Roskilde University

From experience alone

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From experience alone

Starting in Fall 2000 Roskilde University in Denmark will be offering a distance education Master-degree programme in communication by means of *new media*.[1)] In planning this new education we have examined current practice and reflected on future needs in Danish academic computer media programmes.

Computermedia galore

IT is considered the mantra for creating an affluent and competitive information society, and consequently programmes in computer media are being introduced everywhere in the educational system. In the national budget some DKr. 750 million (100 million Euro) have been allocated over a five-year period (1998-2003) for advancing IT programmes and research in higher education, so the level of activity, already high, will increase significantly in the next few years.[2)] We also now have a national policy for encouraging supplementary training in information technology of those who have already joined the labour market. One visible result has been the proliferation in the late 1990s of Open University Master-programmes in IT + [some profession].[3)] They vary widely in content and scope, but it is a common characteristic that the curriculum focuses on how to integrate IT into a profession and into the organisations in which this profession is practiced.

Not only are new educations mushrooming, the record being the launch in the past three years of ten new programmes in "multimedia" at Danish universities and colleges. The institutional framework is also changing. In September 1999 the Danish IT-University opened with branches in Copenhagen and Jutland. The Copenhagen branch which is run by a consortium consisting of the Copenhagen Business School, the Danish Technical University and the universities of Roskilde and Copenhagen, is the first local example of a truly interdisciplinary approach to IT - in total concept if not yet in terms of actual courses. In the Øresund-region, now developing as an economic and educational centre, students will also be attracted to the school of art and communication at Malmö University (Malmö Högskola, founded in 1998) and Lund University's Scandinavian College of Communication at Helsingborg (also founded in 1998), both institutions also notably interdisciplinary in their approach. Research networks are also being established, bringing together computer scientists, educationists, engineers, humanists and social scientists. Thus on the local level we have networks for computer media, educational multimedia, IT-design, and the recently established Nordic Interactive Multimedia Research Network (1999) will become an important forum for scholars and post graduate students of all the Nordic countries.[4)]

The new institutions and the networks are evidence of a shift in our understanding of computer media education. So far the most common approach to establishing computer media programmes has been (and still is) to add them to an existing discipline within an existing department. Thus engineering and computer science departments train future computer science specialists in advanced multimedia software systems development while various departments in the humanities teaching the aesthetics, social and cultural aspects of new media produce generalists in *new media*. The typical outcome of this entrenched segregation of scholarly disciplines, aptly summarized by Janet Murray as "Multiple Approaches", clearly does not meet the requirements of the future.[5)]

But apart from the fact that the educational goals of different institutions obviously differ, this state of affairs does reflect the sound and well-tried academic approach that you have to deal with new subjects within the limits of the dominant competencies and traditions of your department and institution. If viable they will eventually come into their own, as did for instance computer science in the 1960s and 1970s. The process may be stimulated by interdisciplinary programmes, but a patchwork of theories and methods developed for a variety of professions does not in itself constitute a sufficiently solid foundation for an entirely new discipline.

Training communication experts

Generalists in computer media will certainly be in demand for some jobs, like that of interactive designer. But in general some measure of specialization is both natural and desirable. Multimedia computers are now very widely used in just about every profession, and it makes sense to deal with the integration of and transformative influence upon the various professions from the point of view of the needs and typical tasks of the profession rather than reinterpreting the profession to fit the properties of the new media.

In line with this thinking the Roskilde University Master-programme is meant to appeal rather narrowly to communication professionals such as journalists, TV or radio producers and information officers who feel the need for supplementary academic training in the cultural, social and communicative implications and creative uses of new media. They are already communication experts within certain media and genres, and when they graduate they will most likely continue working within their profession. The programme will help them learn how to analyze and produce new media products related to their line of work, how to use and perhaps reshape traditional genres in a world of computer mediated communication and how to understand and exert influence upon the new cultural and social patterns of the knowledge society.

Communication professionals are particularly interesting individuals to work with because they do in fact know how to express themselves by means of various media. This, unfortunately, is quite a rare qualification in an academic tradition where scholarship matters, but general communication of knowledge usually does not. In most university courses students still receive grades solely for their understanding of facts, theories and methods and for expressing them in accordance with the form and terminology of scholarly writing. So, typically neither faculty nor students see much point in experimenting in practice with the expressive qualities of new media when little or no attention is being paid to writing intelligibly - let alone creatively - in the traditional media.

But you cannot learn to use, produce or even evaluate computer media products just by discussing theory. "Quantity gives experience. From experience alone can quality come", as Ray Bradbury puts it in one of his essays on how to become a writer.[6)] That is, you have to practice, and practice a lot if you want to become an author, and it is no different if you are to learn fully to appreciate the creative uses of computer media.

