Studien und Berichte der Arbeitsstelle Fernstudienforschung
der Carl von Ossietzky Universität Oldenburg

Band 6

Ulrich Bernath and Eugene Rubin (Eds.)

Reflections on Teaching and Learning in an Online Master Programm

A Case Study

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Series Editors' Foreword

The Arbeitsstelle Fernstudienforschung (ASF) is a joint unit of the Center for Distance Education and the School of Education at Carl von Ossietzky University of Oldenburg. It supports research and development in distance education. More specifically, the joint venture was set up to reflect upon the activities undertaken by the Center for Distance Education in the light of relevant international research in distance education and to facilitate the development of programs and courses within the university as well as in a national and international context.

In fulfilling its mission one of the outcomes of the ASF was the creation of the ASF Series in order to publish studies and reports reflecting upon the practices undertaken by the Center for Distance Education. The first publication in 2000 assembled contributions on a university networked program for professional development in dialysis of around 900 nurses, which was one of the larger and remarkably successful projects coordinated by the Center for Distance Education.

In Spring 2000 the online Master of Distance Education (MDE) program - jointly offered by the University of Maryland University College (UMUC) and Carl von Ossietzky University of Oldenburg - was implemented. The realization of this program endowed the ASF Series with a new perspective, namely to provide a series of volumes that directly support specific courses in the program, as well as contributing to the overall scholarship in the field of distance education.

Holmberg and Peters, repeatedly awarded for their life-long contributions in the field of distance education authored volume 4 & 5 of the ASF Series, which became readings in the MDE's *Foundations of Distance Education* course. Currently in preparation are four volumes by Rumble, Beaudoin, Brindley, and Hülsmann that are also designed to serve as readings for students in other MDE program courses.

Volume 6 of the ASF Series - in hand - follows the original goal of the series. It reflects upon the undertakings of the Center for Distance Education. The MDE has become the center's largest endeavor in recent times with more than 500 students joining the program since its inception.

The editors of the ASF Series are grateful to the faculty, staff, and students of the MDE program, who followed the MDE program directors' and the editors' invitation to present a multi-facetted case study with "Reflections on Teaching and Learning in an Online Master Program". We like to express our special gratitude to Christine Walti and Franziska Vondrlik for their tremendous editorial assistance before handing this volume over to the University press.

It is our hope that the many involved in this program as well as the professional community are stimulated by the extraordinary efforts invested in volume number six of our series and enjoy the profusion of reflections.

The Series' Editors

Volume Editors' Foreword

The Master of Distance Education program was launched in January 2000 by the degree granting University of Maryland University College (UMUC) in partnership with Carl von Ossietzky University of Oldenburg, which contributes two of the six integrated certificates in the distance education program. The Master's and certificate degree programs are completely accessible online. There were only a few similar programs existing at the time and much of the curriculum needed to be developed as there was no "standard“ program to follow. We felt the program to be both innovative and experimental. On these grounds we were challenged to reflect on what we were to do and at the same time set the standards for a graduate program in distance education.

The publication of this 6th volume of the ASF Series was a particularly challenging one for a number of reasons. It was our intention to do more than merely describe a graduate university program in distance education and, at that, one which is entirely online. We not only want to share the curriculum with our colleagues, but also the process, the critical reflections and indeed the emotional impact of developing and participating in such a project. It was - and still is - an evolving experience and one that we feel others could learn and benefit from. In order to achieve the different levels and goals to which we aspired necessarily meant including the many players involved - the program directors, the faculty and visiting experts, and the students - who all approach the program from different backgrounds, experiences, intentions, and perspectives. Collecting the various aspects and practices of program development for online teaching and learning provides us - those involved - and the distance education community with an extraordinarily rich picture and in this sense we call this work a case study.

The themes include institutional politics, program management, detailed cost analysis, student and faculty support, reflections on online and distance learners and learning behaviors, digital learning spaces, technologies, communication, facilitation, cooperation, and collaboration. Thus, we can also regard our work to be a handbook on issues that necessarily arise and need to be taken into consideration when planning and developing an online program. The multiple perspectives from the thirteen authors from Canada, Germany, Sweden, and the U.S. give each chapter a distinct feel, convey individual world views and often slightly different ways of looking at the same events within a larger framework. The detailed index invites readers to approach the volume from their own perspectives and interests.

We do not present our program as the correct way to do things... it was our way - based on the circumstances and the context along an existing timeline. However, what is unique about this publication is that the practice which has evolved has been extensively deliberated and is rooted in theoretical underpinnings and purposeful research supported by these experiences. It is a program designed and taught by reflective practitioners, who are willing and able to share these insights with their colleagues, students, and with a larger community, and they flow back into the program.

The volume is divided into three parts. In the first part the program directors from the partnering institutions (Bernath and Rubin) describe the historical origins of the Master of Distance Education, outline the basic structure of the program and discuss the organizational and managerial issues that need to be dealt with in the development and early pilot phases of such an endeavor. This sets the stage for the second part where

MDE faculty, visiting experts, and staff (Beaudoin, Brindley, Holmberg, Hülsmann, Peters, Roberts, Zawacki) review the program from various aspects and their experiences. The third part of the volume, the students' perspective (Fox, Offenbartl, Smith, Walti) gives voice to those who are the target audience of the program's efforts to convey and create new knowledge.

The combination of reflective practice and experiencing theory leads to a strengthening of both areas, with the added value of providing substantive knowledge to the community at large.

The more than 500 students who have joined the program since its inception, the array of international faculty and visiting experts, the experiencing of collaborative and differing approaches to a number of issues as well as the possibilities and challenges encountered in the online environment - these are all components in the work accomplished here. With "Reflections on Teaching and Learning in an Online Master Program - A Case Study" we invite the readers to join us in the discussion.

We are very much obliged to all who contributed to this volume.

Ulrich Bernath & Eugene Rubin
Oldenburg & Adelphi, March 2003

ULRICH BERNATH & EUGENE RUBIN

The Online Master of Distance Education (MDE): Its History and Realization

ULRICH BERNATH & EUGENE RUBIN

The Online Master of Distance Education (MDE): Its History and Realization

The development of the Master of Distance Education (MDE) program began in 1995, when Ulrich Bernath, Director of the Center for Distance Education at Carl von Ossietzky University of Oldenburg/Germany, and Eugene Rubin, at that time Director of the Office for Instructional Design at the University of Maryland University College/USA conceptualized a virtual seminar for professional development in distance education to address what they perceived as two critical needs:

- The need for faculty and administrator training programs in which new distance education faculty and administrators can develop a broader perspective of the general foundations of distance education and can learn critical knowledge and skills in the field.
- The need for a global perspective among distance education faculty and administrators so that they can benefit from the knowledge of how other institutions approach distance education and solve problems, particularly in cross-cultural contexts. (cf. Bernath, 1996; Rubin, 1997)

Given that need for professional development and training in distance education, the authors submitted a proposal in 1995 to participate in the "Global Distance Learning Initiative" of the International Council for Open and Distance Education (ICDE), which, in collaboration with the AT&T Foundation, offered a series of grants for research and exploration in the area of distance education. They were awarded a grant for 1996/97 to develop and test the "Virtual Seminar for University Faculty and Administrators 'Professional Development in Distance Education'".

1. The Virtual Seminar for Professional Development in Distance Education

The Virtual Seminar was offered in 1997 as a successful experiment, and in 1998 two further Virtual Seminars were run on a self-supporting basis. The three Virtual Seminars attracted 127 faculty and distance education administrators from 24 different countries.

The teaching faculty as well as most of the participants, experienced for the first time a virtual seminar, organized as an asynchronous communication process in an online learning environment.

Formal and informal evaluations of the Virtual Seminars took place externally as well as internally. During the course of the Virtual Seminars evaluation reports and experiences were published in various articles (cf. Fritsch, 1997; Bernath, 1998; Bernath & Rubin, 1998a, 1998b, 1999, and 2001). A final report and documentation of the first Virtual Seminar has also been published (cf. Bernath & Rubin (Eds.). 1999) and reviewed (cf. Beaudoin, 1999). It contains all of the components of the project's Website including a complete transcript of all the seminar discussions and participant projects, as well as the formal evaluations of the project and the web server statistics.

Much of what is described below about the Virtual Seminar can be found in the mentioned publications. Our experiences were subsequently shown to be important and represent the values and methodology of our successive efforts. The experiences with and reflections on the Virtual Seminar helped to shape the future pedagogy of the Master of Distance Education program.

1.1. The Curriculum of the Virtual Seminar

The curriculum of the Virtual Seminars was conceived as a mix of both theory and practice. The concept of "theory" was a broad one, which encompassed the foundations of distance education (its history and formal educational theories), a broad conceptual look at national, cultural and institutional structures, and an overview of the effect of technology on the field. These were broad categories of discussion, and represented an attempt to get new distance educators as well as program directors in distance education to appreciate how distance education had evolved and to identify the important influences and issues of the present.

The idea was to ask top experts within the field of distance education to act as an expert mentor in each of the four areas of "theory" (see the syllabus outline below). Our four experts were Börje Holmberg for the *Foundations*, Otto Peters for the *Theories*, Tony Bates for the *Technology*, and Gary Miller for the *Institutional Models and Organizational Trends in Distance Education* modules. It was assumed that participating faculty and administrators would need a strong reason for their continuing involvement in the Virtual Seminar and that the presence of these top "name" experts would act not only as a direct source of information and opinion within each topic area, but also be a "motivator". We learned that the involvement of our distinguished experts in the discussions (with their readings and their live participation) were the key ingredients which had the most relevance in achieving the goals of both the students and the organizers of the Virtual Seminar.

Table 1: The Syllabus Outline of the Virtual Seminar in Fall 1998

Pre-Seminar Week	Introduction to the conferencing system
Week 1	Foundations of Distance Education
Week 2	
Week 3	Theories in Distance Education
Week 4	
Week 5	Technology of Distance Education
Week 6	
Week 7	Organizational Trends in Distance Education
Week 8	
Week 9	Distance Education Applications
Week 10	Summary and Conclusion
Open Forum	Discussion of Seminar Experiences

1.2. Experiences from the Virtual Seminar

The most striking experiences bear noting:

- **Team-teaching across time-zones**

The online learning environment and the asynchronous mode of communication in the Virtual Seminar allowed the two seminar leaders to team-teach across time zones. The seminar leaders planned and executed the seminar from their respective home universities across the Atlantic. This, in fact, turned out to be one of the hidden objectives of the seminar; to test whether this kind of Internet collaboration was feasible.

- **Knowledge-building communities**

The Virtual Seminars featured a "visiting expert" model, a unique opportunity to interact with distinguished scholars and practitioners such as Börje Holmberg, Otto Peters, Gary Miller, and Tony Bates for live interaction with the participants during an assigned period of time within the syllabus of the Virtual Seminar.

Otto Peters observed that these seminars appeared to be virtual knowledge-building communities (cf. Peters, 1998). While this is not a new concept in the literature on computer-mediated communication (cf. Scardamalia & Bereiter, 1994), Peters' observation summed up quite well the experience of most of the participants involved in the seminars (cf. Otto Peters in this volume).

Each seminar was a community in which the participants met, talked, agreed, sometimes strongly disagreed, sympathized, empathized, and formed relationships (several of which have lasted beyond the end of the seminars). And like other types of communities, each seminar was different from the others. Each had its own "feel", its own pace, group dynamics, and its own emphasis on content matters. It was clear that the individual personalities of the participants and their backgrounds played a role in how the community functioned.

Thus, the Seminar's design was one of a meeting of peers and not one of a relationship between students and teacher. The seminar leaders were well aware that they were dealing with qualified professionals, who were actively employed in academia, business, and/or government.

- **The cross-cultural dialogue**

Another goal of the Virtual Seminar was to enable a cross-cultural sharing of experiences, ideas, and opinions from participants from all over the world. This was deemed to be a potential positive outcome because a) distance education occurred in some manner in almost all countries of the world and in a number of ways, while using a wide variety and different levels of technology; b) distance education was increasingly becoming a world-wide enterprise in that courses could be delivered almost anywhere in the world; and c) the cultural and regional bias that each participant brought to the discussion would result in a broader and deeper learning.

With participants from 24 countries of origin, the three seminar experiences indirectly supported the above supposition that the cross-cultural aspects of the seminar would result in positive outcomes. By being globally accessible via the Internet, the content and interaction allowed participants to differentiate and generalize across cultural borders and among the diverse practices within the field of distance education. It gave depth to the learning and forced the participants to think beyond their own cultural and

environmental constraints. Not only were a broad variety of opinions expressed, but these often prompted discussions that reflected a more comprehensive analysis and understanding of critical issues. This was particularly true of the technology related discussions, where participants from nations that were not highly technology enabled often came up with innovative and useful solutions to problems that did not occur to participants from high technology countries.

- **New interpretations of "activity" in a virtual seminar**

In many respects the communication processes in the Virtual Seminars appeared to be new and unknown for most of the participants at that time. From various points of view the "activity" of participants in a virtual seminar became a matter of research.

The notion of "witness learning" (Fritsch, 1997) was introduced to interpret positive evaluation results of participants with low or no visible activity levels, which then led to further studies on the "invisible learner" (cf. Beaudoin in this volume) in order to better understand invisible activities that remain "behind the screen".

Helmut Fritsch, the formal evaluator for the first Virtual Seminar, looked at both the on-screen participation in the seminar as well as the questionnaire data from the participants. What struck him most was the discrepancy between measurable, visible participation (appearing on the screen with postings during the discussions) and the self reporting of many of the participants that they were “active”, only they did not “say” anything. In other words, many of the participants reported that they regularly read the discussion (sometimes every day), but for a variety of reasons chose not to actively submit a written contribution. It was clear that if one only considered the written contributions, the participation rate appeared to be only about 50% (and even then, not at all times). Yet, it also seemed clear that many whom we regarded as functional drop-outs were not. At the end of the seminar these non-contributors reported that they had learned considerably from the seminar. Fritsch (1997) coined the term "witness learning" to indicate that these “passive” participants were in fact active learners, and that they reported to have learned from witnessing the interactions among the "active" participants, leaders, and experts.

The notion of the "ripple effect", coined by Bernath, (cf. Bernath & Rubin, 2001) was introduced to better understand a specific characteristic of asynchronous communication, in which postings to the discussions in computer conferences seemed much like throwing a stone into the water (the incoming messages) and creating ripples that expand outward in each recipients head (pondering on the content of the message). In asynchronous seminar discussions one can "work" on the answer to be given. This pondering allows one to react whenever one feels ready and while doing so, to go in-depth and raise new ideas and notions in the seminar. Furthermore, the written contributions to the discussions remain and have effects on later discussions. The asynchronous computer conference to a certain extent appeared to be a renaissance of the written word in communication.

- **The volume of interaction**

All participants of the three Virtual Seminars experienced the sheer volume of the interaction in the Virtual Seminars as formidable. Participation data were quite deceptive.

The first seminar's data showed that the average length of a comment posted by a participant to the discussions during the weeks with a "visiting expert" was 187 words (with a range of 76 to 477 words), which fills half of a typical single spaced typewritten

page of about 350 words. Each participant contributed an average of only one comment in each of the ten weeks. Yet this modest amount of postings, when multiplied by 43 participants, resulted in over 66,000 words in ten weeks and an equivalent of more than 160 typewritten pages. The empirical data clearly show that online activity can be overwhelming to both the teacher and the student (see Table 2, 3, and 4). Consequently, all participants in an asynchronous Virtual Seminar need to develop new ways and means to manage such an unknown flow and volume of written communication.

Our data suggested that 40+ participants may be too high for the type of virtual seminar with its emphasis on teacher-student and student-student interaction. Our concerns about work and information overload in computer-mediated learning and teaching were very much in line with earlier findings compiled in Harasim, Hiltz, Teles & Turoff (1995).

Table 2: Numbers of Words Contributed to the First Virtual Seminar (Jan – March 1997)

	Words
Bernath/Rubin (as a team)	10,765
Bernath	8,472
Rubin	9,483
Total Visiting Experts	26,937
Total Leaders and Visiting Experts	61,178
Total Participants	66,324
Total for the Seminar	127,502

Table 3: Participation Patterns in the Virtual Seminar No 3 (Sep - Nov 1998)

Module	contributions in numbers by			participants (N=41)		contributions in KB [4]	
	experts	participants	Seminar Leaders	„active“ [1]	% of all contributions [2]	total	average
Foundations in DE with Börje Holmberg	40	140	10+12 [3]	25	69	356	1.8
Theories of DE with Otto Peters	40	66	10+10	17	52	290	2.3
Technology in DE with Tony Bates	28	127	8+10	19	73	312	1.8
Organizational Trends in DE with Gary Miller	26	42	9+12	11	48	176	2.0

1) "Active" participants here are defined as those who participate in the online discussion and appear "on screen."

2) The % of contributions is the participants' portion of all contributions posted in each respective Module.

3) The Seminar Leaders contributed as moderators (first number) and individually as discussants (second number).

4) KB= kilobytes

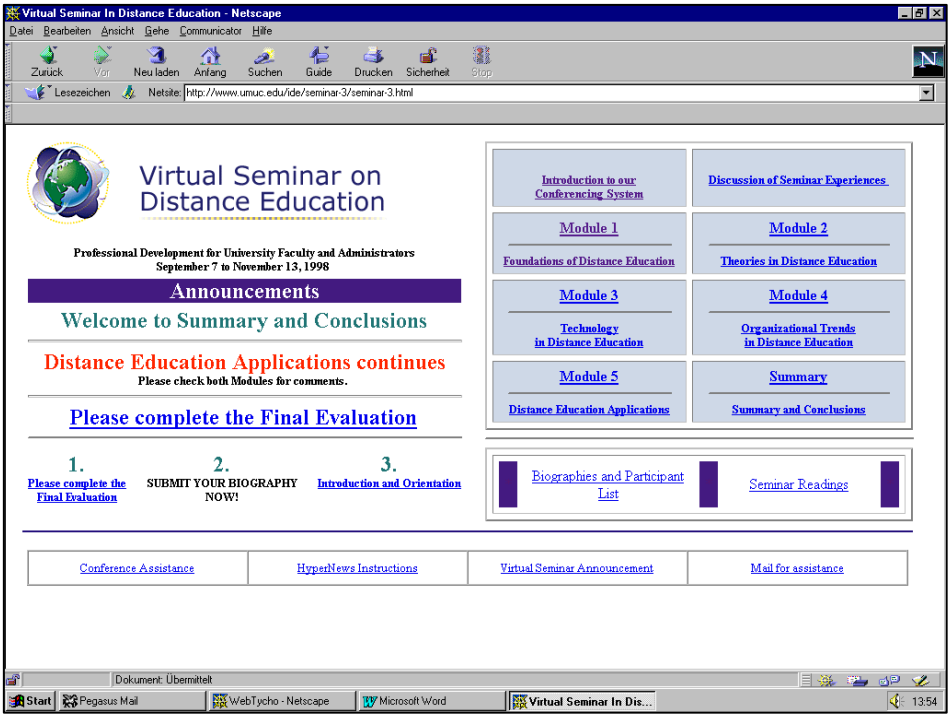
Table 4: Comparison of Participant's Participation Patterns in Three Virtual Seminars with Invited Experts

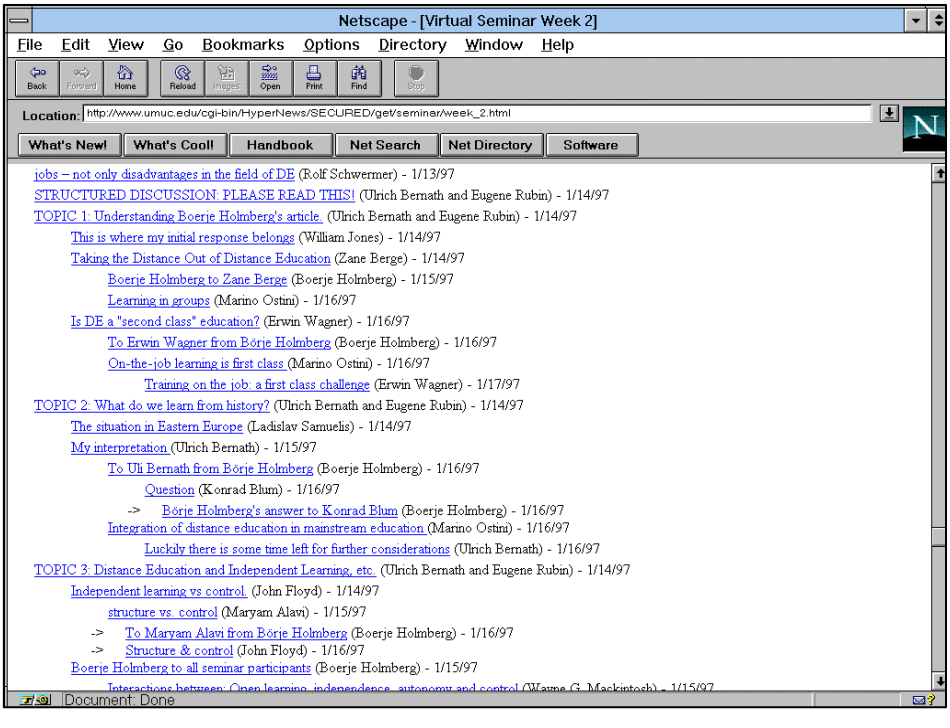
Modules with visiting experts	1997			1998 I			Rescheduled sequence of Modules	1998 II		
	Partici-pants	Participants' contributions		Partici-pants	Participants' contributions			Partici-pants	Participants' contributions	
	(N=43)	No.	%*	(N=43)	No.	%*		(N=41)	No.	%*
Foundations in DE with Boerje Holmberg	27	81	64	28	83	59	Foundations in DE with Boerje Holmberg	25	140	69
Institut. Models of DE with Gary Miller	25	50	57	23	79	69	Theories of DE with Otto Peters	17	66	52
Theories of DE with Otto Peters	18	27	44	14	83	60	Technology in DE with Tony Bates	19	127	73
Technology in DE with Tony Bates	20	34	61	15	78	63	Org. Trends in DE with Gary Miller	11	42	48
Average	22,5	48		20	81			18	94	
Total		192			323				375	

** The % of contributions is the participants' portion of all contributions posted in each respective Module.*

- **The impact of the new technology**

The web-based conferencing system selected was HyperNews, which is a Unix-based "threaded" system. The web-based seminars were positive examples of the environment for which the participants were being trained (see the following screen shots from the Virtual Seminars in Fall 1998 and Spring 1997). This software was chosen because it was easily accessible through a web browser on a minimally configured system. Nevertheless, a few participants with slow connections faced technical problems.


