challenge of problem based learning*. London: Kogan Page.
- Brown, G and Knight, P. (1994) *Assessing learners in Higher Education*. London, Kogan Page.
- Hammond M. and Collins R. (1991) *Self-directed learning: Critical Practice*. London: Kogan Page.
- Jaques, D. (2001) *Learning in groups*. London: Kogan Page.
- McKeachie, W., Pintrich, P., Lin, Y. and Smith, D. (1986) *Teaching and learning in the college classroom*. Michigan: University of Michigan Office of Educational Research and Improvement.
- Prosser, M and Trigwell, K (1998) *Understanding teaching and learning: the experience in Higher Education*. Buckingham: Open University Press.
- Ramsden, P. (1992) *Learning to teach in Higher Education*. London: Routledge

Resnik, D.B. (1998) *The ethics of Science. An introduction*. London: Routledge.
Torrance, H. (ed.) (1994) *Evaluating authentic assessment: problems and possibilities in new approaches to assessment*. Buckingham: Open University Press.
Wiske, M.S. (ed.) (1998) *Teaching for understanding. Linking research and practice*. San Francisco: Jossey Bass.