Organizing the programme

Since 1996 Roskilde University has been running the *InterKomm+* net based learning programme, an Open University variant of the university's highly successful programme in

communication studies.[7)] The new net based education using InterKomm+ as a model will require students to participate in face-to-face class work (accounting for about one quarter of the syllabus) as well as work in computer mediated virtual classrooms. Conventional classes organized as monthly weekend seminars and a few week-long courses provide training in subjects requiring attendance (fx handling new hardware and software), introduce new subjects by means of lectures and lab work and help create the social framework that is so important to the success of the virtual class work. This involves discussions, group work and tutoring using software for conferencing and computer supported collaborative work (CSCW).

At Roskilde University, which specializes in academic professional training, most teaching is based on workshops and short courses providing the necessary theory, methods and practical skills for the students' problem-oriented case based collaborative work. This kind of teaching can easily be transferred to the virtual campus, as the InterKomm+ experiment has proven. The challenge of the new programme will be to make not only paper writing and discussions function in the virtual environment, but also CSCW involving designing, constructing and testing multimedia applications. We believe that CSCW in virtual spaces will become an important way of organizing work in a not too distant future, and therefore this aspect of the programme not only will provide our graduates with important qualifications but will also be an interesting subject for further research.

The programme will have a small core faculty and a several part time teachers who will each contribute a course or a seminar in their special field and then be available for tutoring on the conference system for a certain period of time. This construction, incidentally, provides one solution to the staffing problems raised by Janet Murray in her paper in this volume. Net based learning is the course administrator's dream. You can employ just the right people for each specialized task, and you can keep them on as virtual faculty indefinitely at little cost but great benefit to the students who will have access to expertise whenever they need it. We are aware, however, that relying on a virtual faculty will make it a challenge to maintain a uniform pedagogical standard.

From the academic point of view this way of organizing the programme is absolutely neccessary. At the present time multi-diciplinary experts in computer media are in very short supply. So like everyone else we have to rely on faculty specializing in the various constituent disciplines. But we expect that their combined contributions will have a synergetic effect not only in terms of student learning, as discussed below, but also in terms of research. All faculty members will be part of a network, and they will have to collaborate in planning, tutoring and evaluating student project reports and media products. Thus the Open University programme though not itself a research institution will provide contacts and inspiration for interdisciplinary work and, hopefully, the development of theories and methods based on the computer medium itself.

Computer media core properties and content planning

The "Multiple Approaches" mentioned earlier reflect the fact that mastery of computer media requires multiple competences. They have to be introduced in a meaningful way so that the student may develop an understanding of the computer as a new medium rather than having to try to make sense of a kaleidoscopic jumble of theories, methods and skills. Developing principles for placing the many heterogeneous components into proper perspective is exactly what Janet Murray proposes in her article in this volume, *Toaster, Poster or Medium of*

Communication. Her suggestion is that we should "exploit the core properties of the computer". These are the procedural, participatory, spatial and encyclopedic properties first identified in her book *Hamlet on the Holodeck* as the basis for literary creation in the computer medium.[8)] In her article professor Murray specifically addresses the problem of training interactive designers. But there is no reason why this approach should not be applicable to other areas of computer media education.

Teaching the four core properties of the computer medium does present a very attractive educational objective. But actually mapping them to courses is not that simple. They are of course interdependent, and it is difficult if not impossible to study one ignoring the others. But when you are trying to develop a curriculum it is neccessary to introduce some sort of progression as everything cannot be mastered at once. We have at best a tentative solution to this problem.

One may note that the four properties reflect the historical development of the medium. The procedural property was introduced with the first implementation of a Turing machine, and this basic property illustrates what computers actually do. The encyclopedic property resulted from the invention of devices for mass storage, and it made computers generally useful for other purposes than military and scientific computations. The spatial property was born in the 1960s with computer games and experiments with hypertextual data structures and graphical user interfaces. It introduced user-friendly applications for all sorts of purposes and all kinds of people. And finally the participatory property in the shape of real time and interactive systems changed not only our conception of computing but eventually also the entire organisation of work and communication. Tracing this historical development may be useful for courses in media history and media sociology. But if we were to use it as a general framework we would most likely repeat the mistake of the school system in the early 1980s when programming was considered basic to computer literacy, and the overwhelming novelty of the subject left room for little else and tended to alienate all but the nerds.

Also, we are wary of over-emphasizing the technical and programming elements. Essential though they are to developing an understanding of computer media, the objective is to provide a programme focusing on how to apply scholarly theories and methods to analysis, design and implementation of products. Incidentally, this is not what is foremost in the minds of our "customers", who are mostly managers in government institutions and private business. Generally they want their employees trained now or preferably yesterday in how to use specific software or how to perform a special task. But it is important that university programmes do not deteriorate into courses in specific computer applications. The best way to avoid it may be to make it very clear that your programme is long-term investment and that it makes no pretence to compete in the computer course market.