Virtual Seminar In Distance Education - Netscape
Datei Bearbeiten Ansicht Gehe Communicator Hilfe
Zurück Vor Neu laden Anfang Suchen Guide Drucken Sicherheit Stop
Lesezeichen Netsite: http://www.umuc.edu/ide/seminar-3/seminar-3.html
Virtual Seminar on Distance Education
Professional Development for University Faculty and Administrators
September 7 to November 13, 1998
Announcements
Welcome to Summary and Conclusions
Distance Education Applications continues
Please check both Modules for comments.
Please complete the Final Evaluation
1. Please complete the Final Evaluation
2. SUBMIT YOUR BIOGRAPHY NOW!
3. Introduction and Orientation
Introduction to our Conferencing System
Discussion of Seminar Experiences
Module 1 Foundations of Distance Education
Module 2 Theories in Distance Education
Module 3 Technology in Distance Education
Module 4 Organizational Trends in Distance Education
Module 5 Distance Education Applications
Summary Summary and Conclusions
Biographies and Participant List
Seminar Readings
Conference Assistance
HyperNews Instructions
Virtual Seminar Announcement
Mail for assistance
Dokument: Übermittelt
Start Pegasus Mail WebTycho - Netscape Microsoft Word Virtual Seminar In Dis... 13:54


Netscape - [Virtual Seminar Week 2]
File Edit View Go Bookmarks Options Directory Window Help
Back Forward Home Reload Images Open Print Find Stop
Location: http://www.umuc.edu/cgi-bin/HyperNews/SECURED/get/seminar/week_2.html
What's New! What's Cool! Handbook Net Search Net Directory Software
jobs – not only disadvantages in the field of DE (Rolf Schwermer) - 1/13/97
STRUCTURED DISCUSSION: PLEASE READ THIS! (Ulrich Bernath and Eugene Rubin) - 1/14/97
TOPIC 1: Understanding Boerje Holmberg's article. (Ulrich Bernath and Eugene Rubin) - 1/14/97
This is where my initial response belongs (William Jones) - 1/14/97
Taking the Distance Out of Distance Education (Zane Berge) - 1/14/97
Boerje Holmberg to Zane Berge (Boerje Holmberg) - 1/15/97
Learning in groups (Marino Ostini) - 1/16/97
Is DE a "second class" education? (Erwin Wagner) - 1/16/97
To Erwin Wagner from Börje Holmberg (Boerje Holmberg) - 1/16/97
On-the-job learning is first class (Marino Ostini) - 1/16/97
Training on the job: a first class challenge (Erwin Wagner) - 1/17/97
TOPIC 2: What do we learn from history? (Ulrich Bernath and Eugene Rubin) - 1/14/97
The situation in Eastern Europe (Ladislav Samuelis) - 1/14/97
My interpretation (Ulrich Bernath) - 1/15/97
To Uli Bernath from Börje Holmberg (Boerje Holmberg) - 1/16/97
Question (Konrad Blum) - 1/16/97
-> Börje Holmberg's answer to Konrad Blum (Boerje Holmberg) - 1/16/97
Integration of distance education in mainstream education (Marino Ostini) - 1/16/97
Luckily there is some time left for further considerations (Ulrich Bernath) - 1/16/97
TOPIC 3: Distance Education and Independent Learning, etc. (Ulrich Bernath and Eugene Rubin) - 1/14/97
Independent learning vs control. (John Floyd) - 1/14/97
structure vs. control (Maryam Alavi) - 1/15/97
-> To Maryam Alavi from Börje Holmberg (Boerje Holmberg) - 1/16/97
-> Structure & control (John Floyd) - 1/16/97
Boerje Holmberg to all seminar participants (Boerje Holmberg) - 1/15/97
Document: Done

1.3. Conclusions from the Virtual Seminar

Our conclusions from the Virtual Seminar experience became crucial for the development of the Master of Distance Education. In essence we learned, that:

- A virtual seminar involves reading and writing and this demands much of a participant's time. The written contributions in the asynchronous discussion process differ from the synchronous and flighty chat, and are fundamentally different from a conventional seminar. Engaging in a virtual seminar and using computer conferencing is a much more reflective process than face-to-face interaction (as already mentioned with respect to the "ripple effect"). One's thoughts are typed, reread, edited and/or added to and even spell-checked. After carefully inspecting what has been written, the work is then submitted for others to read. These written words are recorded and thus persist. They can be read and reread by others long after the end of the seminar.
- The discussion process in the Virtual Seminar needs direction and moderation to make the best use of the opportunities offered by media and technology. In particular, it is essential to get as many activities as possible to the "surface of the screen". There is also an emotional component to the seminar as well. Participants are not only positively or negatively affected in the discussions, but also reported the establishment of varying degrees of personal relationships with fellow participants. In our opinion this emotional component was critical to the success of the seminar. The positive results of the Virtual Seminar likely correlate with the interest of the participants in their own growth of knowledge and acquisition of skills. Clearly the relevance of the content is related to the participant's persistence as well as their attitude, and our data indicated a positive affect and a continuing involvement of the participants in the process of the seminar. It is also worthwhile mentioning that the seminar experience has proven to be applicable in other contexts. We learned this e. g from participants who used HyperNews for their own teaching and from others who applied their own seminar experiences to other situations in the online learning environment.

One of the most important outcomes of the Virtual Seminar was the joint decision by the two seminar leaders and their respective institutions, the University of Maryland University College (UMUC) and Carl von Ossietzky University of Oldenburg, to pursue the design, development and delivery of a Master of Distance Education degree. The decision came directly from the original intent to develop a means to train faculty and administrators in the area of distance education in the light of the new technologies, the emerging market and growing importance of distance education worldwide.

2. The Transition from the Virtual Seminar to the MDE Program

2.1. The Planning of the Master of Distance Education (MDE) Program

The Virtual Seminar had been a collaborative endeavor of two individuals with the agreement of their respective institutions. To expand this concept both realized that they needed to more directly involve each institution. As a result of the authors' extensive collaboration on the curriculum and the structure of a possible program, an outline of a full graduate program was developed, and a proposal was made by the end of 1998 to both institutions for an online Masters program in distance education. It was originally

designed to begin within one year and the full development was scheduled to take five years. The UMUC Executive accepted the proposal and took the lead for the establishment of the Master's program, and we were asked to start the program within six months. UMUC was in a unique position to capitalize on both its international reputation as a distance education institution and its resident expertise in this discipline. Further, UMUC's ability to serve students worldwide through a well established distance education infrastructure placed it in a strong competitive position with other similar programs.

The proposal for the Master of Distance Education was submitted to the Maryland Higher Education Commission (MHEC) in March 1999 (cf. MHEC Proposal, 1999). This was a requirement for all new degree proposals in the State of Maryland. The program was consistent with UMUC's mission to provide higher education opportunities to adult, part-time students. Excerpts from the MHEC proposal can be found in the appendix to this article. It gives the reader detailed information regarding market analyses, potential needs, related programs at the time, and the program's planned goals.

In parallel to UMUC's request for approval of the Master of Distance Education program by the State of Maryland, Oldenburg University submitted a grant proposal to its respective State of Lower Saxony in Germany to receive funds for the development and testing of four courses aimed at constituting a Foundations of Distance Education certificate program as an integral part of UMUC's Master of Distance Education program.

2.2. Significant Changes to the Proposed Program

The excerpts in the appendix give the reader a sense of the issues that were put forth for the program and reflect the environment at the beginning of the program's planning. However, as in all projects, things changed as time progressed. Some of these changes are significant and the notable ones are listed below:

While the proposal was formally approved by MHEC, and UMUC formally committed itself to the program by announcing its start by the Spring of 2000, the program began without a significant investment in staff (only the program directors from the partnering institutions). Despite the fact that Oldenburg University received some funds that were approved by the State of Lower Saxony for a limited period of time (from September 1999 to December 2000), the program was from the beginning under pressure to generate revenue to justify staffing. Once the commitment was made to offer the program, there was also a commitment to provide courses in a timely manner so students could complete the program in the shortest amount of time. As a result, it was proposed that the original developmental schedule (5 years) be compressed into 2½ years to generate faster program growth.

All students are required to take the *Foundations of Distance Education* course as their first course in the program. This course was conceived with a gate-keeping function, determining the number of students that could be enrolled in the program. Thus, the capacity of this course dictated how many students entered the program. Originally, based on the experience with the Virtual Seminar and related to the concept of visiting experts, a maximum of 25 students per term was viewed as the starting capacity of the program. However, given the pressure for revenue, the capacity of the *Foundations* course was doubled (50 per term) by offering multiple sections without changing the

visiting expert model. This occurred before the program had actually started. Within one year, the capacity of the *Foundations* course was raised to 75 per term. The grant to Oldenburg University by the state government of Lower Saxony facilitated the acceleration of the developmental schedule.

2.3. The Formalization of the Partnership

The Virtual Seminar was based on a cooperation between directors of their institutions acting within their respective areas of responsibilities. Once the planning of the MDE was well underway, the relationship between the institutions needed to be addressed. Knowing that institutional agreements are often difficult and complicated, it was felt that a successful collaboration needed to be straight forward and built on a feeling of trust and in a win-win environment. Since the personal working relationship already existed as a result of the Virtual Seminar, a simple yet fair set of terms needed to be negotiated. It was agreed that UMUC would be the degree-granting institution with Oldenburg as a partner contributing a certificate and courses within this degree. Furthermore UMUC would be responsible for all of the student administration as well as for the learning management system and the web-based delivery system. Each institution would develop its respective courses and hire and manage its faculty. It was further agreed that course and faculty development would be a shared responsibility.

2.4. Course Development

The content and design of the Virtual Seminar was the basis for the initial *Foundations* course in the Master's program. The syllabus and teaching methods of this first course are directly based on those of the Virtual Seminar. The Virtual Seminar was an ideal model for a broad look at distance education and would serve as an effective introduction to the field for beginning graduate students. We planned to continue the team-teaching model and use a somewhat modified visiting expert guided structure. For us, the Program Directors and former seminar leaders, this was the logical outcome of the Virtual Seminar. However, the Virtual Seminar needed additional development in order to make it appropriate for inclusion in a graduate program. It was necessary to add assessments and to expand the content to fit a 15-week term. Furthermore the program served a broader constituency, including professionals who were involved in distance education enterprises within the educational, business, government, and not-for profit sectors.

3. The Realization of the Online Master of Distance Education (MDE) Program

In September 1999 the online Master of Distance Education (MDE) program was officially launched, and in January 2000 the program started with the first *Foundations of Distance Education* course. The complete degree program and associated certificates are offered entirely online via WebTycho, UMUC's web-based platform for course delivery. It was agreed that the pace of development would proceed according to the needs of the initial students. Since the program was aimed at a working adult population it was assumed that most students would not take more than two courses per term. This is based on UMUC's experience in other graduate programs.

3.1. Description of the MDE Program

The mission of the Master of Distance Education is to qualify present and future managers of distance education. Given that distance education - and e-learning - have expanded so rapidly in the past few years in both public and private education, as well as in the training sectors, the program educates the multitude of new managers and future leaders necessary in this field. These managers need to be qualified as leaders, since they will be required to be active advocates for distance education and training in their organizations and need to manage significant change processes that affect the entire organization.

3.1.1. Program Curriculum (as of Fall 2002)

The 36-credit MDE program consists of seven core courses and four elective courses, and the additional requirement of a final integrative project. The MDE curriculum is intentionally structured to provide students with both breadth and depth in this field of study. When UMUC and Oldenburg first joined to design the program curriculum, it was decided that an appropriate balance between the pedagogical, technological and economic aspects of distance education, and the broader theoretical, historical, and social views of this field should be sought. Thus, the program curriculum seeks to position the evolving role of distance education within a larger societal framework. Whereas many similar graduate-level programs may focus more narrowly on instructional design and development, educational technology, or administrative and management issues, the MDE takes a more multidisciplinary approach by integrating each of these subject areas. Indeed, as the program has matured, it has moved closer to a focus on leadership, which requires such a multidisciplinary approach.

MDE courses are structured as graduate-level seminars in which students and faculty are immersed in the literature, research, and scholarship from major contributors in the field of distance education. Students are challenged to critically analyze the concepts and issues they encounter in their readings and to apply their own professional experiences in the class discussions. Several other MDE courses have also incorporated the "visiting experts" model, designed to bring distance education scholars into the classroom and facilitate individual modules or short-term series of discussions.

Syllabi for the MDE courses, which are all three credits, have already been developed and are available at the MDE homepage: http://www.umuc.edu/programs/grad/mde/. Additional courses are still under development.

The seven required core courses are:

Foundations of Distance Education (OMDE 601)
The goals of the course are to provide the student with: a foundation of knowledge, skills, and attitudes that are required by a competent practitioner of distance education. Students explore the critical concepts and issues identified in the distance education literature and critically examine the history and theories of the field. The course was developed by Ulrich Bernath (Germany) and Eugene Rubin (U.S.) in collaboration with Börje Holmberg (Sweden) and Otto Peters (Germany). This course must be taken in the first term the student is enrolled in the program. It is taught in multiple sections by a team of faculty with Michael Beaudoin (U.S.), Ulrich Bernath, Thomas Hülsmann (Germany), Christine Walti (Germany/U.S.) and visiting experts Börje Holmberg (Germany/ Sweden), Otto Peters (Germany), and Michael Moore (U.S.).

Distance Education Systems (OMDE 602)
Distance education functions within the organizational structure of educational institutions, businesses, non-profit organizations and government will be examined. Students analyze operational, logistic, and regulatory systems within distance education and training organizations. A range of theories pertaining to systems in general, systems in education, systems needs in distance education, and systems approaches to organizational development are introduced. This course was developed by Eugene Rubin, and is presently taught by Inez Giles (U.S.).

Technology in Distance Education (OMDE 603)
This course explores the role of technology in the design, development, and delivery of distance education. Students critically examine the relationship between technology and the goals of the educational/training organization. Various uses of technology are explored in the areas of course development, asynchronous and synchronous distance course delivery, and management/administration. The relationship of information technology and distance education is explored, and special emphasis is placed on computer-based technologies. This course was developed by Judy Roberts (Canada).

The Management of Distance Education 1: Cost Analysis (OMDE 606)
The course places the economics of distance education in the larger context of economics of education. A variety of methodological approaches (including cost/benefit and cost/ effectiveness analysis) are applied to the distance education context. A variety of costing techniques and economic models are explored and applied to different institutional forms and levels of distance education. This course was developed by Thomas Hülsmann. It is taught by Thomas Hülsmann with visiting experts Greville Rumble (U.K.) and Tony Bates (Canada). The title of this course was changed in Spring 2003. Before that it was *OMDE 606 Economics of Distance Education*.

The Management of Distance Education 2: Leadership in D. E. (OMDE 604)
This course introduces the student to the organization, management, and administration of distance education systems. Specific issues include roles (both traditional and unique), leadership, human resource management, employee relations, the role of information technology, student support services, faculty/staff development, inter-institutional collaboration, funding, delivery systems, and policy. Both the education and business environments are explored in this course, and students gain an understanding and skills that allow them to function effectively in either type of organization. This course was developed by Eugene Rubin and Jim Gelatt (U.S.). It will be taught by Jim Gelatt and Merrily Stover (U.S.) as of Spring 2003.

Instructional Design and Course Development in Distance Education (OMDE 607)
This course examines the process of instructional design and development in a distance education and training context. Students critically evaluate the relationship between instructional design and technology. Various models of instructional and course development are considered (e.g., large vs. small scale course development, centralized vs. decentralized course development, individual faculty/author vs. team course development). Students apply the instructional development process by developing a small instructional unit. Special emphasis is given to web-based instructional design and delivery. This course was developed by Eugene Rubin and Inez Giles (U.S.). It is now taught by Som Naidu (Australia).

Student Support in Distance Education and Training (OMDE 608)
This course focuses on planning and management of learner support and interaction within modern distance education and training systems. Included are all types of tutorial and instructional assistance (mentoring, tutoring, teaching), advising and counseling services, library, and administrative services (admissions, registration, prior learning assistance, credit coordination, help desk). In this context, students explore topics such as learner retention, the role of evaluation and applied research, serving learners with special needs, and practitioners' professional development, and develop an understanding of contextual factors that determine the choice of particular learner support models. In the final course unit, students work in teams to custom design learner support services for an educational or training provider. The course was developed by Jane Brindley (Canada) and Alan Tait (UK) and is taught by Jane Brindley and Christine Walti. This course was OMDE624 until the 2002 Spring term.

Students choose four of the following elective courses:

Issues in the Delivery of Library Services to Distance Students (OMDE 611)
An overview of the design and delivery of library services and education to distance education students is provided. The course reviews the types of distance technologies used and how the library can be integrated into the delivery of courses in a variety of formats. In addition, this course covers methods for developing and evaluating library instructional materials, primarily in web-based formats, to teach distance education students library research skills. This course was developed by Ilene Frank (U.S.).

Intellectual Property and Copyright (OMDE 614)
This course will provide an overview of intellectual property issues that impact digital distance education. As both creators and users of copyrighted information, educators are affected by the rules surrounding ownership and use of information. Most distance educators are not aware of the implications of copyright law and digital delivery of materials and make preventable mistakes. This course will provide educators with a general framework for addressing issues such as ownership of electronic course materials, determining whether a work is in the public domain, proper use of copyrighted works at a distance and licensing mechanisms and processes. Prevention of plagiarism in the digital environment will also be addressed. Finally, participants will discuss whether recent legislation that has amended the Copyright Act of 1976 achieves the goal of advancing knowledge and learning. This course was developed by Kim Bonner (U.S.).

Learning and Training with Multimedia (OMDE 620)
This course focuses on the design and evaluation of multimedia learning and teaching environments in higher education settings as well as corporate training contexts. Multimedia is broadly defined as learning from verbal and visual material. Students are introduced to principles of multimedia design based on cognitive theories and constructivist approaches to learning. Pedagogical aspects of technological innovations in distance education, promises and pitfalls of multimedia learning, media selection, and computer-supported collaborative work (CSCW) will also be addressed. Students explore the characteristics, possibilities and limits of various multimedia products, develop criteria for their evaluation and design their own concept for a multimedia project. The course was taught (up to Spring 2003) by Joachim Hasebrook (Germany) as OMDE 605 and was redesigned by Hilko Donker and Olaf Zawacki (Germany), and will be taught by both beginning in Spring 2003.

Training at a Distance (OMDE 621)
This course examines the role of distance training in business, non-profit, and government organizations. Students explore a wide variety of issues, problems, and solutions in the areas of: web-based training, the economics of distance training, distance technology in the business organization, synchronous vs. asynchronous interactive tools, collaborative and problem solving tools, authoring tools, insourcing vs. outsourcing, and the role of multimedia in distance training. Specific emphasis is given to the concept of the Corporate Virtual University and its design and operation. This course was developed by Greg Kearsley (U.S.).

The Business of Distance Education (OMDE 622)
Distance Education/Training is emerging within a highly competitive environment. Not only does the manager need to know about cost effectiveness issues, but he/she also is often responsible for such issues as marketing (local, national, and, increasingly, world-wide), insourcing vs. outsourcing, balancing the strong entrepreneurial focus of distance education within more traditional service-based organizations, and whether the distance education unit should be integrated or self-supporting. The course includes emphasis on the development of business and marketing plans and the use of common business analysis tools. In addition, students explore the rapidly expanding role of private and publicly traded education companies that are marketing new distance education products and services to the consumer market. This course was developed by Eugene Rubin.

Web-Based Learning and Teaching and The Virtual University (OMDE 623)
The Virtual University is a new concept that has recently evolved as a result of the emergence of the World Wide Web as a means of delivering higher education. This course covers the brief history, definitions, and implementations of the concept of the Virtual University in both higher education, government and business. The rapidly evolving literature of web-based learning is explored, with special emphasis placed on web-based pedagogy and course design. In addition, the impact of web-based technologies is discussed. The student begins developing web-based learning environments and uses web-based communication tools. This course was developed by Yolanda Gayol (U.S./ Mexico).

National and International Policies for Distance Education in Developing Countries (OMDE 625)
This course is an exercise in stocktaking. It will examine the purposes for which distance education has been used and the audiences reached. It will analyze the roles played by international agencies including bilateral and multilateral funding agencies, the UN family, regional bodies, and specialist agencies. The goal of the course is to develop and use typologies in order to examine the advantages and disadvantages of a range of organizational models for distance education at various educational levels, relating to audience, educational purpose, and choice of technologies. This course was developed by Thomas Hülsmann in collaboration with Hilary Perraton (UK).

Technologies for Distance Education in Developing Countries (OMDE 626)
This course is explorative in character. It examines the range of educational technologies that assist institutions in reaching various off-campus audiences (from print, through broadcasting to satellite links and computer-based systems). The course will examine the use of computers in school for (a) information science and computer studies (b)

application to the general curriculum (c) access to internet (d) school linking. It will give an assessment of current and planned ventures including emerging rich-country policies and institutions, the changing role of the private sector, the role of conventional universities in relation to e-learning and the new international players (e.g. African Virtual University). The course was developed by Thomas Hülsmann.

Advanced Technology in DE 1: Synchronous Learning Systems (OMDE 631)
This is an advanced course that builds upon OMDE 603 Technology in Distance Education. The course focuses on synchronous (real time) technologies that are used for DE such as satellite broadcasting, cable channels (CATV), telephony, wireless technology (WAP), web-based technologies such as push, pull, compression, and streaming. Also, students will be introduced to synchronous tools such as MOOs, MUDs, ICQ, text and audio chat, 2D-3D, application sharing, and white board. Students critically examine instructional-led learning environments and audio and video systems such as: interactive TV, site-based videoconference, and desktop videoconference. Technical details regarding standards-based technologies, telecommunications technologies, and computer technologies are also examined so students will be able to effectively manage the implementation of these tools. This course was developed by Gila Kurtz (Israel).

Advanced Technology in DE 2: Asynchronous Learning Systems (OMDE 632)
This is an advanced course that builds upon OMDE 603 Technology in Distance Education. The course focuses specifically on asynchronous (non-real time) technologies such as computer-mediated communication (computer conferencing), e-mail, listservs, archived streaming audio and video, etc. Technical details are covered relating to telecommunications technologies, video technologies, and computer technologies to ensure that the students can effectively manage the technical implementation of these tools. This course was developed by Robert Sapp (U.S.).

The required capstone course is:

The Distance Education Portfolio and Project (OMDE 690)
Each Master's student will work towards the development of a personal Portfolio. The goal of the portfolio is to demonstrate the student's qualifications gained in the field and to provide evidence of their competencies and skills in a variety of disciplines/roles. The goal is that this Portfolio would end up being a passport to the professional world. The Distance Education Project should come from the student's experiences within the MDE program. The 690 project is designed to be an "inclusive" activity and should reflect the student's sophistication in and knowledge of the field and asks the student create an outcome that is worthy of a professional in the field. It can take many forms, including (but not limited to) a paper, a organizational case study, a course or other types of projects. This course is taught by Eugene Rubin, Michael Beaudoin, and Ulrich Bernath.

3.1.2. Graduate Certificate Programs (as of Fall 2002)

One of the unique features of UMUC’s MDE program is that students can pursue one or more graduate certificates in distance education in addition to the master’s degree. These programs are ideal for students who want to gain expertise in a particular content area related to distance education but may not want to commit to the entire degree program. Students may also choose to earn certificates en route to the degree program and can apply the appropriate credits in their entirety:

Foundations of Distance Education Certificate

- OMDE 601 Foundations of Distance Education
- OMDE 606 The Management of Distance Education 1: Cost Analysis
- OMDE 608 Student Support in Distance Education and Training
- OMDE 620 Learning and Training with Multimedia

Distance Education and Technology Certificate

Required Courses

- OMDE 601 Foundations of Distance Education
- OMDE 603 Technology in Distance Education

Elective Courses (choose two)

- OMDE 620 Learning and Training with Multimedia
- OMDE 623 Web-Based Learning and Teaching and the Virtual University
- OMDE 631 Advanced Technology in Distance Education I: Synchronous Systems
- OMDE 632 Advanced Technology in Distance Education II: Asynchronous Systems

Library Services in Distance Education Certificate

Required Courses

- OMDE 601 Foundations of Distance Education
- OMDE 603 Technology in Distance Education
- OMDE 611 Issues in the Delivery of Library Services to Distance Students

Elective Courses

- Students may choose one course from among the elective courses in the Master of Distance Education program.

Teaching at a Distance Certificate

Required Courses

- OMDE 601 Foundations of Distance Education
- OMDE 603 Technology in Distance Education
- OMDE 607 Instructional Design and Course Development in Distance Education
- OMDE 623 Web-Based Learning and Teaching and the Virtual University

Training at a Distance Certificate

Required Courses

- OMDE 601 Foundations of Distance Education
- OMDE 621 Training at a Distance
- OMDE 622 The Business of Distance Education

Elective Courses

- Students may choose one course from among the elective courses in the Master of Distance Education program.

Distance Education in Developing Countries Certificate

- OMDE 601 Foundations of Distance Education
- OMDE 606 The Management of Distance Education 1: Cost Analysis
- OMDE 625 National and International Policies for Distance Education in Developing Countries
- OMDE 626 Technologies for Distance Education in Developing Countries

3.2. Preliminary Program Outcomes

3.2.1. The MDE Students

The total number of students that successfully completed the *Foundations of Distance Education* course is 408 as of Summer 2002. These students came from 12 different countries and 37 U.S. states and territories, and U.S. military posted overseas; 43% were from the state of Maryland, 57% reside outside of Maryland. There are some students in the program that take only specific courses, but they have not been included in these figures.

A total of approximately 1,500 course enrollments in 18 courses occurred between Spring 2000 and Summer 2002. The first certificates were awarded in April, 2001 and the first Master graduates completed the program in December, 2001. As of Summer 2002, there were four Master graduates and 63 Certificate recipients. An additional eight Master graduates and 28 Certificates are scheduled to be awarded in December 2002.

The students come from a very diverse set of backgrounds. Almost all of them are presently working (usually full-time). Their present employment includes higher education, corporations (often in a training capacity), government and non-profit organizations (again, often in a training capacity), and military, with a small minority from the K-12 education sector. This range corresponds very closely with the proposed target populations at which the program was originally aimed. This, however, poses some problems while at the same time it fulfills our expectations. Given that UMUC and Oldenburg have limited funds with which to market this individual program, it has proved to be difficult to focus marketing efforts in a particular area due to this wide variety of students' backgrounds. Our initial data gathered from a questionnaire administered in the OMDE 601 class indicates that students learn about the program from a number of sources. However two appear to be the most common: by searching the internet, and from a present student. We are therefore presently concentrating our efforts on these two marketing avenues.

Initially we had difficulty predicting the degree of national and international participation in the program. However, since UMUC is a Maryland state institution, it was likely that we would attract a large number of Maryland residents. We were surprised at the national character of the MDE student body, but have been rather disappointed at the low number of international (other than the U.S.) students. Many of the non-U.S. residents are, in fact, Americans living abroad. This is probably due to several factors: 1) The program is delivered exclusively in English. 2) The tuition costs of UMUC are fairly high for non-Maryland residents. 3) Many European institutions charge little or no tuition for graduate study and thus, the MDE does not appear to be economically attractive to students from those countries. 4) There has not been any significant investment in marketing the program. While there have been some initiatives to make the program known, these have been primarily personal initiatives of the program directors, rather than their institutions.

3.2.2. Program Growth and Capacity

While the program has grown at a reasonably rapid rate and the response to the program has exceeded our initial business plan estimates, so have the resources required to support that growth. Within two years both Oldenburg and UMUC have had to add additional human resources.

Table 5: The UMUC/UNI OL Model of Collaboration (as of Fall 2002)

UMUC	Academic Resources	
	UMUC	**UNI OL**
Central Administration (services to the MDE, selected):	Graduate School	School of Education and the Center for Distance Education
• Information Technology Department with WebTycho working group and helpline 24/7 • Student Services, • Registry (student records) • Library Services with copyright clearance • Department of Marketing and Communication	• Program Chair • Program Director • 2 full-time faculty • 8 adjunct faculty • 1 part-time secretary • 1 part-time DE Coordinator	• Academic Chair • Executive Director • 2 full-time faculty • 8 adjunct faculty • 1 part-time staff • 1 part-time "faculty support" person

Table 5 shows that each institution has added both full-time and adjunct faculty as well as management staff beyond the initial Program Chair/Executive Director. Thus, the initial increase in program capacity resulted in more required support, which in turn needs more students (more revenue) to finance that support. The program is now aiming at a steady state capacity of about 400 active course-taking students, that will result in enough revenue to support the necessary resources at each institution. An increase beyond that may result in the need for additional support resources, which will again, in turn, result in the need to recruit further students toward a new revised steady state.

The capacity of the program can be viewed from several perspectives. One can control capacity by creating a gate-keeping function in the first course. This is the existing strategy for the program. By limiting the number of students in this course (presently 75 each for the Fall and Spring terms and 50 for the Summer terms – or a total of 200 new students per year) we believe that we can systematically control the growth of the program. This will allow well organized course development and revision, recruitment of faculty, and effective use of new emerging technologies. The capacity of the Foundation course is an issue because this course is based on the original model of the Virtual Seminar and requires a more intensive use of human resources than most of the other courses. To date, it has relied on the use of world-renown experts, whose published works are the basis for many of the readings in the course. While this is a more expensive model than most of the other UMUC programs, it is the hallmark of the MDE program and is clearly an aspect of the educational experience that is recognized by both students and external distance education professionals.

Revenue is related to course capacity. The current maximum capacity of MDE courses is approximately 25-30 students per course. Presently, approximately 15 courses per term are offered. This number is a best estimate of the number and variety of courses that are necessary for the present students to be able to achieve their program completion plans in a timely manner. The *Foundations* course has a capacity of 75 per term. The goal is to fill the remaining 14 courses (assuming only one section of 30 students each). Therefore, the maximum revenue per term possible is based on 30 x 14 = 495 enrollments plus the 75 *Foundations* enrollments equals 570 enrollments. Present experience shows that students take approximately 1.4 courses per term. This means that approximately 410 students need to be actively taking courses each term in order to achieve 570 enrollments. Since there are presently 400+ students that have successfully completed the *Foundations*

course, this would mean that almost all of these students would need to be actively taking courses. This, in fact, is not true. A number of the students who have completed the *Foundations* course are only pursuing a Certificate, and have already completed the courses required for that goal. And others decide for various reasons, not to take a course in a particular term. Our initial data shows that the number of enrollments has been considerably below 400. We are thus offering some courses at below capacity. As more students complete the *Foundations* course, the number of active program course takers will increase, but as time progresses, the number of program completers (both certificate and degree) will rise. At some point, all other variables being equal, a steady state will be achieved. Students exiting the program (for whatever reasons) will theoretically equal the students entering the program. (A survey investigating the "stop-out" and/or "drop-out" issue in the MDE program is currently being conducted). It is our hope that the present capacity of the Foundations course (200 per year) will indeed eventually result in each course reaching full capacity. If there is additional demand, we would then offer additional sections of each course. Planning for further program growth would then occur when the demand for additional places in the Foundation course exceeds 75 per term.

3.2.3. Student Intentions

Immediately after the start of the entry *Foundations of Distance Education* course students were asked: "*Do you plan to participate in the MDE program towards graduation with a Masters degree?"* to express their initial intentions in a questionnaire. The results of all administered questionnaires from Spring 2000 through Fall 2002 are compiled in the following table:

Table 6: Results of all MDE Program Questionnaires From Spring 2000 Through Fall 2002

	"Yes"		"No"		"Undecided"		total
	N	%	N	%	N	%	
Spring 2000	50	89	4	7	2	4	56
Summer 2000	49	80	7	12	5	8	61
Fall 2000	35	73	6	12,5	6	12,5	48
Spring 2001	47	68	16	23	6	9	69
Summer 2001	19	73	3	12	4	15	26
Fall 2001	28	70	7	17,5	5	12,5	40
Spring 2002	12	60	4	20	4	20	20
Summer 2002	18	64	4	14	6	22	28
Fall 2002	22	65	9	26	4	12	34
Totals	280	73	60	16	42	11	382

The compiled data are available from 382 students who filled out the questionnaire.

Taking into account that 1) in Spring 2002 one section of the OMDE 601 course did not receive the questionnaire, and 2) there are withdrawals (predominantly) in the first weeks, we can estimate that these 382 students represent more than 80 % of all OMDE 601 *Foundations of Distance Education* course students.

On average 73 % of the students in OMDE 601, whom we regard as our beginners in the program, plan to graduate with the Master's degree. Only 16 % are not aiming for the Master's degree; some of them focus on certificates within the program. A fraction of the 16 % are studying the *Foundations* course without an explicit interest in any

formal qualification. 11% say that they are not yet decided whether they are aiming at the Masters degree, at a certificate, or neither.

When analyzing the course data of the first three years, we see that the portion of students who said "Yes, I plan to participate in the MDE program towards graduation with a Masters degree" declined from a very high level of around 80 % in the first year to around 70 % in the second year, and has now reached a level of around 65 %. Correspondingly, the number of students who do not aim for the Masters degree but for a certificate has increased. The number of uncertain students ("not decided, yet") oscillates in a range between 4 and 22 %.

The questionnaire also serves with data on the speed MDE students plan to achieve their goals. This shows that more than one third want to finish the MDE program within two years, another third within three years, and the rest within 4 to 7 years. MDE students start ambitiously.

The same questionnaire is presented again at the end of the OMDE 601 course in order to see if the experiences in this first course cause a change in our students' plans. The overall results show that there is little change with respect to the overall goals towards formal qualification. There is a significant change in the time frame to reach the goals. Fewer students plan to finish their program within only two years. There is a shift from two and three years to a four year plan. This longer term planning may also have some impact on the mild shift from pursuing a MDE degree to aiming for a certificate.

3.2.4. Extending Access

As one of very few graduate programs of its type, the MDE has provided unprecedented access to professionals who wish to pursue graduate-level work in this field. One of the values of the MDE program is extending access to education and training. There is no theoretical limit to the number of students that can join the program. The program, at this stage, is prepared to accept all qualified applicants.

Due to this open university access for working adults that have been out of school for a number of years some students come to the program with skills that are not quite appropriate for academic work. The program's faculty developed several tools for the MDE students. Specifically, Judy Roberts and Jane Brindley developed "*Getting Started in the MDE Program*", which advises students regarding faculty expectations as well as recommending various important organizational and study skills. Judy Roberts developed a guide to the APA style (required by the UMUC Graduate School). And UMUC already offered two critical mini-courses: one on *Academic Writing* (which is voluntary) and the other on *Library and Information Literacy Skills* (which is required of all students). In addition, there is a comprehensive guide to WebTycho (UMUC's online learning management platform), which teaches students how to use the software and navigate through their online classes. Finally, the graduate school offers some basic instruction on the issue of plagiarism and the importance of original work.

3.2.5. The International MDE Faculty

In addition to providing critical opportunities for student access the MDE program, the asynchronous program form has made the creation of an international body of faculty members and visiting experts possible. They include the following:

- Dr. Tony Bates, Director, Distance Education and Technology, Continuing Studies, University of British Columbia/Canada (Visiting Expert, OMDE 606)
- Dr. Michael Beaudoin, Professor of Education, University of New England/USA (Faculty, OMDE 601 and 690)
- Dr. Ulrich Bernath, Director, Center for Distance Education at Carl von Ossietzky University of Oldenburg/Germany (Faculty, OMDE 601 and 690)
- Dr. Kim Bonner, Director, Center for Intellectual Property, UMUC/USA (Faculty, OMDE 614)
- Dr. Jane Brindley, University of Windsor/Canada (Faculty, OMDE 624 and 608)
- Dr. Hilko Donker, Technical University of Dresden/Germany (Faculty, OMDE 620 beginning Spring 2003)
- Ilene Frank, Reference Librarian, University of South Florida/USA (Faculty, OMDE 611)
- Dr. Yolanda Gayol, Program Director, Master of Distance Education, University of Maryland University College/USA (Faculty, OMDE 623)
- Dr. Jim Gelatt, Program Director, General Management Programs, University of Maryland University College/USA (Faculty, OMDE 604 until Fall 2002)
- Dr. Inez Giles, University of Maryland University College/USA (Faculty, OMDE 602 and 607)
- Dr. Joachim Hasebrook, President, efiport AG/Germany (Faculty, OMDE 620 until Spring 2002)
- Dr. Dr. h.c. (mult.) Börje Holmberg, Former Rector, Private FernFachhochschule Darmstadt/Germany & Professor Emeritus of Education, FernUniversität/Germany & Sweden (Visiting Expert, OMDE 601)
- Thomas Hülsmann, University of Oldenburg/Germany (Faculty, OMDE 601, 606, 625 and 626)
- Dr. Greg Kearsley, Online Education Consultant/USA (Faculty, OMDE 621)
- Dr. Gila Kurtz, Pedagogical Director, Bar-@-Learn Center, Bar Ilan University/Israel (Faculty, OMDE 631)
- Dr. Michael Moore, Professor of Education and Director, American Center for the Study of Distance Education; Editor, *American Journal of Distance Education*, The Pennsylvania State University/USA (Visiting Expert, OMDE 601)
- Dr. Som Naidu, Assistant Professor, University of Melbourne, Editor *Distance Education*/Australia (Faculty, OMDE 607)
- Dr. Hilary Perraton, Director, International Research Foundation for Open and Distance Learning (IRFOL)/Cambridge/England (Visiting Expert, OMDE 625)
- Dr. Dr. h.c. (mult.) Otto Peters, Professor Emeritus of Education, Founding Rector, FernUniversität Hagen/Germany (Visiting Expert, OMDE 601)
- Judy Roberts, President, Judy Roberts & Associates/Associés, Inc/Toronto/Canada (Faculty, OMDE 603)
- Dr. Eugene Rubin, Associate Dean, Graduate Studies and Program Chair, Master of Distance Education, University of Maryland University College/USA (Faculty, OMDE 601 until Summer 2000, OMDE 602, 604 until Fall 2002, OMDE 607 until Summer 2002, OMDE 622, 690)

- Dr. Greville Rumble, Professor, Open University; Former Editor, *Open Learning/UK* (Visiting Expert, OMDE 606)
- Robert Sapp, Director for Learning Applications Development and Support (LeADS), University of Maryland University College/USA (Faculty, OMDE 632)
- Merrily Stover, Consultant and Past Assistant Dean, School of Undergraduate Studies, University of Maryland University College/USA (Faculty, OMDE 604 beginning Spring 2003)
- Christine Walti, University of Oldenburg/Germany (Faculty, OMDE 601 beginning Spring 2003)
- Olaf Zawacki, University of Oldenburg/Germany (Faculty, OMDE 620 beginning Spring 2003)

When confirming his participation as a visiting expert in OMDE 601 *(Foundations of Distance Education*), Michael Moore wrote the following to Ulrich Bernath in February of 2001: "And by the way, congratulations on putting together such a fine global faculty. It is the kind of thing I have been predicting and advocating for many, many years, but nobody is making progress in the way you appear to be ... I am happy to support you. This is the way of the future" (M. Moore, personal communication, February, 5, 2001).

The "visiting experts" concept is designed to bring distance education scholars, researchers, and practitioners into the online classroom to facilitate a course module or short-term discussion on their topic of expertise. Students read books and articles written by their visiting experts and then have the opportunity to directly interact with them online in class. This approach is important not only to ensure that the program curriculum reflects latest developments in the field, but to support students in broadening their interests, understand the importance of research, and make theory-to-practice connections.

3.2.6. Contributions to Research and Scholarship

MDE faculty have been editors of internationally renowned journals in distance education, written articles and books in their respective areas of expertise, and received awards for their work in the field.

One of the more significant outcomes of the Master of Distance Education program is the creation of a series of publications that directly supports specific courses in the program, as well as their contribution to overall scholarship in the field of distance education. Oldenburg's Arbeitsstelle Fernstudienforschung (ASF) - (Center for Research in Distance Education) - a joint unit of the Center for Distance Education and the School of Education, provides an edited series for the dissemination of research and scholarship primarily in the context of the MDE. The ASF Series (cf. http://www.c3l.uni-oldenburg.de/20699.html) currently offers the following books as readings in MDE courses:

- Vol. 2: Thomas Hülsmann, *The cost of open learning: a handbook.* This handbook is designed to help educational managers use open and distance learning. It examines the comparative costs of various educational technologies based on eleven case studies from six European countries.
- Vol. 4: Börje Holmberg, *Distance Education in Essence. An Overview of Theory and Practice in the Early Twenty-first Century*. The author carefully looks into the character and applications of distance education, and presents a revised version of his much discussed overarching theory. Particular attention is paid to the innovative

character of distance education and the role of technology in today's practice. Technology is regarded as an auxiliary means that may serve educational purposes, and not as important in itself.

- Vol. 5: Otto Peters, *Distance Education in Transition – New trends and challenges*. The author examines exciting changes and promising innovations in distance education which emerge as a result of far-reaching societal changes and spectacular advances of the information and communications technology. He widens and deepens his pedagogical approach to distance education and preserves the legacy of distance education in a new era.

In preparation are the following volumes by: Michael Beaudoin, on critical issues in distance education leadership; Greville Rumble, papers and debates on the economics and costs of distance education and e-learning; Thomas Hülsmann, on distance education in developing countries; and Jane Brindley, on learner support in distance education and training. The Learning Market Place, UMUC's bookshop, is the official distributor of the series' editions in North America.

Additional faculty research initiatives focus on distance education cost analysis (cf. Hülsmann, 2002, in this volume), student success factors (cf. the following paragraph in this chapter), asynchronous communication processes and academic discourse (cf. Peters, 2002, Hülsmann, 2002, and Beaudoin, 2002, in this volume), faculty support for online teaching (cf. Brindley, Roberts & Zawacki, 2002, in this volume).

Despite their global dispersion, MDE faculty members have had opportunities to meet with each other face-to-face for program planning, collaboration, and professional development. The first program-wide faculty meeting was held in July 2000 in Frankfurt, Germany; the second was held in March 2001 in Oldenburg, Germany, in conjunction with the 20th ICDE World Conference; a third meeting for professional development was held in January 2002 in Oldenburg, and the latest meeting was held in November 2002 in conjunction with the 8th Sloan-C Conference in Orlando.

3.2.7. Student Satisfaction

As in most other universities, there is a considerable concern for students' satisfaction with the courses. While student satisfaction does not necessarily measure the achievements of course objectives, skills, knowledge or competencies it is often used to provide a general sense of customer satisfaction; and measures of student satisfaction are also often used as an instrument of faculty evaluation.

3.2.7.1. The Course Evaluation of OMDE 601 as an Example

Since the MDE program's initial implementation in spring 2000, formal student feedback has been received for every offered course – a total of 50 course sections (as of Summer 2002). UMUC's formal evaluation process is used in all of its courses. Students rate their experiences on a five-point Lickert scale from 1=strongly disagree to 5=strongly agree. The data are based on seven items on "Quality of Instruction"; 13 items on "Quality of Course Design and Content"; seven items on "Overall Satisfaction"; and three items on "Impact of Technology for Online and Web-enhanced Courses".

The "overall course rating" comprises the following 17 (out of 30) statements:

- The course was intellectually challenging.
- Course objectives were clearly stated in the syllabus.
- The grading criteria were clearly stated in the syllabus.
- Assignments were valuable in helping me master the stated course objectives.
- The required textbook(s) was/were valuable in contributing to my overall understanding of the course content.
- Other course materials (not texts) were valuable in contributing to my overall understanding of the course content.
- The course enabled me to write more effectively.
- This course helped me develop or improve my computer skills.
- This course helped me to effectively use research resources (e.g., library databases, Internet search engines) to complete course requirements.
- This course encouraged me to develop a more global or intellectual perspective.
- This course enabled me to improve my critical thinking skills.
- I would recommend this course to other students.
- I would recommend this faculty member to other students.
- The structure/design of the course contributed to my overall learning.
- This course encouraged student-to-student interaction.
- This course enhanced faculty-student interaction.

The weighted average mean of all 50 MDE course sections taught from Spring 2000 through Summer 2002 with a total of 1,123 participating students in the evaluation is 3.92.

The *Foundations of Distance Education* course received a weighted average mean of 4.17 for the overall rating of the course. The 355 students participating in the evaluation represent 87 % of all finally graded (n=408), and 75 % of all enrolled (n=471) students. The evaluation takes place about three to four weeks before the end of the 15-weeks-long course. The *Foundations* course with a range of ratings between 4.02 and 4.55 and its weighted average mean of 4.17 offers a highly satisfactory start into the program

A more detailed picture of the highly sustained level of "student satisfaction" in the *Foundations* course can be seen in the following table, which includes selected items and their evaluative results. Worth mentioning is the fact that the *Foundations* course sections are taught by different faculty and faculty teams:

Beaudoin with Moore
Bernath with Holmberg and Peters
Bernath & Rubin with Holmberg and Peters
Bernath & Walti with Holmberg and Peters
Hülsmann with Holmberg and Peters
Hülsmann & Rubin with Holmberg and Peters
Hülsmann & Walti with Holmberg and Peters

Most sections reached their capacity limit: The maximum number of students enrolled in one section was 36 in Summer 2000, and the minimum was 16 in one section of the Summer course in 2001.

Table 7: Selected items on "student satisfaction" in the Course Evaluation of the Foundations of Distance Education (OMDE 601) course sections from Spring 2000 through Summer 2001 on a five-point scale from 1=strongly disagree to 5=strongly agree (results = mean)

OMDE 601	Sp00 9040 N=15	Sp00 9041 N=19	Su00 9040 N=22	Su00 9041 N=15	Fa00 9040 N=26	Fa00 9041 N=29	Sp01 9040 N=24	Sp01 9041 N=25	Sp01 9042 N=24	Su01 9040 N=24	Su01 9041 N=12
The instructor was well prepared	4.80	4.37	4.55	4.53	4.12	3.97	4.39	3.96	4.21	4.54	4.83
The instructor stimulated my interest	4.80	4.37	4.50	4.40	4.12	4.14	4.00	3.80	4.21	4.42	4.50
The instructor was accessible to me	4.80	4.28	4.71	4.54	4.19	3.79	4.05	3.92	4.30	4.71	4.75
The course was intellectually challenging	4.81	4.26	4.59	4.47	4.23	4.31	4.22	4.12	4.33	4.54	4.75
Course objectives were clearly stated in the syllabus	4.67	4.26	4.57	4.53	4.19	4.48	4.46	4.64	4.29	4.75	4.67
The course encouraged me to develop a more global or intercultural perspective	4.73	4.16	4.45	4.50	4.38	4.31	4.17	3.83	4.29	4.43	4.67
The course enabled me to improve my critical thinking skills	4.44	3.89	4.43	4.40	4.04	4.21	4.25	3.84	3.92	4.42	4.42
I would recommend this course to other students	4.33	4.25	4.43	4.53	4.08	4.07	4.17	4.16	4.04	4.21	4.17
I would recommend this faculty member to other students	4.79	4.26	4.40	4.53	4.04	4.14	4.29	3.60	4.33	4.42	4.50
My personal goals were met by the course	4.73	4.16	4.43	4.53	4.04	4.10	4.17	4.00	4.03	4.27	4.33
My professional goals were met by the course	4.73	4.16	4.59	4.43	4.54	4.38	4.29	4.44	4.08	4.30	3.92
The course encouraged student-to-student interaction	4.69	4.10	4.48	4.40	4.12	4.03	4.35	4.28	4.21	4.25	4.17
Rating "overall courses"	4.55	4.17	4.34	4.35	4.06	4.05	4.24	4.10	4.08	4.31	4.25

The strength of UMUC's standardized online course evaluation (conducted in all courses) is, on the macro level, the large number of participating students and thus a kind of benchmarking for all courses and programs, which e.g. corresponds with the Sloan-Consortium's quality in online education and effective practice criteria (2002). On the micro level it allows one to isolate items or groups of items and to analyze them from course to course and from term to term.

Apart from the methodological weaknesses of a five-point-Lickert scale (cf. Saal, Downey & Lakey, 1980) the shortcomings of this evaluation tool are, however, that they do not relate to course particularities. The item "This course helped me develop or improve my computer skills", may apply to some or even most of UMUC's courses, but it does not apply to the *Foundations of Distance Education* course. The course content deals with the history, principles, theory, and institutions of distance education and thus the course objectives do not explicitly promote the development or improvement of computer skills. As a result students can not agree with this statement, and in fact, the mean of this item usually ranges around 3.0.