In *Hamlet on the Holodeck* when establishing a computer medium aesthetics Janet Murray groups the four core properties of the computer medium into interactive (procedural, participatory) and immersive (spatial, encyclopedic). Interpreting this classification somewhat heavy-handedly, in our planning we have tried to associate the properties with particular elements of the curriculum in order to introduce a progression from the introductory courses to the more advanced ones.

The two interactive properties are obviously indispensable when planning, designing and programming applications. So we believe that the best way to introduce them will be in the context of courses and workshops involving production. Once a practical understanding of

them has been developed, the students will be much more capable of discussing them in in a meaningful way in the courses focusing on how to evaluate and analyze products and usages. On the other hand, the two immersive properties, being rather more familiar to an academically trained non-technical person, offer a good point of departure for analyzing and evaluating computer media and net media products. Once they have been introduced in this context, it may be easier to make meaningful use of them in the design and production of computer media applications.

As already mentioned, we do not expect our faculty suddenly to transcend the understanding of computer media that they have developed within their profession. Courses, seminars and workshops will probably introduce a good many of the "Multiple Approaches". In the project work and in approving M.A.-thesis subjects, however, we will take great care to select problems requiring an interdisciplinary approach related to one of more of procedural, participatory, spatial and encyclopedic properties. In this way we hope that a true understanding of the special properties of new media that we probably cannot teach ex cathedra will result from the learning process as the students struggle with projects involving tasks that can performed well only by studying, combining and applying elements from various relevant diciplines.

Notes

1)
The original plan for this Open University programme was proposed by lektor Robin Cheesman at Roskilde University together with Mr. Bent Nørby Bonde at The Baltic Media Centre at Svaneke. Further information on the programme may be found on www.komm.ruc.dk/MMA/ and in Robin Cheesman & Simon B. Heilesen: Master of Multimedia Arts - educating for the new news media. Paper for the NIMRES2 workshop, Helsinki, May 28-30 1999. Available online: mlab.uiah.fi/nordic-interactive/nimres2/html/cheesman_heilesen.html and on www.komm.ruc.dk/mma. The Ministry of Education executive order under which the new education is supposed to operate originally was issued for the MMA-programme (Master of Multimedia Arts) offered by Århus University since 1997, see: Bekendtgørelse om uddannelser til Master of Multimedia Science (MMS) og Master of Multimedia Arts (MMA) ved Aarhus Universitet. Gældende BEK nr. 639 af 31/07/1997. www.uvm.dk/lov/bek/1997/0000639.htm.

2)
Statistics on the allocation of funds in Morten Kyng: Vækst i den danske IT-indsats. CIT Nyt 1999, Nr.2.

3)
The Danish Master-degree is offered only by Open University. Entry requirements are a B.A. or a relevant vocational training plus some years of experience in the labour market. The duration of the programme varies from one to two years of full time study. The Roskilde University programme represents a one and a half years of full time study (three years of part time study). The national policy is described e.g. in: Information and Communication Technologies in the Education System. Action plan for 1998-2003. (The Ministry of Education 1998). Available online:
http://www.uvm.dk/eng/publications/10InformationCom/1.htm.

4)

On multimedia programmes: Intermedia: Multimedier - et uddannelsesseminar, 1999. (www.intermedia.uni.dk). For further information on the new unversities, see www.itu.dk (Copenhagen branch of the IT-University), www.mah.se (Malmø Høgskola) and www.scandinaviancollege.com (Scandinavian College of Communication).

5)
Janet H. Murray: Toaster, Poster or Medium of Communication? Defing the Goals and methods of Interactive Design Education for the 21st Century. In this volume.

6)
Ray Bradbury: Zen in the Art of Writing. (1994) Santa Barbara 1996, p. 145.

7)
For information on InterKomm+, see: www.interkomm.ruc.dk/. For a report on InterKomm+ as an experiment in developing distance education, see: Robin Cheesman & Birgitte Jallov: InterKomm+ en supplerende uddannelse i kommunikation. Rapport fra et forsøg med internetbaseret fjernundervisning 1996-1998. Roskilde 1999. Available online: www.komm.ruc.dk/netpub/ik/CTU-SlutRapport.PDF. InterKomm+ pedagogy is discussed in Robin Cheesman & Simon B. Heilesen: Supporting Problem-based Learning in Groups in a Net Environment. Paper for the CSCL'99 conference, Stanford, December 12-15, 1999. Available online: www.komm.ruc.dk/netpub/ik/CSCL99.htm

8)
Janet H. Murray: Hamlet on the Holodeck. The Future of Narative in Cyberspace (1997) Cambridge, Mass. 1998.