Other characteristics of the *Foundations of Distance Education* course could also intervene negatively with the rating:

- OMDE 601 is the course of the MDE program that is strongly recommended to be taken first and lays the foundations for the program by emphasizing history, principles, theory, and institutions of distance education. Some students expect applicable content for their current needs, skills, and/or professional goals. It is difficult to lay foundations for a longer lasting degree program and at the same fulfill these students' short term skill and technology oriented expectations.
- The *Foundations* course, like others in the MDE program, integrates visiting experts, who are usually the authors of the required readings. In addition some sections integrated senior students while others were taught by a team of faculty. These different situations and contexts cannot be evaluated appropriately. The standardized evaluation only reflects a standard situation: one faculty and her or his students.
- OMDE 601 is a paced course which allows group discussions, group work, and social learning processes. Some students who register for this course are not fully aware of the pacing and time commitment. They may expect an independent study format and encounter conflicts with the course, the instructor and themselves.
- OMDE 601 is a course that emphasizes the asynchronous seminar discussions in the virtual classroom, which is an unusual setting and approach to learning for some program beginners.

3.2.7.2. The 100-Points Questionnaire

With these weaknesses of the standardized course evaluation in mind, Oldenburg University developed an additional questionnaire in order to get more course specific feedback from the students. This questionnaire was also selectively used in OMDE 605 *New and Emerging Media in Distance Education*, OMDE 606 *Economics of Distance Education*, and OMDE 624 *Student Support in Distance Education*. In Fall 2002 the questionnaire was redesigned and used for all courses originating from the University of Oldenburg (OMDE 601, 606, 608, 620, 625, 626).

Students were asked to complete the questionnaire during the last week of each course. The questionnaire's intention was to identify those course elements that contributed most to a successful learning experience. A total of 100 points were allotted to be distributed amongst the following elements:

- The required reading
- Additional recommend reading
- Recommended URL's
- The course management of the seminar leader(s)
- Communication with the seminar leader(s)
- Communication with the visiting expert(s)
- Communication with fellow students
- Witnessing the written interactions. (Reading, but not responding)
- Participating in study group work
- The Foundations Café
- The assignments
- The learning environment WebTycho
- Other

An open question with unlimited space "Which are the main critical aspects of the course you would like to comment on" was added.

The students were asked to provide their names on the questionnaire in order to avoid multiple submittals. However, it was stated that anonymity would be observed and the names did not become part of the evaluation.

In the case of team-teaching, communication with each of the two teachers became a distinct element of the respective questionnaire. Visiting experts were also named individually. Consequently, the numbers of items in each questionnaire ranged between 12 and 15 for which the total of 100 points was to be distributed.

Table 8: Mean Results of Each Item in the 100-Points Questionnaire in the *Foundations of Distance Education* Courses From Spring 2000 Through Summer 2002.

("To which extent did the following elements contribute to your personal success in the Foundations course? You have 100 points to be distributed among the various elements. Please give each element the amount of points (a portion of the total of 100) you regard as appropriate. Please don't exceed a total of 100 points.)

	Sp 00 N=28	Su 00 N=27	Fa 00 N=18	Su 01 N=23	Su02 N=16	Overall range min/max	Standard deviation min-max
The required reading	15.43	17.04	19.11	22.57	22.56	0 - 75	7.2 - 17.6
Additional recommended reading	5.11	4.48	3.44	3.70	4.44	0 - 20	3.4 - 5.1
Recommended URL's	3.93	1.96	2.78	1.39	4.00	0 - 20	2.1 - 4.8
The management of the course process by the seminar leader(s)	8.54	10.84	8.11	12.22	8.94	0 - 50	4.5 - 10.1
Communicating with the seminar leader (s)	14.32	11.68	8.61	8.74	13.56	0 - 30	3.2 - 7.1
Communicating with visiting expert(s)	11.47	13.76	13.78	18.92	15.44	0 - 30	3.2 - 7.5
Communicating with fellow students	6.54	4.80	7.56	7.30	5.06	0 - 65	3.9 - 13.0
Witnessing the written interactions (Reading but not responding)	7.57	9.12	7.06	5.30	6.00	0 - 35	3.6 - 7.0
Participating in study group work	5.43	4.64	7.28	2.52	2.13	0 - 20	2.3 - 5.5
The Foundations Café	2.57	1.64	3.00	1.00	1.44	0 - 15	1.9 - 3.3
The assignments	14.32	12.52	13.61	13.35	11.56	0 - 40	8.5 - 10.4
The learning environment WebTycho	3.89	7.32	5,39	2.87	4.75	0 - 35	3.7 - 9.1
Other	0.89	0.20	0.28	0.13	0.13	0 - 7	0.5 - 2.2
Total	100.0	100.0	100.0	100.0	100.0		
Comparison with rating "overall course" (see Table 7)	***4.34***	***4.34***	***4.05***	***4.29***	***4.03***		

As previously mentioned, UMUC's official course evaluation of the *Foundations of Distance Education* course resulted in overall positive ratings. The vast majority of the participating students encountered a successful learning experience in this MDE beginners course. In the so-called 100-points questionnaire these students were asked to weigh the course elements that most contributed to their success.

We see that the required readings received the highest weight with an average of 15 to 23 points out of 100, followed by communication with the visiting experts (11 – 19 points), the assignment tasks (12 – 14 points), and communication with the seminar leader(s) (9 – 14 points). Elements, which can be considered to be the main pedagogical resources for classroom-based graduate courses, appear to be similarly important constituents in the online learning environment.

The required reading is a predetermined content element, whereas recommended readings and URL's are additions to this content base, posted by seminar leader(s), visiting experts, and/or students while the course progresses.

Readings, communication processes, and assignment tasks (two or three essays and a research project in OMDE 601) are interwoven in a structured and paced model of an online course (cf. the generic syllabus at http://info.umuc.edu/mde/syllabi/syll601.html).

The seminar leader(s) introduced the readings and discussions and also summarized and wrapped up the outcomes of each module. This "management of the course process by the seminar leaders" is an important element that defines and prescribes content matters to be dealt with in the course. It should be noted that "management" contributions by the seminar leader(s) - for example giving instructions on how to proceed through the course - is distinct from postings by the seminar leader(s). These postings follow the communication processes as a result of the participants' interpretations and content construction and differ from course to course. In the *Foundations* course the "management" contributions by seminar leader(s) outweigh the participants' contributions to the communication processes by a factor of around two. (e.g., 30,000 words of "management" contributions compare with about 15,000 words of discussion in a direct teacher-student interaction throughout the course in summer 2002). The "management" contributions can be viewed as primarily one-way communication or as instruction, whereby the postings are two-way communication or "construction" that occurs in response to students' input.

The students of all above mentioned *Foundations* courses stated that the online course-specific element "management of the course process by the seminar leader(s)" (with an average of 8 – 12 points out of 100) was another important resource that contributed to their successful learning experience. One must recognize that students may not differentiate between the seminar leaders' instruction as part of the course management item and the communication item and therefore it makes sense to compile both items. Now, the seminar leaders' contributions receive an average of 17 - 23 points out of a total of 100 points, which compares with 15 - 23 points for required readings, 11 – 19 points for communication with the visiting experts, and 12 – 14 points for the assignment tasks. The size of this compiled seminar leaders' contribution could be inflated by just adding the two together.

An online course that makes every effort for intense interaction between teacher and student and is particularly supported by the integration of visiting experts, creates a situation in which "witnessing the written interaction" becomes another important element of the online learning experience (5 – 9 points in average). More on the notion of "witnessing" cf. Fritsch, 1997, and Beaudoin in this volume.

In such a communication-rich online learning environment "communicating with fellow students" receives relatively low 4 – 7 points in average as an element that contributes to the successful learning experience in this *Foundations* course.

"The learning environment WebTycho" is a unique feature in the online environment provided to students. It's rating ranges between 3 - 7 points on average. One should note that almost all students share a first time experience with this learning management system. It serves as a tool for the *Foundations* course and thus makes it an element of relatively minor importance for the success of the students' learning experience.

The *Foundations* course offers two study group sessions, which are designed to support the social dimension of the learning process. They are voluntary exercises and in most cases not graded. Under these circumstances "participating in study group work" resulted in a range between 2 and 7 points on average out of 100 points.

The above discussed findings show similarities over a series of courses. They allow for some generalizations regarding the importance with which students weigh the contributing elements to their successful learning experiences.

As already mentioned these courses were taught by different faculty teams, which taught their courses based on common syllabus, hence a similar content and approach. Despite changing teams the mean results for each evaluated element were similar. Remaining differences could be related to changing teams or be a result of course dynamics caused by spontaneous communication processes between the students and their teachers and the students with each other.

That is a general impression. If we look into each individual's preferences and ratings not many students are similar in their judgements. The range of ratings, as already shown in Table 8, is extreme. These results are underpinned by the extremely high standard deviations.

The following Table 9 shows the raw data of 28 students in one course who rated 15 elements (E1 – E15) and illustrates the differences between the students and their ratings of the various elements. The heterogeneity of the micro data can be found in all courses and in all cases where the 100-points questionnaire was administered.

Table 9: Row Data of 28 Students Who Rated 15 Elements (E1 – E15) in the 100-Points Questionnaire

E1	E2	E3	E4	E5	E6	E7	E8	E9	E10	E11	E12	E13	E14	E15
20	10	10	10	5	5	5	5	0	0	10	0	20	0	0
20	5	3	10	5	5	5	5	5	5	10	5	15	2	0
25	5	1	5	5	5	5	5	0	25	4	0	15	0	0
20	2	2	10	5	5	15	15	5	5	4	2	5	5	0
20	2	2	20	5	5	10	10	5	5	2	2	6	6	0
18	1	5	1	1	1	1	1	13	10	13	1	18	16	0
10	6	7	12	7	6	8	8	6	7	2	4	10	7	0
6	6	6	3	4	4	4	4	6	4	20	1	30	1	1
10	5	5	20	5	5	10	10	5	5	0	0	15	5	0
10	5	0	10	10	10	10	10	5	5	10	5	5	5	0
25	7	0	5	2	2	5	5	1	6	0	15	10	10	7
15	5	5	5	15	5	5	5	10	10	10	0	10	0	0
10	10	10	10	5	5	5	5	10	10	5	0	10	5	0
10	0	0	0	5	5	10	10	5	5	5	0	40	5	0
40	10	5	5	0	0	5	5	5	10	0	0	15	0	0
20	5	5	5	5	5	5	5	15	10	0	0	15	5	0
13	3	3	7	5	5	7	7	7	7	10	2	14	10	0
15	0	0	20	0	0	3	3	3	6	3	3	35	3	6
20	5	5	10	8	12	2	2	4	4	3	5	20	0	0
10	6	3	10	10	10	10	10	6	7	2	3	10	3	0
10	0	5	15	5	5	10	10	15	5	5	5	10	0	0
10	4	6	6	6	7	6	6	5	6	10	7	10	5	6
10	2	5	15	8	8	8	8	8	10	4	2	8	4	0
10	10	2	3	10	10	10	10	10	10	10	3	2	0	0
20	0	0	0	10	10	10	10	10	5	3	0	20	2	0
15	15	1	4	10	10	10	10	2	15	0	2	3	3	0
10	7	6	8	10	5	7	8	9	10	0	5	10	5	0
10	7	8	10	0	0	9	9	8	5	7	0	20	2	5

Table 9 shows that each individual student obviously constructs his or her own learning process and despite the extreme differences most students achieve a successful learning experience in this course. The heterogeneous structure of these results may reflect the different personalities of our students as well as their different learning styles. However, it clearly demonstrates their different preferences for learning resources, which support their seemingly different learning processes. These results compare well with Peters' observations in the Virtual Seminar mentioned earlier (cf. p. 3 in this volume). An interesting question here is: Are these different approaches to a successful learning experience a specific result of the online learning situation in our course(s)?

The findings suggest that highly individualized learning processes result in overall student satisfaction in the *Foundations of Distance Education* course. Similar results were found in other courses mentioned above, in which the 100-points questionnaires were administered.

Finally, the feedback received from the 100-points questionnaire and the results from the standardized course evaluation were used for course development and revision.

3.2.7.3. Students Comments

Students enrolled in the first Spring 2000 sections of OMDE 601 provided permission to use the following quotes about their experiences in the program. (Comments systematically collected from all OMDE 601 courses are remarkably similar to these.):

On differences in the online environment

" ... we ... learners are now taking an active part in our learning, communicating with our tutors in all areas, readings, assignments, examinations, etc. We are learning more because of our involvement. We are freer to ask questions and to have more open communication than ever before. No longer is the teacher standing in front of a packed hall lecturing for an hour and then thinking his job is done."

" ... and I can say without hesitation that I have had more productive and thought-provoking dialogue in this course than in any "classroom" course I've had, and that includes many small seminars I've attended that have been designed to promote roundtable discussions among participants. In this course, the structure established by the creation of our conference areas, discussion topic guidelines put forth by our faculty, and general timeframes given in which to discuss particular issues lends (in my perception as a student) a lot to our ultimate goal of dialogue. The autonomy comes in our ability to sign on at midnight or a Saturday afternoon and be able to contribute to our dialogue on our own terms within the given structure ... ".

" ... the ability to read everyone's ideas and sit back and think about a response, or comment, or joke, allows one to answer (either right away or later), when in a traditional classroom one might not respond at all. This method of communication gives a certain "democracy," if I may say, to the distance education process."

On the application of knowledge

"While possessing knowledge is good, it is the application of the knowledge that is key. As an MDE student and corporate manager, it seems to me, from a pedagogic standpoint and especially from a marketing standpoint, this may be a concept with exceptional merit."

"Professor Peters: This module has done many things for me. It has opened my eyes to new ideas and concepts and reinforced others. For me, one of the biggest "tests" of whether I have successfully internalized learning material is whether the issues and subject matter come to light for me outside the classroom. I had this experience during this module in witnessing and analyzing DE activities at the university where I work, and this has fueled my excitement about and commitment to this field. Your text is a resource that I know I will return to again and again in my career, and the examples that you, Gene, Uli and Börje have provided of teachers who guide and facilitate in this electronic environment have been wonderful illustrations of theory in practice ..."

On learning from other students

" ... during module one, I found myself almost obsessively checking the conference area for fear of missing something. This time around, while I may have contributed less to the conferences, I found myself making more use of the contributions of my classmates in my own rereading of our material. Quite a few times the question of "Where did Don or Beth or Alan, etc., come up with that information?" has led me to a second read-through of portions of our text. This has enabled me to capture bits of information I missed in my own initial reading, and has made a wonderful example of a student learning through another student's observations. I cannot recall a course where I was able to make such extensive use of my classmates' knowledge and insights ... "

On faculty

" ... we have very close contact with our professors and they guide us through the modules in such a way that we can learn as much as possible. The tutor model is evident in the fact that Uli and Gene respect us and have an understanding that we are working adults with families who are struggling at times to find the time to complete the coursework ... "

On working in groups

" ... groups are such a great way to learn. It seems like it is an excellent avenue to generate ideas and express opinions, while considering/respecting the different perspectives that emerge."

"...the small group exercise definitely made it easier for me to feel at home in the WebTycho world and to get to know a subset of my colleagues. It seemed to be the right size to both contribute and take in others' opinions. I agree with ____ (and we were in the same study group, so maybe it's a reflection of that group's makeup) that I really liked the variance of experiences, knowledge about distance education, and perspectives that occurred in our group — as well as the willingness to discuss other perspectives ..."

Other avenues for student feedback included planned face-to-face meetings in Oldenburg/Germany (March 2001, January 2002), Adelphi, Maryland/USA (November 2000, May 2002), and Orlando, Florida/USA (November 2002).

3.2.8. Learning Outcomes

Since the MDE program has, to date, only had very few degree graduates, there are currently no long-term or longitudinal measures available for examining program effectiveness or student learning outcomes. The MDE capstone course (OMDE 690) is one measure designed to help assess what students have learned throughout the graduate program. This course provides an integrative learning experience in which students

create a personal distance education portfolio and complete a major distance education project. Here the students are asked to create an electronic portfolio for two main purposes. First, the portfolio is a means for the student to move into the field of distance education as a professional. It is designed to allow the student to showcase his/her background, products, skills and knowledge in order to seek new employment, advance in their present organization, or simply to establish professional credentials. The second purpose of the portfolio is for the faculty to assess the student's progress throughout his/her tenure in the MDE program. Students are asked to save all course assignments and projects and add any additional works or projects they created. They are asked to create a portfolio from this material including the more traditional resume data as well as reflective writings on their achievements. The two main purposes of the portfolio may result in two different products, but this may well be a positive outcome.

More immediate measures that can be considered in this area are student assignments and assessments in the individual courses. MDE students are challenged to demonstrate their mastery of course concepts and material through research papers, individual and group projects, and other types of written assignments, including the following:

- Researching and providing “expert consultant” recommendations for institutions moving into online training and development
- Case study analyses, including institutions and organizations such as Athabasca University, The Open University, NextEd, Unext, and Universitas 21
- Student-created case studies with an analysis of contexts, factors, resources, learners, challenges, and opportunities
- Analyses of best practices in distance education
- Creation of a context-specific distance education system with an analysis of each component and graphical representation of how the various components interact with each other
- Application of decision-making criteria to choose appropriate technologies for particular learning goals/environments
- “Memos to the President” related to a wide range of leadership and management issues in distance education
- Examination of critical issues faced by distance education managers in different functional areas (student services, course/instructional design, technology managers, etc.)

3.2.9. Related Outreach Activities

Building on the model of the MDE, UMUC and Oldenburg have initiated several related outreach efforts in the field of distance education, including the following:

- From April through June 2001, Oldenburg’s Center for Distance Education in collaboration with UMUC provided a seven-week online course titled “Essentials of Online Learning” for Nokia (Finland) HRD staff using WebTycho (cf. http://www.col.org/pcf2/papers/naidu_1.pdf.). A second revised course took place from October through November 2001. Evaluation results have been presented by Naidu and Bernath (2002).
- The Global Development Learning Network of the World Bank collaborates with Oldenburg's Center for Distance Education offered a virtual seminar for professional

development on "Distance Education in Developing Countries" in Fall 2002. The seminar for professional development is closely linked to the content of OMDE 625 and OMDE 626 (cf. http://www.uni-oldenburg.de/zef/english/DEiDC2.htm).

3.2.10. Cost Effectiveness

There are several indicators that suggest that the MDE is a cost-effective approach to program delivery for both institutions. When the MDE program was first introduced in Spring 2000, UMUC already had a complete infrastructure in place that was designed to serve students and faculty at a distance and to support program development and delivery. This included a complete array of online services ranging from admissions, financial aid, and registration, to student advising, an online bookstore, and library services. With its mission of educating adult part-time students, UMUC was well-equipped to meet the needs of new students in the MDE program.

While both UMUC and Oldenburg had independently examined the possibilities of delivering courses, a certificate, or a degree program in distance education, they both realized that there were great benefits to a collaborative approach. They sought a model that would allow both institutions to capitalize on their particular areas of strength – UMUC's course platform system and experience in distance education, as well as Oldenburg's specialization in international distance education. Thus, the MDE represents a program that neither institution would have been able to achieve individually without substantial additions to cost. In addition, UMUC and Oldenburg have paid special attention to issues of cost-effectiveness. Tana Bishop of UMUC and Thomas Hülsmann of Oldenburg have been conducting a cost analysis study of the MDE program. Furthermore, a case study on the Oldenburg portion of the MDE program on the costs of online learning has been conducted by Hülsmann (cf. Hülsmann in this volume).

4. Conclusion

If one were to look at this program as one of many programs being offered by UMUC's Graduate School it would be a modest sized program with modest revenues for both institutions. But the program represents much more than that. It is also a "positioning" program, which demonstrates both institutions' leading role in the training of distance educators and clearly places each institution in the company of other well-known distance education institutions. This outcome is, of course, an important one, generating goodwill and reputation that is important for any educational institution.

Both UMUC and Oldenburg have benefited substantially from the implementation of the Master of Distance Education. MDE students and faculty are making important contributions to the field by positioning the pedagogical, technological, societal, and management-oriented aspects of distance education in a broader international context.

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Appendix

Excerpts From the MHEC Proposal

Rationale and Need for the Program

"The mission of University of Maryland University College (UMUC) is to provide high-quality educational opportunities to adult, part-time students in Maryland and throughout the world. Because of its target population and the emphasis on workforce preparation, UMUC seeks to provide educational opportunities at times and places convenient for its students. To that end UMUC makes use of several distance education (DE) media in order to give students the greatest range of choice and convenience. UMUC places a special emphasis on the use of the World Wide Web to deliver courses and degree programs to students who would not otherwise be able to pursue post-secondary education because of geographic or time constraints.

The proposed Master of Distance Education (MDE) degree program fits UMUC's mission well. It is designed specifically for working adults; for this reason, the degree

has an applied orientation combining current theory and relevant research with real world experiences of students.

Adding an internationally recognized degree program to UMUC's academic inventory will strengthen UMUC's reputation and increase its revenue. In so doing, UMUC will be better able to maintain its cutting edge in distance education and pedagogy. These capabilities further UMUC's and the University System of Maryland's goals to achieve and sustain national and international eminence, and to become a model for American higher education and a source of pride for all Marylanders..." (p. 1)

"...UMUC is already recognized as an international leader in the areas of adult education. The proposed degree clearly adds to that reputation. It is also the goal of UMUC to be recognized as a national and international center of excellence in the discipline of distance education. This not only furthers UMUC's ability to attract students interested in earning their degrees via distance education, it also showcases UMUC as one of the premier teaching and research institutions in the area of distance education and training. It is UMUC's intent to become the institution of choice for training IN distance education, as well as workforce training BY distance education..." (p. 2)

Analysis of the Market for the MDE Program

"...a recent report by the International Data Corporation (IDC) market research firm entitled ONLINE DISTANCE LEARNING IN HIGHER EDUCATION, 1998-2002, says that the number of college students enrolled in distance learning courses is growing by 33 percent per year. The number of students in distance learning classes is projected to reach 2.3 million by 2002. The proportion of two year colleges offering distance learning classes is projected to reach 85% (up from the current 58%), and the proportion of four-year colleges offering such classes is projected to reach 84% (up from 62%).

A logical analysis of the rapid growth in distance education supplies evidence of a large potential demand for training of professionals in the field. A large majority of 2 and 4 year institutions in the United States presently have either an office or an individual who is in charge of distance education. Many of them have multiple offices and/or multiple employees..." (p .2)

"Many, if not most, DE positions require individuals who either have extensive experience or specific training in the field of distance education. Because most of the explosive growth in distance education has been recent, there are only a limited number of experienced personnel presently working in the field. There are only a few degree programs in the field and these have produced a limited number of graduates, so there are only a small number of individuals who have been specifically trained in DE as compared to the total number of present and future (predicted) positions..." (p. 3)

"Further evidence of demand for trained personnel in the field of DE is the explosive growth in private and non-profit organizations that are marketing distance education products and services in the education/training field. Such companies as RealEducation (eCollege), Collegis and Sylvan Learning Systems are marketing turnkey distance education systems to companies, universities and colleges. Organizations such as WebCT, Blackboard, and Lotus/IBM are marketing software and related technologies for the delivery of Web-based distance education. Other organizations such as V-Tel and PictureTel are releasing new versions of their video conferencing products, and

many of the telecommunication companies are directly marketing distance learning services. Hundreds of companies have sprung up that have developed training and education courses and they are marketing these products directly to businesses, educational institutions and government. Most of these organizations either did not exist five years ago or did not offer these services and products. Many of them did not exist two years ago..." (p. 4) "The direct implication of this is that there is an increasing number of jobs that will require the skills and knowledge that is imbedded in the proposed degree program's curriculum. Thus there is already a pool of potential students working in the private sector that are appropriate candidates for the proposed program and there is some assurance of a future demand for the graduates."

"The evidence for student interest in the proposed program is based on a rational analysis of the growth in the field as well as a necessarily somewhat anecdotal analysis. This is because this type of program tends to be somewhat on the leading edge of the demand, yet demand is developing at a very rapid rate. The results of this analysis suggest that there is a strong need for training in this area accompanied by only a small number of institutions that are offering the credentials."

Other MDEs or Related Programs

"There are no similar Master's programs being offered in the State of Maryland. However, it is useful to examine other programs that exist outside of the State of Maryland because this provides further insight into the issues of demand.

Presently, there are only a limited number of programs that are offering a similar degree. For example, similar degrees are offered at the following institutions: Florida State University, George Washington University, Nova Southeastern University, Athabasca University (Canada), The British Open University, The University of London, and The University of Southern Queensland (Australia). A number of these degrees have been offered for several years and their enrollments are healthy, if not exceeding their original estimates. Their program sizes are primarily limited by their number of permanent faculty. UMUC is planning to avoid these limitations by implementing its tried and true system of adjunct faculty staffing. It is interesting to note that several of the above institutions are beginning to implement the use of adjunct faculty in their Distance Education master's programs.

Until recently, there have not been many institutions that have had extensive experience delivering distance education (and thus have a reasonable number of qualified practitioners to teach the subject). Internationally, institutions that have been leaders in distance delivery have initiated academic training programs (for example, the well respected British Open University, Athabasca University, and University of Southern Queensland). UMUC intends to follow their model of teaching what they both know (their various disciplinary expertise) and what they do (create, manage and deliver distance education programs)." (p. 5)

Planned Goals of the MDE Program

"The Master of Distance Education covers a broad range of topics and themes needed by distance education and training professionals in a global environment. Graduates of the program will be able to develop and communicate a mission and vision for the

implementation of distance education within an organization; function effectively as leader, manager and team member within a distance education or training organization; develop strategic goals and business plans for distance education within an organization; analyze and recommend an organizational distance education technology plan, and to manage the implementation of that technology in distance delivery; design, and implement and assess the necessary support services for a distance education program. They will develop competencies in organizational and management processes; leadership and change management; information technology; business development, strategic action planning, problem solving, ethics and social responsibility. The degree is very definitely an applied one, aimed at developing the managers of distance education and training organizations of the future.

In a ever rapidly expanding field, the graduates of the MDE will be prepared to engage in the planning, budgeting, development, delivery, and support of distance education and distance training programs. Students will:

- *gain a perspective on the history and theory of the field of distance education;*
- *learn to access and critique the relevant literature in the field;*
- *understand the organization systems and structures that support DE;*
- *understand the emerging business environment of DE, including issues relating to cost, marketing and competition;*
- *develop skills in the selection and application of DE technology and media;*
- *learn about and practice the application of asynchronous and synchronous technologies;*
- *understand and apply a variety of DE pedagogies within the materials and course development process;*
- *learn about issues of leadership and management within a distance education or training organization;*
- *learn about the globalization of DE, and how the international and cross-cultural aspects of DE are critical to operating in world markets;*
- *learn about the design and construction of the Virtual University, and the provision of a wide variety of student services and support, including the distance delivery of the virtual library, student advising and counseling services, course and program registration and financial services, and job placement services; and*
- *learn about the design, development, and operation of the corporate virtual university and related training environments, including course development, database development, student registration and tracking, etc. and;*
- *analyze issues related to faculty training, faculty compensation, copyright ownership, and quality assurance." (p. 6)*

"...students who successfully complete the Master's degree will be able to:

- *Understand and critique the broader policy and social issues that arise from using distance education and technology-based learning.*
- *Plan and manage distance education and training courses, programs, departments and organizations.*

- *Design, develop and deliver high quality distance education and training in ways that reflect a variety of different approaches to teaching and learning.*
- *Select and use technologies on the basis of their differing educational and operational characteristics.*
- *Evaluate and conduct research on distance education and training issues, and disseminate the results.*
- *Collaborate and network with other distance education professionals around the world.*
- *Cost and budget distance education development and delivery systems.*
- *Understand, from a learner's perspective, what it means to engage in distance and technology-mediated learning." (p. 11 - 12).*

OTTO PETERS

Moderating a Virtual Seminar - Reflections on First Practical Experiences

OTTO PETERS

Moderating a Virtual Seminar - Reflections on First Practical Experiences

The virtual seminar has become the main format of higher education in many online graduate and postgraduate courses. This chapter addresses the problem of how the new virtual learning space can be used to develop adequate learning behaviors. The experiences acquired in ten virtual master courses show that learning in virtual seminars differs markedly from traditional expository teaching and reception learning as it opens up new possibilities for the development of autonomous, self-regulated learning. Some methods are dealt with which help to facilitate this change to pedagogical paradigms.

1. A Pedagogical Approach

When teachers at colleges and universities decide to engage themselves in conducting virtual seminars they get into difficulties. All of them were educated and socialized at traditional schools and at campus universities. And all of them have acquired and internalized the conventional strategies and skills of face-to-face teaching, namely expository teaching and receptive learning. They believe that these strategies and skills are the most natural thing in the world. The great leap from real learning spaces to virtual learning spaces, however, teaches them otherwise. They find themselves in an entirely new pedagogical situation. Those lacking pedagogical sensitiveness might not become aware of the new prerequisites and conditions of learning in virtual seminars and try to continue in the traditional way. Others might try to adapt conventional ways of teaching to the new situation by replicating them. However, a growing number of teachers have come to the realization that virtual learning spaces require new approaches. At present they are in the process of exploring them. They see and understand that following well-trodden paths will never solve the educational problems ahead of us and that new pedagogical ground must be broken. They are starting to define or redefine learning and teaching methods as well as learning and teaching behaviors anew.

One of the dramatic discoveries is that virtual learning spaces lend themselves much more to autonomous and self-regulated learning than teaching in real conventional college classrooms. This means that the education of self-reliant students who learn independently from the teacher - which, by the way, is an old, but so far too often ignored educational goal - now has a real chance to become realized. Hence it would be wrong to plan and design learning in a virtual seminar without at least trying to reach this goal.

During the last five years I have moderated ten virtual seminars of four weeks each as a visiting expert. They are part of the *Foundations of Distance Education* course in the Master of Distance Education (MDE) program which is offered exclusively online by the University of Maryland University College and the Carl von Ossietzky University of Oldenburg. The content of the seminar I am involved in is on "Pedagogy of Distance Education and Theoretical Approaches to Distance Education". When developing a pedagogical model for this virtual seminar I decided from the beginning to make sure that many elements of independent learning were included, not only for reflecting on

them but also for practicing them. I tried to convince the students that a new learning *attitude* and new learning *activities* are required, especially with regard to how to learn in an autonomous way, how to develop suitable strategies, how to use and exploit the new communication facilities and how to develop habits of metacognition and self-evaluation.

1.1. Learning how to Learn Autonomously

It is true that certain elements of autonomous learning can also be found and developed in *real* seminars - at least in European continental universities: a decision by a student to contribute a paper, read it out in the seminar and defend it against critique in a discussion. But what takes place in these real seminars remains traditionally lecturer-oriented and lecturer-dominated in most cases. Compared with such isolated starting points of learner autonomy, virtual seminars offer many more such possibilities which can be developed further. Like most distance learners the students in their digitized learning environments may take the initiative and become active without being supervised or controlled by teachers and the other participants. They are driven by necessity. Without their initiatives and activities the learning process could not take place at all or would be seriously impaired. Their independence and self-regulation is, so to speak, an integral part of the system. This particular feature should be considered an important asset of online learning.

The pedagogical problem to be tackled is how autonomous learning can be evoked or elicited in a virtual seminar. Which measures are to be taken in order to enable dependent students to become autonomous? In order to characterize the relevance of this structural change we can state that this enabling process has become more important than the traditional process of presenting contents.

The *pedagogical model* to be developed in this particular case challenges the students in the following ways:

(1) The students are offered additionally to the required reading a number of scholarly articles and papers about fundamental theories of distance education and asked to *decide* which of them should be selected by themselves according to their personal interest, likes, predilection and vocational or professional experiences and perspectives. By doing so, they are involved in *defining the content* and partly also in *deciding about the specific goals* of their learning, which will be initiated by and take place on the basis of the chosen reading material. Thus, students must become active, their learning is already strictly learner-oriented and individualized, because they are expected to find, develop and follow a learning path of their own.

(2) The students are again engaged in activity when *searching for additional relevant information* about the chosen theme on the Net. This process is intellectually demanding because the required information has to be judged, evaluated, linked and integrated into the content chosen and into the respective knowledge structures.

(3) The students become active again when they *communicate* with others about their learning. This requires more initiative and skill than in a real seminar.

(4) They are encouraged to discuss relevant issues together with two or three fellow students. In this way their virtual *group work* may develop into *collaboration*.

(5) When the students are asked to write an paper for *evaluating* purposes it is up to them to decide which of the proposed topics would suit them. They may also be entirely free to decide on the topic themselves. In the last analysis autonomous learning should encourage and enable students to evaluate their learning themselves. But in this particular case institutional regulations have to be observed and the paper must be graded by the teacher.

(6) At the end of the virtual seminar the students are asked to do a comprehensive *self-evaluation*. Neither the teacher nor the other participants of the seminar are informed about the results.

This approach can be criticized on the ground that it is unwise and surely problematic to implant a model of this kind into a teaching and learning system which is closely regulated by a university government and shaped by tradition. The chances are that this will lead to an inevitable clash of pedagogical values and will require difficult negotiations with university officials. However, the difficulties are no longer insurmountable, because most universities are involved in a process of structural transition and are becoming more and more interested in online learning.

1.2. Learning how to Develop a Strategy of Self-Learning

Although distance learners have already developed a self-learning attitude and certain self-learning activities, the situation in online learning requires the intensification and enhancement of such pedagogical elements. The goal is to bring about real autonomous and self-regulated learning. Students used to expository teaching and receptive learning must become aware of the new learning model, which is much more demanding and means much more work but may be also much more rewarding. This means that a process of self-reflection must lead to a change of attitude. This is the precondition for a re-definition of learning online. This process is a radical one, because independent learning is the opposite of dependent learning. Consequently, many elements of the pedagogical structure have to be changed. It stands to reason that traditional students must be motivated and supported when they start learning in this way, although this appears to be a paradox. Furthermore, they can be challenged by tasks which do not induce them to receive, store and reproduce content matter, but to set and reach learning goals themselves, to search, find and evaluate information themselves which may be relevant for solving learning tasks. Active self-learning can develop in this way.

1.3. Learning how to Use Communication for Learning Purposes

It is important for students to realize that the possibilities of communicating differ from those in real seminars as they are manifold and basically a-synchronous. They are manifold because the students can profit from an increased number of technological vehicles and channels (as well as software) for this purpose (e.g. chat rooms, e-mails, mailing lists, newsgroups) and can also communicate with an increased number of partners. Of course, communicating with the moderator of the seminar and other individual class mates is in the foreground. But there are more possibilities and students must become aware of them and learn how to use them as a routine. They can communicate with a selected group of students or with all students in the seminar in a multilateral way. They can discuss a problem with a given student and know that all

other participants are "listening" and "witnessing" the dialogue. They can even contact people who are not participants of the seminar. Quite often the telephone is used in order to complement the discussion by synchronous oral dialogues. However, not all students enjoy being involved in dialogues. Jacqueline M. Timoney explains her own reluctance in this way: "I do not think of myself as either an introvert or an extrovert, but I feel more comfortable digesting the conversation, internalizing it and then responding. Actually, by the end of the two weeks, when I did feel comfortable enough to speak, I found that the professor had pretty much counted me out (for classroom discussion)." Cases like this one can be found in many virtual seminars. These students need special attention.

Communication can also be the medium of *collaboration*. Two students might solve a problem they cannot master alone. Students might establish working groups in order to discuss a problem in depth. These groups can be enhanced to regular knowledge building communities which store the learning results which they have achieved together. Communication and collaboration are facilitated if the students and the moderator are provided with brief biographies with photographs of each participant. However, a recent tendency is that some students do not like to provide this information including photographs.

The *Foundations of Distance Education* course is the beginners' course in the MDE program. Hence the pedagogical task was a difficult one. My task was to motivate the students to engage themselves in a radical structural change of their learning processes; to convince them that they have to work in an entirely different frame of references; to get the participants into a new frame of mind and to acquaint them with the new possibilities of online learning. How could this be done with distributed participants in a virtual seminar? I "talked" to them in a long introductory e-mail (cf. appendix 1).

1.4. Learning how to Develop a Habit of Metacognition

The more students learn how to learn independently from their teachers in order to become autonomous, the more they perform tasks which have traditionally been tasks of these teachers. Above all, they must acquire the skill and habit of observing and evaluating their own learning. Learning psychologists call this »metacognition«. With regard to autonomous learning, this term refers to knowledge, which is used to regulate or control cognition in a learning process. In online learning, this activity has a high priority.

The task is a critical one. It presupposes that the self-learner finds, acquires and integrates new knowledge and at the same time observes and controls this process in order to avoid false starting points, mistakes, errors and possibly misleading interpretations. This process is similar to the evaluation of instructional designers. In this case, we can distinguish formative and summative metacognition.

The students were advised to establish this second level of their learning activity. They were asked to observe themselves during their learning. And in order to prepare them for metacognitive considerations they were involved in continued reflections on the nature of learning in virtual seminars in the light of their own experiences. Their observations focussed on the differences between real and virtual seminars and on the problem of whether the virtual seminar can be substitute for a real seminar.

1.4.1. Differences Between Real and Virtual Seminars

The students of section A (n = 31) and section B (n = 32) of the virtual seminars, which took place in October 2000, discussed the advantages and deficits of both formats and displayed their judgements, comments and observations. All students referred to in this chapter were participants of this seminar. The intensive discussion period lasted from 17th to 26th October. The following are some of the results:

1.4.1.1. Advantages

Seven students referred to the quality of their learning. Some students appreciated that they have time for reading and writing, for thinking and editing, for reflecting on their thoughts before they write them down. Brenda Lee James-White, for instance said: "I take time before I utter a word and for some that is a blessing." The same student felt the peculiar "joy of formulating well thought out questions". Others enjoyed taking time to complete their thought processes. Gary B. Double believed that this way of learning "forces the learner to think and rethink and to internalize the concepts". Some liked the fact that they were able to think about the contributions of other participants, which assumed more importance for them in this way. And Gerald Thompson thought, "The depth of thought is much greater, but fragmented".

Four students were impressed by some of the new possibilities for communication and interaction: the combination of a-synchronous dialogue with synchronous group chats, the participation in multiple conversations, and the written record of the dialogues, which is so invaluable for organizing and reorganizing the contents, for finding quotations and establishing cross references, intensified study and for research. The value of communication was generally recognized. Caroline Mullenholz observed: "When a student submits his/her comments to the discussion, it is as if he/she has visited the instructor in their office and is having a conservation between the two of them." Small wonder that another student went even so far as to believe that the electronic interaction could adequately substitute face-to-face interactions of real seminars.

Three students experienced and liked the relaxed atmosphere in the virtual seminar as compared to the often rather strained learning climate in real seminars, where they are under the supervision and control of a teacher and have to withstand group pressure. They did not feel intimidated and were not inhibited to put or answer questions.

Two students enjoyed the absence of disturbing factors and argued that it was possible to develop your thoughts without being interrupted. Two students liked the fact that there is no waiting list for students who want to contribute to the discussion: all students could talk at the same time. One student praised the possibility of jointly creating and editing documents and sharing assignments.

Advantages of Virtual Seminars in the Opinion of Participants

Section A of the "Foundations of Distance Education" course in Fall 2000

Relaxed atmosphere: "Students are not intimidated about speaking up in a room full of people" (Paula J. Hubble).

Relaxed atmosphere: "I do not feel put on the spot to speak up in class".

Undisturbed performance: "We can talk without being interrupted" (Kathleen H. Beckman).

Absence of disturbing factors: "You cannot be "dismissed with just one look", disregarded because of your color, dress, or slight stutter" (Gerald Thompson).

No restriction of participation: "In a classroom only a few students may be able to ask questions. In a virtual seminar students and instructors can comment on each others´ ideas" (Paula J. Hubble).

No waiting list: "We can all talk at the same time" (Kathleen H. Beckman).

Thoughtfulness: "I can reflect on my readings and thoughts and comments of the others (Jacqueline M. Timoney).

Thoroughness: "The depth of thought is much greater, but fragmented" (Gerald Thompson).

Contributions of other participants assume more importance: "I am gaining much from my fellow students´ responses" (Ronald G. Brown).

Unique feature: "We can participate in multiple conversations simultaneously" (Kathleen H. Beckman).

Documentation: "We have a written record of our dialogues" (Kathleen H. Beckman).

Future developments: "Bringing to bear the full power of modern electronic capabilities overcomes these limitations (caused by a-synchronism) when communication is synchronous" (Leonard M. Giambra).

Section B of the "Foundations of Distance Education" course in Fall 2000

Reflectiveness: "It forces the learner to think and to rethink and to internalize the concepts" (Gary B. Double).

Atmosphere: "No inhibition, you feel less intimidated" (Caroline Mullenholz).

Reflectiveness: "You have time to think. Allowing the student time to ponder the answer to their own questions gives rise to autonomous learning" (Brenda Lee James-White).

Creativity: "The '*Relaxed* beauty' of eliciting well thought out questions". (Brenda Lee James-White).

Thoroughness: "You have time for writing, reading, editing the contributions." (Caroline Mullenholz).

Thoroughness: "I have discovered that I make a conscious effort to complete my thought process on an issue and to absorb new ideas from other comments. I take time before I utter a word and for some that is a blessing." (Brenda Lee James-White).

Unique structure: "The possibility of combining a-synchronic communication with group chats".

*Sharing assignments: "*Computer conferencing and on-line editing capability permits students to jointly create and edit documents and share assignments" (Rita Owen).

More opportunities for dialogue: "If a student wasn't involved much in classroom dialogue, would he/she really lose by attending an electronic classroom? ... Students could actually gain in their experience in the latter" (Gwendolyn A. Burt).

Parity: "I would contend that from my experience as a DE student that the electronic interactions have adequately substituted for face-to-face interactions" (Linda A. Monzo).

1.4.1.2. Disadvantages

Five students were concerned about the particular learning mode required in virtual seminars. Some of them believed that the exchange of written statements is more difficult than the respective oral communication. According to them, this holds true especially for those who prefer to "talk their ideas out", and even more so for those "lacking good writing skills".

Further difficulties arise when learning in virtual seminars is being performed. Some students were disappointed that it takes more time than learning in real seminars. Because of the a-synchronism of the dialogues there is a lack of progression and inter-activeness. Leonard M. Giambra said: "It is difficult to establish the sense, the meaning and the thread of the dialogue". And Soultana Chanikian believed that "dialogues cannot really expand on issues of personal interest, requests for clarification or elaboration". Sandra A. Gammons missed spontaneous contributions, passion and intensity, the "good old-fashioned heated discussion". According to Linda A. Monzo, these discussions were "more dissertation driven than dialogue driven". And Stephen Wadington insisted that "spontaneous contributions are lacking" and that "real dialogues can never be achieved".

Some students were not happy with the »social presence« of the distributed participants. According to Kenda Layne, there is "a sense of anonymity". The students felt themselves isolated and detached and had no idea who is taking part in the discussion. Kathleen Beckman told her fellow students: "I am not a visual learner, so I don't have a clear picture of any of you." These students felt that they were talking to an empty space. One reason given is that expressions of body language are missing, for instance physical gestures, eye contact, non-verbal language, the tone, volume, timbre of voice, shaking heads or nodding, and, as Gerald Thompson observed, the "grunts and groans as comments" as well. Information and emotion are no longer combined. Small wonder that one student deplored the fact that she was not able to become aware of "a person's essence" and another one missed "the energy that is present in a learning environment shared by a few or many people".

Disadvantages of Virtual Seminars in the Opinion of Participants

Section A of the "Foundations of Distance Education" course in Fall 2000

Articulation: Lack of progression.

Articulation: Lack of interactivity.

Presence: Absence of a person's essence.

Situation of students and teachers: detached, isolated.

Lack of clues: "No body language, e.g. physical gestures, eye contacts, no verbal language" (Sharyn Lee Hearn).

Form of interaction: "I don't really feel that anything truly substitutes face-to-face interaction. How do you replace factors like body language, tone of voice or even the *energy that is present in a learning environment shared by a few or many people?*" (Shanta D. Robertson).

Learning behavior: "In face-to-face dialogue one does not have the problem of re-establishing the sense, meaning and the thread of dialogue" (Leonard M. Giambra).

Learning behavior: "I miss the immediate feedback".- "I miss the immediacy of response (Paula J. Hubble)

Learning behavior: "I am more comfortable talking my ideas out" (Paula Hubble).

Learning mode: "It is a tough process to communicate through texts. It is difficult for those "who have trouble talking through written words" (Gerald Thompson).

Learning mode: "I have only a sense of those who response. In a verbal classroom I would have a sense of what the non-talkers were thinking. By nodding of heads, shaking, grunts and groans as comments pass one would have a sense of the entire class relations; not just the reaction of those who speak up." (Gerald Thompson).

Learning mode: "Virtual information is only partial information. It suffers from a-synchronism. This reduces severely the benefit of dialogue" (Leonard M. Giambra).

Learning mode: "In the small class lecture or seminar the face-to-face situation provides information and emotion, which would be difficult, but not impossible to convey by electronic interactions" (Leonard M. Giambra).

Prerequisite: "The "students have to have good writing skills" (Paula J. Hubble).

Re-orientation: "I have trouble in figuring out what is new stuff" (Paula J. Hubble).

Learning time: "You need more time than in class" (Kathleen H. Beckman).

Audio stimuli: Virtual seminars are lacking sufficient details regarding audio "in terms of tone, volume, timber and variations and juxtapositions of them" (Leonard M. Giambra).

Experience of virtuality: "I did not know who was at the other side of my computer. I felt myself as if talking to empty space, dreaming something. I had never felt such a feeling at traditional classes" (Eric Jeon).

Experience of virtuality: "I do miss the face-to-face dialogue that I have received in other classes" (Paula J Hubble).

1.4.1.3. Can the Virtual Seminar be a Substitute for a Real Seminar?

The students were asked to reflect on this question in the light of their actual experiences and to voice their opinions. Here are some of their reactions:

Some students felt that the virtual seminar is "practically the same" as a real seminar. Exactly these words are used by Teresa I Radi, Hada Flowers and Jeffry Rand. And Rhonda L. Black maintained that there are "no real differences" between the two.

It is possible to interpret these statements in a positive way by assuming that these students did in fact accept this particular form of online learning, although the words "practically" and "real" also signify slight reservations and the idea that the two forms of learning are *not* really the same. Their positive judgements might also be influenced by the enthusiasm about being among the first to try out a new format of higher education, as well as by the »novelty effect«.

Susan Pollack does not share this opinion. She was convinced that the two forms are "similar, but not the same" on the ground that "there is a different kind of rhetoric in the virtual seminar as the dialogues are modified to the medium". Gwendolyn A. Burt was more outspoken. She maintained that the two formats are markedly different by reminding us that you cannot "substitute an apple for an orange". However, she qualified this statement by referring to an exception. According to her, one interesting and relevant precondition is important: "If the student's goal is to learn and the student is able to learn autonomously, he/she could surely substitute the electronic means for the face-to-face means." If we generalize this statement, we could say that the autonomous learner is not only a valuable pedagogical goal and perspective of online learning, but also a relevant precondition for substituting a virtual seminar for a real seminar. Finally, Gwendolyn

even said: "If the basic goal is the same, even though the means are not, substituting one for the other seems possible."

Sharyn Lee Hearn gave a similar interpretation by referring to an important and obvious difference in the learner. "If you take interest and are engaged in a meaningful dialogue with educators and peers - then there is no longer a distance between them." And Charles Kalnbach focused the discussion on the different pedagogical structure of the two formats of a seminar by observing: "We are not replacing (substituting) what teachers are doing in class: we are trying to expand the interaction, the depth of the conversation and the ability of the student to find other sources of information."

These three statements are telling. They imply that virtual seminars can be substitutes for real seminars but only on condition that the students are autonomous and committed learners who are able to exploit the learning potential of online learning. Here we can see again why distance teaching universities have a special affinity to online learning - and one which is much greater than that of campus-based universities. Distance students have become well known as independent, self-reliant and self-regulating learners. They meet most of the conditions referred to by Gwendolyn and Sharyn.

Several times students admit that a virtual seminar can be a substitute for a real seminar – but they still missed the spoken word and the spontaneity of the spoken dialogue. These students preferred spoken dialogue to written dialogue. The reason for this is quite often simply that they have difficulties in expressing their ideas in writing. Some students report how difficult it is "to communicate through texts", especially for those who have trouble talking through written words (Gerald Thompson). This obvious handicap is discussed by participants with regard to future possibilities. Hada Flowers believes that face-to-face dialogues can only be substituted by electronic interactions "when the technology allows for oral conversations" in the virtual environment. And she foresees that we might have voice recognition software. Those who have trouble talking through written words could then also speak in a virtual seminar and the software would print the spoken contribution. Furthermore, Susan Pollack suggests that the participants could record their voices, upload their voices and have the other students listen to the recordings.

I have reported these suggestions only in order to show that not all the students were really content with the present virtual dialogue, which is a dialogue reduced to the exchange of written messages only.

1.4.1.4. The Survey

The issue was dealt with again when one of the students, Kathleen H. Beckman, took the initiative in further explorations. She decided that a brief survey should be carried out of the participants in order to learn the way in which this virtual seminar is experienced and how far these experiences differ from those in real seminars. She focused on three aspects: group cohesion, mutual respect, and learning value. She formulated these three questions accordingly and asked the participants to answer them:

Membership

A. The dialogues (conferences) help me feel like I am a member of this group seminar.

B. The dialogues (conferences) do not help me feel like I am a member of this group seminar.

Mutual Respect

See Paula's quote from Dr. Peters´ book, p. 33: "Dialogical learning demands from participants 'partnership, respect, warmth, consideration, elementary under-standing, honesty and sincerity" (Reinhard & Annemarie Tausch).

A. I experience the qualities quoted above in our dialogue (conferences).

B. I do not experience the qualities quoted above in our dialogue (conferences).

Learning Value

A. So far, I have experienced the same learning value as I would expect from a face-to-face seminar dialogue.

B. So far, I have experienced less learning value from the virtual dialogue (conferences) than I would expect from a face-to-face seminar dialogue.

C. So far, I have experienced more learning value from the virtual dialogue (conferences) than I would expect from a face-to-face seminar dialogue.

Quite a number of students reacted more or less informally in their postings by mentioning only single aspects with regard to advantages and disadvantages. However, eight class members took pains to complete in this questionnaire. The result: almost all of these students felt themselves to be like members of a group although they were spread all over the United States and several other countries in the world; and nearly all of them experienced "mutual respect". Five students felt that the learning value is the same as in face-to-face seminars and three students thought that it is reduced. However, three students experienced even more learning value (see appendix 2).

1.5. Learning how to Acquire a Habit of Self-Evaluation

This final part of the virtual seminar is not meant to submit the students in any way to control, assessment or review by the moderator. Rather, it is still a relevant part of the process of self-learning - an exercise. It is suggested by the moderator as part of a farewell letter, the aim of which is to make the students ponder about what has happened to them, what they have experienced, what they have learned during the last three weeks. The students are asked to recall their self-learning activities, for instance, their reading, reflecting, navigating and searching in the Internet; writing messages; engaging in dialogues and "listening" to contributions from other participants; discussing as members of different groups; solving problems alone or together with others; arriving at decisions about learning paths; trying to relate relevant contributions of participants; and finally, composing an essay that was to mirror their intellectual development and the growth of their cognitive structure during this period.

If students involve themselves in this process of recalling and self-assessing they become acquainted with a new concept of "learning result". Traditionally these learning results are tested more or less quantitatively and graded with the help of numbers and decimal fractions. Here the students are asked to consider the increase in their knowledge and

skills in qualitative terms and in a highly complex and differentiated way. Consequently, they become acquainted with a different concept of »learning result« which will also modify and even change their idea of »learning«. It refers not only to the construction of new knowledge and skills, but also to the application of methodological approaches; to the reflection of their chosen learning paths, their individual way of self-learning, and their way of collaboration; to their adoption of new attitudes, their arriving at judgements; and, of course, to a critical evaluation of online learning in their virtual seminar (cf. appendix 3).

2. Discussion

The opinions of the students about their learning experiences in virtual seminars, as presented in this chapter, cannot be generalized in any empirical way. However, they indicate what students have experienced as individuals who have studied online for several months and draw our attention to a number of their reactions to this new form of higher learning. In a small way, their opinions confront us with the reality of learning in virtual seminars. This is a significant fact. It assumes even more importance because in this case the virtual seminars are not a complementary pedagogical format, merely added to face-to-face instruction on a campus, but constitute the main and basic format of learning. Insofar, it is certainly worthwhile to analyze these findings and to reflect on them.

2.1. Underestimation of Great and Significant Differences

Many students believe that virtual and real seminars do not differ very much. This is the most striking impression when reading this chapter. According to them, the dialogues in our virtual seminars make you feel as if you were a member of the group, the group members pay respect to each other and the learning value is about the same or even higher. A few students even believe that the two formats are practically the same. Seemingly, the virtual seminar meets widespread acceptance among the students involved, more so than experts are inclined to assume. The distance between the participants and their relative anonymity are quite often not considered as negative factors. The opinions reported cannot be harmonized with the great and significant differences in virtual seminars caused by a number of attributes: a-synchronism, distribution of the participants, primarily text-based communication, and changed learning and teaching behaviors. Why are quite a number of these students not aware of these factual differences and their far-reaching consequences for the learning situation?

There are several ways of interpreting this remarkable phenomenon. Firstly, I should like to point to similar findings that were revealed in an empirical study. Heide Schmidtmann and Sonja Grothe (2001) compared both seminar formats with regard to the emotions of the students about perceived norms. They found that the mean values were very similar indeed. Positive and negative feelings, and feelings of security, could be clearly identified in both groups. But the authors did not believe in their data. They raised the question whether this remarkable correspondence between the two formats of seminars means that they are really similar, or whether the students experienced and judged their learning in virtual seminars simply by using the same frame of reference as in real seminars.

Another explanation following the same line might be the power of the metaphor »seminar«. This would mean that teacher and students use the metaphor of the real seminar and imagine that they are really part of it. According to Friedrich H. Hesse and Stephan Schwan (1996, p. 247), adequately selected metaphors can "enhance the feeling of being present in a social (not technical) setting and facilitate processes of orientation and coordination between the learners".

Perhaps the phenomenon can also be explained by interpreting it theoretically. We could apply the »evocation model« (Döring, 1997, p. 325). This would mean that the missing background variables induce the students to develop their imagination in order to restore the learning situation they are used to in real seminars.

Obviously, the phenomenon has not yet been fully explained and calls for further investigation.

2.2. Concurrent Awareness of Advantages and Disadvantages

Many students bring forward relatively isolated aspects of their experiences in a virtual seminar. They show how varied and specific their observations are after an experience of some months only. Summarizing we can say that they refer to some distinct properties in which virtual seminars differ from face-to-face seminars: the relaxed atmosphere, the undisturbed performance, the absence of negative sanctions of personal appearance, no waiting list for students who wish to contribute, more time for reflection, the written protocol of all interventions, the possibility of multiple conversations, no inhibition, no intimidation, more reflection, thoroughness of learning activity, more dialogues, future possibilities of synchronous dialogues. These are close observations, which show a high degree of understanding. Overall, they help to characterize the virtual seminar in a unique way.

However, one student reacted quite differently and on a higher level of reflection. His contribution shows that the totality of the issue and its far-reaching consequences has been fully understood. He hits the nail on the head by maintaining that we "are not replacing (substituting) what teachers are doing in class" (Charles Kalnbach). This statement rules out all temptations to imitate and replicate traditional teaching. According to him, we are challenged to start something new, namely to expand the virtual interaction, the depth of the virtual conversation and the ability of the learner to find and use other sources of information. Furthermore, this remark suggests that a comparison between the two formats does not lead very far. Here, a clear vision of the new pedagogical approach in virtual seminars is exhibited.

The statement that real and virtual seminars are about the same with regard to social presence, respect and learning value does not mean that the students do not see and sense drawbacks and deficits as well. The rather positive reactions to the questionnaire are by no means an expression of full acceptance of, or even of enthusiasm for, the new mode of learning. In no way are the students blind to inadequacies of the virtual seminar they experience. There are certainly critical observations as well. In fact, negative opinions outweigh the positive ones.

Among the negative statements, there are some that help to clarify the issue. Students deplore the "lack of progression" which is the consequence of a-synchronism,

individualized autonomous learning and network approaches. They miss the "essence" of the persons involved in the seminar, which cannot be sensed or felt because of the electronic transmission. They would like to become aware of the "energy" that is present in learning environments shared by a few or many people. They want to experience "real" discussions. These remarkable statements are based on deeper insights.

To sum up, we can say that it is interesting to see how quite a number of students manages to praise and to criticize the virtual seminar at the same time. This means that they sense the complexity of the new format, and this prevents them from providing clear-cut answers. The following posting shows clearly how the thinking process comprises negative and positive aspects as well.

> Response Title: 10/23 Dialogue in electronic communication
>
> Author: Susan M Thomas
>
> Date: Monday, 10/23/2000 9:55 PM EDT
>
> Dr. Peters, Thomas, and class,
>
> Is it dialogue when a student poses a question to a professor and receives a response through conference or an email? Has dialogue taken place when a student makes a comment to another student's post and no further interaction occurs? To me, such communications seem more characteristic of reciprocal, answering behavior than of an actual dialogue.
>
> A dialogue has movement; it has impetus - where the participants actively contribute to the progress of the conversation in the course of asking questions, expressing opinions, reflecting, and evaluating. A dialogue cannot progress if it is subject to frequent interruptions by new students entering the discussion with different thoughts. It is this lack of progression and interactivity, as well as the absence of a person's essence that I feel characterize the asynchronous conference as detached and isolated and not really a true form of dialogue.
>
> Communication transmitted through electronic media can never replace the genuineness of face-to-face communication. But, there are approaches that have been brought to light during this course that may be applied to electronic communication to reduce student isolation and facilitate learning through dialogue. Holmberg has shown that guided didactic conversations can lead to development of a personal rapport between teacher and student. On pages 36-37, Peters identifies skills that a student can develop by active participation in a dialogue. Thomas suggested the possibility of roles for students to stimulate debate, critical analysis and evaluation in a conference discussion. These approaches can certainly intensify meaningful, academic dialogue in electronic communications.
>
> If universities intend to use electronic interactions as a substitute for face-to-face communication, they must be prepared to educate both students and teachers in the practice of academic dialogue and its importance in teaching and learning in distance education. Regards, Susan Thomas.

Randy Sweeting was also impressed by the complexity of the issue. This student made it clear that there are no "simple yes and no answers" when comparing the two formats of the seminar. "Moderation and balance to me are more suitable answers than yes and no. The freedom of autonomy, the exchange of dialogue and the construction of structure may vary from person to person. One may be presented as strength, while the other(s) may be considered a weak area. The idea is to balance."

We may consider it an achievement of the continued pedagogical metacognition during the seminar when Randy finishes his intervention by saying: "Two months ago, the

questions (of the survey) would have been simply answered, now they require thought." This is more than adequate feedback for the organizers of this seminar.

2.3. Structure of Discussions

One of the consequences of the a-synchronism of virtual seminars is that discussions cannot be conducted in the same way as in real world learning settings. In fact, they differ extremely. First of all, continued target-oriented debates are subdivided into many short discussion phases. Spontaneous contributions are not possible. Because every participant can express his or her views on the issue under consideration at different times and in different sections of the seminar, too many contributions accumulate. The format of the messages and the necessity to formulate and edit the contributions allow for relatively brief statements only when the students are pressed for time. The students cannot really expand on issues of personal interest or requests for further elaboration. If the debate of a given issue is resumed after some days, it is difficult to position the contribution, refer it to earlier statements and to re-establish the context. The systematic investigation of a theme, the step-by-step dealing with sub-questions, the consideration of several aspects brought forward by several participants, the justification and evaluation of arguments and full summaries are difficult to achieve. One student characterized the discussion in a virtual seminar by saying that it consists of a cosmos of kaleidoscopic mini-dialogues. Because of the importance of the scholarly discourse for the development of scientific understanding and communication, the dissolution of the discussion, so typical of a real seminar, must be considered a grave loss and be deplored.

Can this loss be compensated? Before answering this question, I should like to refer again to the fact that virtual learning spaces differ radically from real learning spaces. This means that we have to adapt to new pedagogical circumstances and possibilities. We must be open to changes, even drastic ones. One of them is to become acquainted with an entirely new structure for discussions and the appropriate new learning activities – which are possible only in virtual seminars. Here students have to deal with and cope with a growing volume of varied and multi-faceted messages. In order to be successful they have to develop skills that differ decisively from listening to oral contributions and to enter the discussion now and then. Their main task is now »reading« and »structuring«. They have to relate new written information to previous written information of the same kind, assemble clusters of information and become familiar with the threading of discussions. This process can be an individual one according to interests, predilection, and experiences. Thus, their participation in the discussion takes the form of working with, working through and structuring growing accumulations of information. Linearity is substituted by complexity.

Performing this task requires special intellectual flexibility and an overall view of the processes going on in order not to lose track of the discussion in various threads. It demands even some amount of creativity. The students are not only supposed to distinguish themselves by writing relevant contributions, but much more so by administering the contributions of all participants, which can be a preparatory exercise for the performance of the »knowledge management« so often referred to at present.

Who is able and ready to judge which of the two forms of participation in a scholarly discourse is more sophisticated and demanding and brings about better learning: a

guided and spontaneous oral dialogue in a real seminar, or a thoroughly considered and well-formulated literate dialogue, plus painstaking and never-ending work with a growing collection of pertinent e-mails and the development of a network of information and a structured personal database?

2.4. "Inactive" Students

In real seminars, it is generally understood and more or less accepted that not all participants contribute to the discussions going on. In virtual seminars, however, students who do not log on at all are considered problematic cases. Concern about their learning is voiced. Why is this so?

In real seminars we can see those students and observe their body language, which could indicate whether or not they are actively following the discussion. This is not possible in virtual seminars. Here, students who do not send in e-mails carrying their comments or arguments are simply not present. Neither the other students nor the moderator learn anything about their learning behavior. The other students may be interested in the opinions of the missing students and moderators may wish to ascertain whether they are still participating in the course and proceeding in their learning. It is interesting that in one of the virtual seminars several students suggested that each participant should be forced by study regulations to post at least one or two comments per module. This shows that there was a group feeling, which included the "inactive" students as well. However, the majority of the students rejected this idea on the ground that such a measure would be educationally problematic.

In the literature, inactive online students have quite often been called »lurkers« which suggests that they are seen as hiding somewhere and waiting secretly because they intend something bad. The choice of this expression shows that the refusal to participate in online discussion was not approved.

Such disapproval is not justified. First of all, the so-called inactive students may be very active in their ways. Secondly, autonomous students and even more so adult mid-career students have a right to decide about their learning behavior themselves. The traditional guardian functions and the authoritarian control of the teacher is no longer necessary and may even be counterproductive. And finally, reading by itself may lead to the acquisition of large amounts of knowledge. The assertion that active participation in discussions is a pre-condition of successful learning cannot be supported. On the contrary, it may well be that these students follow the discussion of the other participants more carefully and meticulously than in real seminars and may learn even more than those who take part actively by posting one comment after another. In fact, some of them do quite well academically; several have even produced the best papers for the final test.

For this reason it is better not to refer to them as "lurkers" but as »learning witnesses« (cf. Fritsch, 1999, p. 357) or »invisible students« (cf. Beaudoin in this volume). These more neutral designations mean that they can be engaged in the learning process simply by observing the written exchanges of the active participants and that they might be learning actively in spite of remaining "invisible". Moderators should not be concerned about their learning, but about their lack of interaction with their fellow students in the learning group.

2.5. Biographies

Usually, online students present their biographies, sometimes even with a photograph. These biographies contain a short introduction of the person with regard to age, vocational and family status, place of residence. Students give reasons for taking this particular course and mention hobbies. Quite often, they describe where they live as well.

Biographical notes are critical pedagogical elements of any virtual seminar. They are shared with the other participants and with the moderator, enabling them to create their virtual awareness and increase their virtual »social presence«. This is invaluable, because all visual clues and oral stimuli of the participants are missing during the written online exchanges. The participants and the moderator have to deal with persons who are reduced to a symbolic representation by letters of the alphabet. Important psychosocial information cannot be transmitted in this way.

Small wonder that these biographies are actually read by the majority of the students, as the evaluation of the first virtual seminar shows (Fritsch, 1999, p. 376). Nearly 97 per cent of the participants went through the biographies at the beginning of the seminar. About 82 per cent referred to them during the seminar, and about 53 per cent read them when dealing with specific messages. All participants think that photos and biographies are a general enrichment of any distance education course.

In addition, moderators and faculty need to know more about the participants, who do not form a relatively homogeneous group with regard to age and previous schooling, but differ considerably in their academic careers, vocational experiences and personal circumstances. When reading their messages, marking their papers and moderating the discussion, moderators and faculty may find that this biographical information can become very significant. For instance, it is helpful to know whether the students write in their native language, whether their way of thinking is patterned by a natural science or by a discipline of the humanities, whether they are more qualified than might be expected, or whether they have to cope with professional problems. The biographies can be of further use when moderators try to address individual students and to motivate them by attempting to strengthen their self-confidence and identity. In such cases, we have to know something about their way of life. If the moderators and faculty refer to details of their biography, the students may feel that they are being addressed personally. In this way, elements of a personal relationship can be established.

In some of the virtual seminars I apply a special »postscript method«. After answering the queries of a student and presenting some of my ideas, I draw a line and write short postscripts in which I refer to such personal information in the biography. "How is your cat Suzie? We have a cat that is already 20 years old. Her name is Mauzie." - "I am sorry to learn that you have lost your position as an instructional designer." - "Congratulation on completing your second BA course at UMUC." - "As a Japanese lady studying at a Japanese college what do you think about the concept of the autonomous learner?" "I am glad that you have found a new position, hopefully a better one." "I envy you because of your house on the beach." Such remarks are not at all banal ones. They can alter the atmosphere. The participants feel that they are accepted not only as students when talking about academic matters but also as distinctive individual persons. This must be considered a pedagogical achievement. We could imagine that communication in virtual seminars can ideally take place on two levels - an official and an unofficial one.

2.6. Evaluation

At the end of the virtual seminar that was described and dealt with here, the question must be asked whether this specific pedagogical approach towards autonomous learning on the Internet has been successful. We cannot answer this question before the criteria for "success" are established for this particular case. Naturally, we cannot expect proof that well-defined kinds of knowledge have been acquired and adequately reproduced in the same way by most of the students involved. We cannot compare these learning results and express the findings in quantitative terms. The goals of this module are structurally different. Students are to become motivated and interested in theoretical interpretations of distance education and online learning in general. They are to develop a reflective attitude, which stimulates them to analyze their learning and teaching with the help of theoretical concepts. They are to recognize the specific potentials of online learning for autonomous, self-regulated learning. They are to gather first experiences in this mode of learning. They are to become acquainted with theoretical positions in the field of distance education and online learning and possibly adopt one or the other. They are to broaden their horizons and learn about and evaluate models in distance education in other parts of the world. Overall, they are to learn how to deal with the phenomenon of distance education in a professional way.

In how far can these goals be reached? It stands to reason that each individual student will achieve this in a different, personal way. The elementary school teacher deals with the contents offered in a different way to the training specialist at a big chain of hotels, or a Fleet Liaison Officer in the Navy, or the 59 year old Ph.D. in psychology, or the program manager in the IT department with a private engineering university – to refer only to some of them. They assimilate different information, aspects and points of view.

The diversity of different approaches can be seen by reading the essays the students have to write at the end of the module. They show clearly how far they have become familiar with this previously unknown way of thinking and talking about distance education. We can see that they have increased their knowledge about theories of distance education. And even more, we can also sense how they are assuming a new attitude, the attitude of persons on their way to becoming experts in distance education.

The main advantage of the essay as an evaluation instrument is that the teacher can see how independent the students have already become in their thinking about the themes under discussion. The papers show whether the students stick to texts recommended for reading or whether they report on them in their own words, presenting ideas and critical judgements of their own in unorthodox sequences, showing the relevance to their vocational experiences and reporting about how the new knowledge can be applied in the practice of distance education. The finest moments are experienced when the moderator sees how a scholarly consciousness is developing, when progress is made in assuming a theoretical attitude and in defending theoretical positions more or less skillfully. And, of course, the ultimate feeling of success can be experienced when students show in their essays that they are theorizing about distance education themselves.

A second instrument of evaluation is the posted comments and reports of the students during the seminar. Here we can see how some students are struggling with the new concepts, especially with the idea of self-regulated learning. We become aware of how difficult it is to change pedagogical paradigms. On the other hand, we can also see that

some students are already accepting, assimilating and integrating this idea. The following statements by Rita Owen are a convincing example:

"I do not believe I am atypical of other students taking this course. At the time of posting assignments ... I felt I had put into practice the concept of the autonomous learner. The key was the fact that I chose a direction for my own personal learning and pursued that avenue with reading, research and reflection based on my own volition as an autonomous learner".

Feedbacks like this one show that the goals of the virtual seminar may have been reached. Other students appreciate that they are not only, »informed« about theories of distance education, that they are not only asked, to »learn« them, but that they are also expected to explore, analyze and practice them actively and relatively independently. They have understood the new pedagogical approach.

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Appendix 1

Introductory Letter to Participants of the Virtual Seminar 9040/9041, Module 3b, September/October 2000

Dear Class Members,

I should like to welcome you to this section of our virtual seminar and to tell you that I am looking forward to our discussions. It will certainly be a great pleasure to communicate with you about theoretical approaches to distance education and distributed learning.

Let me start with two casual observations: Although we will be using the latest electronic media such as personal computers and data highways we shall still have to rely on one of the earliest means of technical communication: the written word. When we exchange written statements we are returning to the very roots of distance education, which basically means teaching and learning by writing and reading. We should keep this in mind as there are close relations between distance education and online learning.

When a discussion is being simulated by writing and reading the sequence of the contributions is necessarily a-synchronous. This may be a draw-back with regard to the liveliness and spontaneity of the discussion, but it may be also a decisive advantage for you and for me, if we like to ponder about a problem first for a time before we are ready to express what we think about the issue under consideration. This may, hopefully, raise the general intellectual level of what we will have to tell each other far above the mere conversational level in an ordinary discussion.

Some introductory remarks for our seminar sessions this week:

1. Learning strategy

While you and I know very well that the pedagogical structure of online learning in a virtual seminar differs fundamentally from the pedagogical structure of conventional seminars in classrooms we must also admit that it is difficult to adjust to the new conditions and possibilities of learning in virtual learning environments. We are all still in the process of exploring them. It is a relevant goal of this seminar not only to start thinking about theories of distance education but also to develop and shape a new and adequate strategy of learning. Therefore, it might be useful to draw up an outline of an "ideal" learning behavior. We will not be able to realize it, but it is important to know the direction in which we should go.

In our seminar you will be asked to change from receptive learning to active learning. Do not expect your moderators to present subject matter and to suggest or even to prescribe methods of dealing with it. You should know and experience an *resource*-based learning approach.

You will be asked to dig up, find, collect and store information by exploiting

- recommended texts
- Web resources
- messages from members of the seminar
- set books
- additional scientific literature (journal articles)

and to establish and alter your personal knowledge structure by integrating these activities.

You should be committed to working in groups and to collaborating actively. This means that you will communicate by e-mails with the seminar, with individual members of the seminar as well as with members of small working groups. Commenting on the contributions of others has a high priority. Remember that learning is basically a "social construction of knowledge" (Goodfellow, 2000, p. 4).

When you are to write the essays at the end of this module be sure that it mirrors your new learning activities in our virtual seminar. It should not be written in a literary style. It should not only show the knowledge you have acquired, but also the progress you have made in learning online. You might achieve this by making references to

- your sources,
- your collaborative activities,
- relevant messages of group members,
- pertinent experiences which you might have acquired in your professional life,
- opinions of your own about the problems discussed, and
- the way in which you have experienced your learning process (metacognition).

If you try to follow this advice you will be introduced into theorizing about the new pedagogical form of distance education in an *active* way which is much more important than memorizing and will result in much better learning.

2. The necessity to become an autonomous learner

This recommendation may be somewhat unusual for some of you. When working through this module try to make a conscious effort to observe your own study behavior. As you may have read on pages 46 and 84 ff. of *"Learning and Teaching in Distance Education"* learner autonomy is an important constitutive element of distance education and will become even more significant in the developing net-based learning in the »information and learning society«. My idea is that it is no longer enough to *learn* all about autonomous and self-regulated learning. We should *practice* it and by doing so become more and more independent and self-regulated ourselves. This means that the learner should make it a habit to reflect not only on the contents being presented but at the same time also on her or his learning process. Cognition should be accompanied by (pedagogical) meta-cognition. It would be very nice if at least some of the participants of this virtual seminar become conscious of this ultimate, and now no longer hidden, objective of this module and act accordingly.

3. How to acquire a professional reading habit

I am aware that you will have read some, and possibly even the greater part, of the literature recommended to you for this module. May I suggest that you go on reading and rereading those articles and sections of books during the coming weeks as this is an important feature of your behavior as an autonomous and self-regulated learner. Study especially those pieces which arouse your *personal interest* as this will help you to become motivated to participate actively in our discourses. It is much better to study intensely and in depth *one* subject that you are really interested in than to skim through *every* article and book section presented to you. In this way you will become able to build up your *personal knowledge structure*, which will differ from the knowledge structure of other class members. Knowledge cannot be measured in quantitative terms. One of the hidden goals of this module is to help you to acquire a *habit of reading and thinking about theoretical problems of distance education* even after you have finished this course. It is simply a characteristic feature of professionals in our field as well as in other professional fields.

4. Discussion problems

As to the nature of our discussions we must be careful not to misunderstand their *function.* It will differ from the face-to-face situation in ordinary college class situations in which you have gained experiences for years. Basically, the teacher is *not* supposed to offer new contents, nor does he or she wish to check on what you have read. The responsibility for your study rests mainly with yourself. However, what we are aiming at is your co-operation in isolating major problems and clarifying their preconditions and circumstances. This will enhance your understanding of distance education in a special way. It will enable you to pass judgements based on your own thinking and on your reflected convictions. The discussions will mainly take three forms, namely

- between yourself and individual class members,
- between yourself and the group of fellow students,
- between yourself and the moderator, and
- between the class as a bigger group and the moderator.

It might be interesting for you to find out whether the discussions will differ in these four distinctive formats, e.g. with regard to contents, direction and tone.

It is certainly useful to be aware that these discussions consist of sequences of »*interactions*« and »*communications*« *(have you ever tried to distinguish between these two activities?).* While it is true that these discussions can be dominated by one person or one side it is equally true that they can be balanced and that you are able to be autonomous in the sense that you are not merely a passive "listener" but also an *active* student who takes the initiative to discuss problems which are important for your understanding of distance education.

When reading and rereading the texts recommended to you in the chapter on "Course Materials" it might be useful to think about and formulate your reactions: statements, questions, recommendations, experiences and ideas. But bear in mind: do not use all of them as contributions to the discourse in the seminar. Try to select them according to the criterion whether or not they will also be interesting and informative for the *other* participants, and whether your contribution will *advance* the discussion. You might think that these recommendation are unnecessary as you are used to these seminar techniques, but experience of former virtual seminars shows that the discussions can become often critical if there are too many "trivial" questions to be dealt with which disregard and miss the objectives of the discourse. Do not put a question unless you have tried to answer it yourself twice.

Every good wish for your studies!

Kind regards, yours

Otto

Appendix 2:

Differences Between Face-to-Face Seminars and Virtual Seminars

In the review the following questions are to be answered:

Membership

A. The dialogues (conferences) help me feel like I am a member of this group seminar.

B. The dialogues (conferences) do not help me feel like I am a member of this group seminar.

Mutual Respect

See Paula´s quote from Dr. Peters' book: “Dialogical learning demands from participants 'partnership, respect, warmth, consideration, elementary understanding, honesty and sincerity'. (Peters (Reinhard and Annemarie Tausch) p. 33)

A. I experience the qualities quoted above in our dialogue (conferences).

B. I do not experience the qualities quoted above in our dialogue (conferences).

Learning Value

A. So far, I have experienced the same learning value from the virtual dialogue (conferences) as I would expect from a face-to-face seminar dialogue.

B. So far, I have experienced less learning value from the virtual dialogue (conferences) than I would expect from a face-to-face seminar dialogue.

C. So far, I have experienced more learning value from the virtual dialogue (conferences) than I would expect from a face-to-face seminar dialogue.

Findings

Name	Member-ship A (yes)	Member-ship B (no)	Mutual respect A (yes)	Mutual respect B (no)	Learning value A (same)	Learning value B (less)	Learning value C (more)
Kathleen Beckman	X						
Steven H. Arnold	X		X		X	X	X
Rhonda L. Black	X		X		X	X	
Ronald Brown	X		X		X		
Paula J. Hubble	X		X			X	
Randy Sweeting	X		X		X		
Susan M. Thomas	X	X					X
Gerald Thompson	X						
Jacqueline Timoney	X				X		X

Appendix 3:

A Questionnaire for Eliciting an Attitude of Self-Evaluation

Dear class members,

Finally, I would like to ask you to *evaluate* yourself as this is the most important element in your autonomous learning process. It is an experiment in metacognition. You should be able to ask yourself: Have I profited from module 3? And if so - how far? These are some of the possible answers. You may check whether they apply to you.

- I have become convinced - or I am now more convinced than ever before - that theorizing about distance education is very important for becoming an expert in distance education.
- I have been introduced to three key areas of theoretical thinking in distance education and what is more, I know where to find more information about them and others, I know the names of some of the more important theorists in distance education and already have some idea about what they stand for.
- I have become familiar with definitions, criteria and theoretical approaches in distance education which help me in expressing my ideas about distance education and in analyzing distance education practice.
- I have become aware of several theoretical issues. They help me in developing thoughts of my own about distance education.
- I have broadened my horizons. I have learnt that there are many theoretical approaches to distance education in other parts of the world which differ because of very particular cultural backgrounds.
- I have experienced how important pedagogical approaches are in distance education as well as in net-based distance education. If you go the distance education way hitherto unconscious pedagogical processes practiced in face-to-face teaching have to be revealed, described and adapted to entirely different circumstances. Learning by doing is not possible here any longer. We have to develop new pedagogical systems and this task requires theoretical knowledge and insights. I have internalised that technological investments alone cannot improve education. What is

important are educational goals, pedagogical strategies, student-oriented teaching, awareness of the societal context, etc. Equal investments must be made into the training and permanent retraining of teachers and other personnel involved in this process and not only in handling technology.

- I have developed clear insights into the decisive differences between expository teaching and receptive learning on the one hand and autonomous self-regulated learning on the other hand. I am inclined to believe that the more electronic technology is used in education, the more chances and possibilities will emerge for autonomous learners.
- I have resolved to go on reading relevant literature about the changes and transformations taking place presently in the concepts of distance education and to participate in theoretical discussion on this subject.

Kind regards,

Otto

THOMAS HÜLSMANN

Texts That Talk Back - Asynchronous Conferencing: A Possible Form of Academic Discourse?

THOMAS HÜLSMANN

Texts That Talk Back - Asynchronous Conferencing: A Possible Form of Academic Discourse?

1. Introduction

A couple of years ago the Center of Distance Education at Carl von Ossietzky University Oldenburg was visited by Prof. U. Oevermann[1], a renowned sociologist, with whom we discussed the issue of asynchronous communication. The discussion became controversial when the visitor declared that 'you should use the Internet for what it can do well: the storage of large databases, their quick processing, and the exchange of information'. He warned against using the Internet for communication. 'What you get when trying to communicate over the Internet is not real communication. It is at best a simulation of communication.' Obviously this position would drive horses through our undertaking to conduct a postgraduate degree program exclusively online.

The professor pointed out that academic communication rested on two pillars:

(1) the sharp (critical, if necessary, controversial) debate, and
(2) the academic publication.

Given that asynchronous conferencing shares with (1) the interactivity and with (2) the text-based character, the exclusion of asynchronous conferencing as a viable form of academic discourse seems questionable.

1.1. Writing

Asynchronous conferencing is essentially a text-based mode of communication. As such it applies the intellectual tool of writing. Writing has become a pervasive feature of our everyday life to an extent that its formatting influence has long since become invisible. This is reflected in Aristotle's analysis who regarded writing as the 'translation of speech'. Olson, in his wonderful book *The World on Paper*, quotes Aristotle stating that "Written words are the signs of words spoken" (Aristotle, cf. Olson, 1994, p. 65). As Olson points out, even then this was a view from hindsight: The ability to see words as a sequence of phonetic units is already predicated on the possession of the alphabet. Rather than being a transcription of speech writing provides a model for speech (ibid. p. 8). Olson comments further on the role of writing as facilitating reflection and, indeed in epistemology:

> What the Greeks invented was not argument but the ideas about argument, not so much knowledge as an epistemology involving a set of categories or concepts for representing forms of argument - the concepts logic, proof, research, and magic.... They allow these things to become objects of further discourse: What is proof? What is research? What is magic? What is knowledge? (ibid., p. 51).

[1] I refer to Prof. Oevermann in order to acknowledge of the maieutic effect the controversy had for this paper. I am however not sure if my short description does justice to his position.

The role of writing as a formative intellectual tool has been investigated by a number of researchers including Goody (1977, 1981, 1986), Coulmas (1985, 1992), Ong (1982), Assmann (1992) and others. Goody regards writing as the fault line of the 'great divide' between literate and preliterate societies. (This concept is now being borrowed to warn against the next great 'cyberspace divide' (Loader, 1998).) The process of learning to write can be considered 'language analysis', which facilitates the appropriation of intellectual tools like formal logical reasoning and reflection. On the social level writing liberates collective memory and expedites innovation.

This may suffice to substantiate the point that text is an important mode of academic communication. Online conferencing is essentially text based. Unlike speech it is non-transient and it is available for inspection (Kozma, 1991). Asynchronous conferencing shares this important feature with academic publication, one of the main forms of academic discourse.

1.2. Discussing

One of the earliest documents discussing intellectual tools is Plato's examination of writing in *Phaidros* (Schöttker, 1999). This dialogue can possibly be regarded as the earliest example of media analysis and has been referred to by writers like Ong (1982). Plato wrote in a time, which still had clear memories of a preliterate culture. Plato argues that text (writing) is inferior to discussion. Text could be misinterpreted once separated from the author. Moreover, text does not strengthen memory, rather it allows you to do with a weaker memory.

Plato emphasizes the importance of discussion. However, not only did he publish his attack on the written word as text, but also, if it is true what we suggested above, discussion itself is predicated on the formative influence of writing. The Socrates, who teases out contradictions and applies the formal syllogistic reasoning, himself reflects to which extent writing had already become 'a model of speech' (Olson, 1994). Plato's Socrates is decidedly a figure of a literate culture.

One of Plato's main complaints is the lack of interactivity of written documents: He compares them to products of art. Paintings (portraits) look so real and full of life that they invite you to speak to them. But then they keep silent in all their majesty. Writing produces the same irritation: The words seem to address you as if they would possess reason, but if you address questions to the text it remains silent (Schöttker, 1999). It is worth quoting the paragraph in some detail. It is Socrates speaking to Phaidros:

> Look Phaidros, the annoying thing about writing is something it has in common with painting. A good portrait presents a person as if living. So does a written text. You could think it speaks to you with some reason. However, if you ask something, because you want to understand, the text repeats itself, always saying the same thing. Once written, the text roves around with anybody and cannot distinguish those to whom it should speak and to whom not. And if mistreated and unreasonably criticized, it always would need the help of its father (author). Without him it is defenseless. (p. 35, my translation).

Not so in asynchronous conferencing: The text is not defenseless. If Plato bases the superiority of the oral communication on the fact that the author of the message can explain what is meant, observe if the other (the interlocutor) understands, and modify

the argument in the light of the understanding of the other, what would he have made of asynchronous conferencing? Asynchronous conferencing implies interactivity, which maintains a lifeline between the text and its author.[2]

2. Distance Education

Before we move to the analysis of asynchronous conferences it helps to embed this analysis into the context of distance education. Distance education emerged, for a variety of reasons, in the 19th century as correspondence teaching. It is defined as a mode of teaching and learning where teacher and learner are separated for most of the time[3]. The separation of teacher and learner must therefore be bridged by a medium through which the teacher can present the teaching content and the learner can ask questions.

Hence the role of media in distance education is central. Often little difference is made between educational media and educational technologies. Kozma (1991) defines a medium "… by its technology, symbol systems, and processing capabilities" and refers to 'technology' as "… the mechanical and electronic aspects that determine its [the medium's] function and, to some extent, its shape and other physical features." (p. 180) [4]. The important point is that media are tools. In Kozma's words: "However, the primary effect of a medium's technology is to enable and constrain its other two capabilities: the symbol system it can employ and the processes that can be performed with it." (p. 181).

For early distance education the principal medium was print (i.e. a text medium). Since in early distance education communication between teacher and learner was only possible through correspondence, the standard process of teaching needed to change. Classroom teaching or academic seminars allowed an interlacing of short periods of presentation and dialogue. This kind of 'guided didactic conversation' (Holmberg, 1989) was not possible in the same manner in correspondence teaching because of the time delay between question and answer. This circumstance had far reaching consequences for the development of the specific instructional design, which is typical for distance education, since it meant two things:

1. a strict separation of presentation and dialogue;
2. an emphasis on presentation, and de-emphasis on dialogue.

This shift implied a reduction in interactivity. It needs to be noted that, because of the high premium put on interactivity in pedagogy, this has always been regarded as problematic and identified as the birth handicap of distance education.

But as it is often the case: Limitations may be compensated by enhancements. In distance education the need to rely on the text to communicate the educational message and few options for the learner to come back with questions led to important developments in text design. Advance organizers, clearly stated learning objectives, summaries and in-text questions - all these features turn the text into something with which the learner engages

[2] You can find an interesting discussion of the same source in 'The written world', a chapter by Feenberg in "Mindweave" (Mason & Kaye, 1989).

[3] For definitions of distance education see Keegan (1990) or Rumble (1989).

[4] I prefer the term (educational) technology to 'medium' since 'medium' suggests passivity ('carrier medium'). However, what it is important to see the medium as a tool.

in the form of an inner monologue - or, in a sense, a dialogue with the text[5] (Holmberg, 1989). A new form of interactivity with the text compensated to some extent for the interactivity with the teacher. Hülsmann (2000) refers to this as 'internal' interactivity' (i.e. interactivity designed into a medium) as opposed to 'external interactivity' (i.e. interactivity with another person). External interactivity may refer to interactivity with the teacher or peers. There are several ways to rank/view these types of interactivity. Teacher-student interactivity may be seen as supporting internal (student-content) interactivity. Or internal interactivity may be seen as preparing (external) student-tutor/ teacher interactivity to make it a 'quality time' encounter. The educational value of peer interactivity is being debated. Laurillard (1993) calls it one of the great undecided hypotheses of educational theory. At the other end of the spectrum are those who see it as essential for 'knowledge building communities'.

Note that later developments of electronic media enormously enhance the potential of internal interactivity, e.g. automatically corrected multiple-choice questions, simulations, and interactive CD-ROMs.

Table 1: Classification of Media in Open and Distance Learning

	Resource media	Communication media
Examples (media/ media use)	print, broadcasting media, audio/ video cassettes, CD-ROM, Internet	tutorials, telephone tuition, correspondence, asynchronous conferencing, videoconferencing, Internet [a]
Characteristics		
- interactivity [b]	internal interactivity	external interactivity
- cost structure	large proportion of fixed costs	mainly variable costs
- location in system	materials subsystem	student support subsystem
- timing	asynchronous	synchronous and asynchronous
- pedagogy	individual learning	group learning

a: The Internet can be used to make learning resources available and for communication. b: The terms external and internal interactivity refer to interactivity between persons (external interactivity: e.g. tutor, student) as opposed to interactivity between students and learning resources (internal interactivity: e.g. book or CD-ROM and student).

The two forms of interactivity can be used to classify media. Hülsmann (2000) distinguishes between resource media and communication media. Traditional distance education emphasizes the use of resource media. As the Table above indicates this has consequences not only for pedagogy, but also for the economics of distance education.

For our purpose it is instructive to look more closely at the communication aspects of correspondence teaching and compare it with conventional classroom teaching. This will allow us to introduce a concept, which we will revisit later in the context of asynchronous conferencing: witness learning.

2.1. Correspondence Study

Correspondence studies use print as a resource medium ('one-way-traffic' delivering the content to be learned) and correspondence by mail to communicate ('two-way-traffic'[6]).

[5] An early example of designing internal interactivity into a text is the traditional catholic confession guide ('Beichtspiegel').

[6] These terms were coined by Holmberg (1989, p.2) and identify the two constitutive elements of distance education.

If we compare the communication aspect of correspondence teaching with traditional classroom teaching we find they differ in two important aspects:

i. responsiveness, and
ii. group learning.

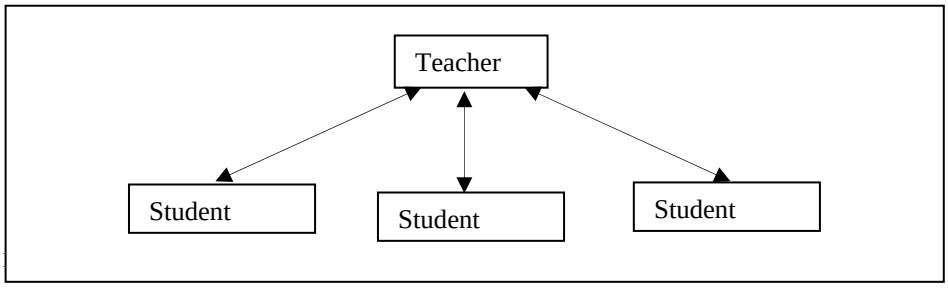
A number of authors have identified the long delay times often found in correspondence teaching as a major weakness (Holmberg, 1989). It is difficult to seriously talk about 'didactic conversation' if the answer arrives when the question is almost forgotten. Time impinges on both motivation and focus. Some authors like Rumble (2001, p. 228) give short thrift to the claim that correspondence teaching can achieve interactivity of a quality comparable to that of a conventional discussion. The rather mechanistic sounding term chosen by Holmberg for dialogue and conversation in correspondence education, 'two way traffic', signals the difference.

Table 2: Two Types of Asynchronous Communication

	Correspondence	**Classroom teaching**
Time	Long delay time	No delay
Social dimension	Individual learning; Dedicated line to tutor	Group learning; Witness learning

An equally important observation is that in correspondence teaching the social dimension of communication, characteristic for the classroom, is lost. In correspondence education each student has a 'dedicated line'[7] to the tutor and, generally, no line to his/her peers. This has led to characterizing correspondence teaching as a 'princely education' (possibly somewhat tongue-in-cheek given the low prestige correspondence study often has; cf. Peters in Bernath & Rubin, 1999, p.158). However, it is true that this communication structure is likely to reduce noise and, thus, enhance focus.

Figure 1: Lines of Communication in Correspondence Teaching



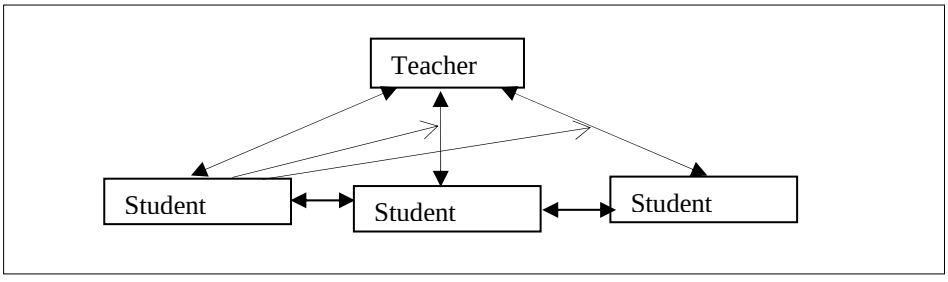
Conventional teaching has an additional social dimension: Students are taught in a class. Historically, such deviation from the 'princely' form of individual tuition was indeed not motivated by the belief that the social dimension of learning in a class is more effective, but was introduced for the rather simple reason of cost-efficiency. Today, although some educators remain skeptical about the value of peer discussions and its contribution to learning, the ability to communicate is highly rated in curriculum planning.

Figure 2 depicts three lines of communicative interactions:

[7] In telecommunications the expression means a telephone line leased expressly for the purpose of connecting two users more-or-less permanently.

- The teacher communicates with the individual student (as in correspondence teaching).
- Each student observes ('witnesses') other students' interaction with the teacher and learns through this.
- Students communicate and collaborate with each other (peer communication).

Figure 2: Lines of Communication in the Classroom



In the classroom students can witness other students communicating with the teacher. Most learning in traditional classrooms is witness learning.

(Real time) group communication is characterized by 'turn-taking', which means each participant has to wait for his/her turn. This controls the overall volume of exchanged messages. In Holmberg's model of 'guided didactic conversation' teacher-student interaction is predominant. Turn-taking severely limits the individual student's time to directly communicate with the teacher. For instance, if we have a lesson of 60 min with 20 students, each would only be able to articulate him/herself for an average of two minutes. However, in classroom teaching - unlike in correspondence teaching - each student's line of communication is open to other students' inspection, in that all witness their peers' interaction with the teacher and can learn from that. Hence, while on average a student is only able to articulate him/herself for two minutes, he/she will witness 60 min of learning interactions. The conclusion: Most classroom learning is witness learning[8].

While the 'Socratic discussion' between teacher and student is often regarded as epitomizing the educational situation, witness learning is accepted as the most prevalent mode of learning. Viewed from the individual student's learning agenda many of the learning interactions by others may be irrelevant and redundant, and only at times be a source of richness and variation.

The third type of communicative interactivity is the most contested: peer communication or collaboration. Much 'white noise'[9] is likely to be generated. Laurillard (1993) calls it "… one of the great untested assumptions of current educational practice" (p. 171). In practice, peer communication and witness learning cannot be strictly separated. Both are a potential source of noise and enrichment.

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[8] Witnessing is a form of attending. According to Laurillard (1993) attending and articulating are two distinct modes of learning. Note that attending (listening, observing, reading) and articulating oneself (speaking) are different in one important aspect: While one student attending does not deprive the other of doing so, one speaking does. In a classroom setting not all can speak to the teacher at the same time.

[9] 'White noise' is an information science term and means signals not contributing to the information to be transmitted. We use it as metaphor for communications not contributing to the learning process.

Witness learning and peer communication are features not found in correspondence teaching. Having a 'dedicated line' to the teacher filters out noise and focuses the learning process. This 'one-to-one' relationship between learner and teacher is what for Holmberg epitomizes distance education. However, the reality of this 'princely' form of education is a shift of emphasis in the teaching process: away from 'external interactivity' between teacher and learner towards 'internal interactivity' with the course material as the main learning resource. And even if distance education delivers this 'princely' one-to-one relationship between teacher and learner, it nevertheless deprives the student from learning through witnessing or peer communication. There is a trade-off: on the one hand the focus-facilitating 'silence' in correspondence teaching, on the other hand the richness, spontaneity, and immediacy of peer communication and witness learning, which is epitomized by the classroom.

2.2. Later Generations of Distance Education

Garrison (1985) and Nipper (1989) propose typologies of distance education based on the succession of the principal technology used[10]. According to this typology correspondence teaching is superceeded by the multimedia model, so well prototyped by the British Open University (OUUK). This model relies heavily on the sophisticated use of resource media, including radio and television. With the 'team approach' the OUUK institutionalized a development model, which assures a high level of pedagogical quality.

This use of (then) cutting edge resource media was complemented by rather traditional institutional arrangements for student support, consisting basically of tutor marked assignments, face to face tutorials and summer schools. For non-academic support additional mentoring arrangements were set up.

Two further developments must be observed: (i) the use of synchronous media such as videoconferencing and (ii) computer based teaching and learning, which culminates (as Net-based learning or e-learning) in the development of complete learning platforms[11] and supports many teaching functions and modes of learning.

Videoconferencing is vehemently ostracized by Peters (as cited in Bernath & Rubin, 1999, p. 162). I quote his ban in full since it vividly highlights what is assumed to characterize real distance education:

“Let us try to analyze the video-network teaching you have described:

- Is it carefully planned and carefully developed with the support of considerable financial means – which are used for instructional purposes – not for technical media? No.
- Are the best scholars in the given discipline engaged in order to produce a really authentic teaching? No.
- Has there been a cooperation of educational and subject matter specialists? No.
- Has the product - the teaching - been ‘objectified’? No.

[10] Taylor (2001) extended the model to a fifth generation of distance education.

[11] 'Learning platform' is a generic term for types of software that supports all kinds of asynchronous group communication. Its main feature is the threaded discussion. The more advanced learning platforms include the option to constitute study groups for collaboration, and assignment folders.

- Has the product been mass-produced? No.
- Do the institutions use these networks in order to target the greatest possible number of students? No.
- Do these models try to achieve what Henry Ford had in mind when he produced high quality products at low prices for everybody? No.
- Is this instruction developed in order to reach and help students who were born into socially disadvantaged families and neighborhoods and also to those who can never attend classes on campus for other reasons? May be."

The reader may later use these questions as a template to decide to which extent asynchronous conferencing might fall under Peters' ban. Like videoconferences, asynchronous conferencing re-introduces the classroom and consequently pacing, thus reducing the flexibility the individual distance learner has traditionally enjoyed. The increased access to tutorial support in asynchronous conferencing makes it possible to abandon extensive development of course materials and instead draws from material which is either already available online or could be made available in the electronic format on short notice. These are notable shifts away from classical distance education[12].

In relation to asynchronous conferencing important fault lines are emerging: between individualized study versus group study, between text and dialogue, and between traditional distance education and the extended classroom. Asynchronous conferencing seems to be able to forge a new synthesis between text and dialogue. Will it be possible to forge a synthesis between individualized study and group learning at a distance?

3. Asynchronous Conferencing

We define asynchronous conferencing as asynchronous communication between human beings facilitated by networked computers. Asynchronous means that those communicating are not present at the same time. There are various software systems that support asynchronous group communication. Some include a number of features typical for educational processes such as posting assignments or working in groups.

We view asynchronous conferencing as a medium "… defined by its technology, symbol systems, and processing capabilities" (Kozma, 1991, p. 181). Asynchronous conferences are implemented on various 'learning platforms', which have exactly the effects Kozma relates to a technology: "… to enable and constrain ... the symbol system it can employ and the processes that can be performed with it" (p. 181).

In this section we identify generic characteristics of asynchronous conferencing as opposed to face to face discussions. In the next section we re-visit the characteristics identified, this time reflecting the author's experiences when teaching OMDE 601[13]. Table 3 serves as an advance organizer for the discussion in this chapter.

[12] There are critical voices. Cf. Rumble (2001) and Ainsworth (2000).

[13] OMDE 601 is the code for the *Foundations of Distance Education* course, which is generally the first course taken in the Online Master of Distance education program (OMDE).

Table 3: Seminar Discussion vs. Asynchronous Conferencing

	Characteristics	Seminar discussion	Asynchronous conferencing
1	*Medium and its characteristics*	Speech	Text
		Transient	Stable, documented, facilitates analysis, invites reflection ('ripple effect'[1])
		Elliptic, carries emotion	Explicit, sustains argument
		Rich in detail ('cool', ear and eye)	Abstract ('hot'[2], eye only)
2	*Time*	Synchronous	Asynchronous
		Extends over short times (hours,) concentrated	Extends over long times (days or weeks), distributed
		Highly responsive ('real time')	Medium responsiveness (delay of days)
		No time flexibility	High time flexibility, though paced
3	*Space*	Shared space	Distributed space
		High visibility (paralinguistic cues incl. voice, body language)	Low visibility (only through written participation)
		Proximity (low transactional distance)	High transactional distance
		Group identity, community feeling, which can sustain conflict	Loose temporary network, low group identity, exaggerated friendliness reflects caution
4	*Social dimensions*	Group communication	Group communication
		Discussion generated by group; Limited possibility for student to sustain customized student/teacher discussion	Group discussion allows students to sustain individual communication threads with teacher
		Common group thread (tied chunks of individual contributions)	Many threads (to be woven together, e.g. through summaries)
5	*Structure of communication space*	Linear structure	Threaded structure (clusters)
		'Turn-taking' (only one at a time can speak)	Time to articulate oneself not limited: All may 'speak' at the same time
		Individually reduced time to speak, since 'one speaking deprives others of doing so'	
		Medium volume, volume controlled by 'turn-taking'	Volume varies: Possibly much (white) noise; at times deadly silent
		Linear structure, which only incompletely maps logical relatedness of comments	Threaded structure better reflects logical relatedness of comments
		Sustained focus	Distributed focus
6	*In/efficiencies*	Speaking, pointing out, is more time efficient than writing	Writing takes longer but is less transient; some comments are re-usable
		Low/medium redundancy (due to 'turn taking')	High redundancy ('all participants speaking at the same time')
		Class control at arm's length (teacher can 'shut up' students, entice others to participate).	Class management tools limited: The teacher can neither silence the participants, nor directly address questions to specific students.
7	*Quality*	Spontaneous	Reflective
		Pace keeps motivation sustained	Motivation to be to rekindled at each time of access
		Concentrated, focus kept	Arguments to be reconfigured at the time of access
		Openness, contingency of debate	Openness within pre-determined structure, confined contingency

[1] *Bernath & Rubin, 2001;* [2]*McLuhan as cited in Goyder, 1997*

3.1. The Medium and its Characteristics

A traditional face to face discussion uses language (speech) as its medium of communication. It is so common that it is largely invisible to us and we would hardly regard 'speaking to each other' as making use of a medium of communication. However, if a medium "… can be defined by its technology, symbol systems, and processing capabilities" (Kozma, 1991, p. 181) then 'speaking to each other' makes use of a medium of communication. The technology includes the features of our body, which allows us to generate utterances, the symbol systems include words, and processing characteristics include both rules of grammar and logic.

Important for the medium of speech is the shared context and interactivity. Understanding the meaning of your interlocutor's intention is not done in a process of decoding and encoding but by interpreting the speaker's intention on the basis of a shared context. Shared context is important for interpreting the speaker's intentions, and interactivity is important in asking for and getting the clarification required. It was this that Plato criticized with respect to text. The text seems to speak reasonably to you, but when you ask questions it can do little more than repeat its mantra. Taken out of context the text is helpless.

Nonetheless, there is little doubt about the utmost importance of texts. One important characteristic of a text is its stability as compared to the transient character of a verbal message. A complicated argument (e.g. a mathematical proof) requires textual stability for analysis. Textual stability allows analysis, invites reflection, and facilitates criticism and innovation. This applies to the individual situation when "… readers will use the stability of text to recover from comprehension failure" (Kozma, 1991, p. 184) as well as for society as a whole, where the ability to deposit knowledge in a written (and easily retrievable) form is a precondition for innovation.

Asynchronous conferencing can be seen as a hybrid medium sharing the communicative interactivity of 'speaking to each other' and the stability of the textual medium, which facilitates analysis and invites reflection. As such the hybrid addresses some of Plato's criticism of writing as producing texts that seem to talk reason but cannot answer questions. Text-based asynchronous communication does both – it sustain analysis and reflection and answers questions. It would be interesting to know what Plato would have made of these 'texts which do talk back'.

I may include a reference to McLuhan. I find analysis of hot and cool media to be slightly confusing (cf. Goyder, 1997, chapter 7: Communications: Hot and Cool), but it allows us to point out a feature of textual communication we will use later. McLuhan's distinction between hot and cool media could be explained by evoking the notion of symmetry in two different respects: the ratio of senses engaged, and the reciprocity of interaction. Symmetry is cool. If the senses are engaged in a balanced and even way (symmetrically) the medium is classified as cool. If the medium allows reciprocity of interaction it is cool. Print (text) is hot since it skews the sense ratio by 'numbing all senses' except the visual one. At the same time, it is hot because texts do not talk back.

Here we are: Asynchronous communication is paradoxically hot and cool. Hot because it shares the feature of text to numb all but the visual senses, cool because texts in this medium do talk back. We may forget the distinction of hot and cool, but the idea of the skewed sense ratio seems important in our context. In text based communication you

are perceived through your texts and through your texts only: You are visible only through your texts. To paraphrase Berkeley's "esse est percipi" for our context: In asynchronous communication you are perceived through your message, you are identified by your message, you are your message[14]. We will see that 'being visible only through ones texts' is of some importance for our analysis.

3.2. Aspects of Time

Asynchronous communication here is defined as a form of computer mediated, i.e. electronic communication. This means that the delay-times of responses can be scaled down close to real time. It is this enhanced responsiveness of electronic conferencing compared to correspondence that is rightly seen as an important advantage. Holmberg (1989) identifies timely responses as important for the process of learning. They impinge on motivation, focus, and efficiency. If you receive your answer when the question is almost forgotten, your eagerness for the answer as being instrumental for propelling your studies forward, is likely to be lost. The focus is eroded over time and you need to make efforts to re-configure the original question. The implied inefficiencies are obvious to anyone who has tried to play chess at a distance.

Hence, real time responsiveness is technically possible in asynchronous conferencing and thus gives it a distinct pedagogical advantage over correspondence teaching. However, in reality asynchronous conferences do not have, nor do they aim at real time responsiveness. Why is this so? Why is the immediacy, which is technically possible not seized? The reason for this is that immediate responsiveness in asynchronous conferences, i.e. classes, implies that all participants must respond immediately. This requirement for immediate responsiveness boomerangs back and constrains the flexibility cherished by the adult distance learner. Responsiveness in asynchronous classes therefore is not determined technically, but negotiated socially[15].

Especially students appreciate immediacy as far as the tutor is concerned for the very reasons mentioned above: to avoid the inefficiency of re-configuring anew the old issues (this being not only an intellectual, but also a motivational problem). Technically the required immediacy is achievable. Using labor for labor substitution, which puts more adjunct faculties on the communications frontline, institutions could achieve the responsiveness of a call center for their student consumers. So far costs have put a cap on this, although some online training institutions guarantee a response within 24 hours.

Asynchronous conferencing implies pacing due to the group dimension of the communication process. If you wish to learn as a group you must accept pacing. We will come back to this point (cf. 3.4: The Social Dimension).

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[14] George Berkeley (1685-1753) uses the formula ‘esse est percipi’ both, in his ‘Principles of human knowledge’, and the ‘Three dialogues between Hylas and Philonous’. Berkeley “… holds that external objects exist only as they are perceived by a subject. Thus, the mind produces ideas, and these ideas are things; to be, then, is to be perceived.” (IEP, The Internet Encyclopedia of Philosophy).

[15] It may be interesting to include a note on chat. Chat is often taken as a synchronous form of communication. However, as we will see, it shares essential features with asynchronous communication, e.g. that 'all can speak at the same time'. In this sense chat can be regarded as a form of asynchronous communication, while lacking the essential management of threading.

Asynchronous conferences generally extend over weeks rather than hours. This means that even if technically the time difference between a question and its answer can be (and is) reduced, the questions themselves are asked with some delay. The working/ learning pattern of students is to access the class intermittently twice or thrice a week. If the volume of communication in a class is high students may have between ten and forty messages to read. This is different than the situation in a traditional debate where all are present over the whole time of the debate. Intermittent class participation, an intrinsic characteristic of asynchronous conferencing, generates the problem of coping with volume while at the same time focus is eroding and motivation is waning.

But time also allows for reflexivity. In asynchronous conferences messages are not exchanged with the immediacy of a traditional discussion. Participants may not respond immediately. The delay between reading and responding may extend over some days allowing "… the reader to think over the dialogue for a while, rethink it later or even sleep over the messages, before responding. It seemed to be much like throwing a stone into the water (the incoming messages) and seeing the ripples expand outward (the pondering on the content of the message)." (Bernath & Rubin, 2001, p. 220).

Bernath describes this process as the 'ripple effect' – suggesting that the time delay is an incubation period during which the answer takes shape and weight.

This delay of some days may even sustain motivation. Since in asynchronous conferences the author only 'exists' through the written message, all authors are impatient to have their existence confirmed by being perceived in attracting a response. This applies especially in early phases of a course where an online presence is being established. The combination of only being visible through text and the irrevocable stability/permanency of posting the text to the public forum of the class conference produces anxiety. Waiting for a response has an element of Hitchcockian suspense: Will I be seen/noticed? What will they make of it? As soon as you find time, you check the 'unread messages' and see whether someone has commented to your response. Attracting responses gives a motivational boost teachers and peers should be aware off.

The specific level of delayed responsiveness so characteristic of asynchronous conferences has important implications. The level of this delay, however, is not technically determined but socially negotiated. If we want to learn in a group we need to compromise time flexibility and accept a certain level of pacing. Parameters determining the compromise are: flexibility required by students, an institution's budget considerations, and pedagogic deliberations (including motivation, focus, and reflexivity) by students and teachers alike.

3.3. Aspects of Space

Asynchronous conferencing is a mode of teaching and learning at a distance. While in face to face discussions the participants share a common space, in conferencing participants may be anywhere. Again, this increases flexibility and convenience for participants and extends the reach of the institution, but it has far reaching consequences for discussion processes.

In his theory of 'transactional distance' Moore points out that geographical distance in distance education has communicative consequences. Without dwelling on this theory

we note that the analysis acknowledges that geographic separation triggers other, possibly more important forms of distance: Hence the importance of media. The medium used to bridge the distance both 'enables and constrains' McLuhan, possessed by the idea that one medium engages some senses more than others, goes further and says: "… when one area of experience is heightened or intensified, another is diminished or numbed" (as cited in Goyder, 1997, p. 164). Text-based communication filters out all non-textual information. The interlocutor is only visible through his/her comments. If 'being' depends on 'being perceived'[16] than, in asynchronous conferencing being is achieved by posting textual comments. The invisibility of the other in text-based communication has, in more open forms of online communication (e.g. bulletin boards and chat), led to playing with identities. The use of avatars[17] in more controlled environments is unlikely, because access is controlled by various administrative identity checks. However, the absence of paralinguistic cues (e.g. body language, voice), which can immediately mitigate the effects of verbal messages, may eliminate prejudices, but also incite the imagination to create all sorts of fantasies about one's interlocutors[18].

I myself experienced the differences between text based fantasy projections and impressions (possibly also fantasies) when I saw some of my students personally at a UMUC meeting. Some personalities were projected well through the medium of text, whereas for others I needed additional experience to generate more realistic personality profiles than those based on text messages. The old distinction between restricted and elaborated codes comes to mind, where the restricted code depends on contextual supporting elements (pointing, frowning, intonation, gesture), which are all lost when visibility is filtered through text.

Feenberg (1989) suggests that this lack of visibility produces a certain anxiety. This is enhanced by the lapse in time until you see a response, which is psychologically experienced as a form of suspense. Participants tend to skim the 'unread messages' to see if there is a comment on what they have posted. This shared anxiety and vulnerability translates to heightened friendliness leading to a style of much 'backslapping'. This reflects the awareness that visibility is only achieved through explicit comments.

In traditional academic seminars that take place on a campus setting participants may know each other and have ample opportunity to meet outside the seminar. All this possibly creates a sense of community, which may be more than a sentimental notion and impinges on the culture of discussion. While transactional distance, where communication is filtered through a medium, creates suspense and anxiety, the academic seminar 'frames' discussion differently. The 'register' of communication modes extends from irony, illustration by exaggeration, analysis, emotional engagement to sharp criticism and conflict. The rule to avoid arguments 'ad personam' and focus on arguments

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[16] Berkeley (cf. footnote 10) is a central figure in J. Gaarder's best selling novel 'Sophie's World' (Gaarder, 1991), which can be read as a novel about studying philosophy by correspondence. I am indebted to Chris Yates for this observation.

[17] According to the Encyclopædia Britannica the Sanskrit word 'Avatara' ("descent") refers in Hinduism to the incarnation of a deity in human or animal form to counteract some particular evil in the world. The term usually refers the 10 appearances of Vishnu. http://www.britannica.com/EBchecked/topic/45474/avatar

[18] Thorsten Hülsmann (2000, pp. 45-46)

'ad rem' reflects an old academic culture of debate[19]. Constituted under the communication frame of academic debate the sense of community can be sustained under conflict. To which extent the more fragmented situation (distributed focus, reduced visibility, non transient character of comments) is conducive to a 'search for truth' remains to be seen.

3.4. The Social Dimension

We have already said a number of things about the social dimension of asynchronous conferencing. We have observed that the responsiveness in communicative delay is a function of the social dimension of asynchronous conferencing. Pacing is a compromise, reflecting the trade off between flexibility and group communication.

We have compared classroom communication and correspondence communication and seen that the classroom includes at least three modes of communication:

(i) communication between teacher and student;
(ii) witness learning;
(iii) peer communication and collaboration.

Asynchronous conferencing, like learning in class, is different from correspondence teaching. The lines of interaction between student and teacher can be inspected by every student. Like in the classroom, witness learning is possible. We argued that witnessing other people's interaction with the teacher as well as communicating with other students can be perceived as noise, when viewed from a specific student's learning agenda. At times it may be a source of stimulation and motivation. In both directions we see that asynchronous conferencing amplifies both the potential noise and the potential richness of the learning process. While the communicative volume in the conventional classroom is controlled by a process of turn taking, the asynchronous structure of the communicative space allows all participants to speak at the same time (cf. below: Structure of Communication Space). The effect is obvious: Noise and richness rise.

To give an anecdotal illustration: On one occasion the noise levels became unbearable for some students. It was during the module on the *History of Distance Education* led by Holmberg, who has consistently argued that distance education allows one to one communication with the teacher. The class was large, about 30 students, and the flow of messages relentless. Some began to crack and questioned the mode of communication. My response to students in this situation was to argue that Holmberg's emphasis of one-way-traffic (studying the readings) and two-way-traffic (developing one's personal learning agenda through one-to-one contact with the teacher), could be turned into a

[19] The difficulty to distinguish between person and argument seems to be amplified by the medium. However, M. Kakutani (2002), diagnoses ‘the diminished debate syndrome’ for todays college students in general: “Debate has gotten a very bad name in our culture ... It's become synonymous with some of the most nonintellectual forms of bullying, rather than as an opportunity for deliberative democracy.” According to Kakutani the inability to distinguish between criticizing person and analyzing an argument is not just, as it is suggested here, a characteristic of asynchronous computer mediated discussion: “It’s as though there’s no distinction between the person and the argument, as though to criticize an argument would be injurious to the person...“. M. Kakutani explains it with the legacy of deconstructionist discourse in academia and a lived experience of multiculturalism: “It's difficult because it's coming out of genuinely pluralistic orientation and a desire to get along, but it makes argument and rigorous analysis very difficult...”. If anything asynchronous communication amplifies rather than cures these tendencies.

guideline for coping with noise. (i) Read the material and develop your own learning agenda; (ii) Post your question to the teacher unperturbed by others, thus developing your own communicative thread.

The anecdote's implication is that to some extent we can see the princely (i.e. one-to-one) mode of learning, which gives each student a dedicated line to the teacher, as being absorbed into asynchronous conferencing. Each student can spin his/her interactive thread of communication propelled by his/her learning agenda, which is anchored in the course readings. However, shutting out the noise means reducing richness. Students need to do both: pursue their own learning agenda and, at times, link it to that of their peers. The role of the teacher is not least to weave these different threads together and thus making the resulting carpet visible for all. An important tool is the posting of occasional summaries.

I do not want to end this section on the group dimension of learning at a distance without drawing attention to the underlying implications since it is here where the fault lines between traditional distance education and e-education are taking shape. Do we prefer studying in a group under the supervision of a teacher? The answer to this question has both a pedagogical and a cost-effectiveness dimension. With regard to the pedagogical dimension, Laurillard (1993) points out that the value placed on peer communication and group collaboration is one of the great untested hypothesis of educational theory. With regard to cost-effectiveness, Rumble (2001) points to the possible value implications of the underlying choice. Learning in a class under the supervision of a teacher, as is made possible by asynchronous communication, may be a step towards re-introducing the cost structure of traditional education and may be incompatible with mass participation in higher education. Should we accept jeopardizing traditional democratic credentials if there are no sound pedagogical arguments (effectiveness reasons) to deviate from the one-to-one education, which Holmberg (1995) believes epitomizes distance education?

3.5. Structure of Communication Space

Being separated in terms of both time and space constitutes a communication space of a structure distinctly different to the one known from face-to-face discussions. Real time discussions are, by their time-bound nature, linear. They have a beginning, a middle, and an end. The time span over which such a discussion extends can be imagined as a line of definite length. A traditional debate is structured by turn-taking: Everyone has to wait for his/her turn to make a contribution and in this way the time line is successively filled out. Since each contribution extends over a certain interval, only a finite number of contributions can be accommodated. In sixty minutes, for instance, twenty participants could on the average speak for only three minutes. For this reason we said that most learning in class does not happen by actively articulating oneself, but by witnessing others doing so.

The finite time, the number of students, all this means that there is competition in articulating oneself. If, with Laurillard, 'articulating oneself' is considered an important mode of learning, most participants in a face-to-face discussion are deprived of doing so most of the time. This is a disadvantage of the traditional classroom, and more so if one considers actively articulating oneself as an important mode of learning. The situation is different in asynchronous communication: Like someone posting messages on a bulletin

board does not deprive others from doing so, in asynchronous conferencing 'all can speak at the same time'.

Table 4: Modes of Learning and Public Goods

	Private good (scarce resource)	Public good[1] ('nondepletable' and 'nonexcludable')
Traditional classroom	Articulating oneself (e.g. speaking publicly to the teacher)	Any form of attending (viewing, listening, reading)
Online classroom		Any form of attending (viewing, listening, reading) Articulating oneself (e.g. speaking publicly to the teacher)

[1]*For the definition of public goods cf. Hallgren & McAdams (1997)*

To bring out the contrast a distinction made in economics ‘between private and public goods - may be used. While private goods are used up, the more people consume them, public goods are nondepletable and nonexculdable. (Most consumer goods are private goods, the daily bread being the simplest example. National defense is a public good[20].) In the traditional classroom any form of attending can be seen as sharing some characteristics of a public good while time to articulate oneself remains a scare resource (and consequently a private good). Since in the online classroom all can speak at the same time both modes of learning, attending and articulating oneself can be construed as public goods. Articulating oneself in an online classroom is not depletable, nor excludable since one party doing so does not in any way interfere with others doing the same thing[21].

Let this sink in: If we believe that articulating oneself is important, we have discovered a mode of learning where not only 'attending' is what economists call a nondepeletable good, but active participation, the mode of 'articulating' oneself as well. This is a fundamental difference to the traditional classroom, where all can listen all the time, but only one can speak at a time. In asynchronous communication all can listen at the same time *and* all can speak at the time as well.

The obvious consequence is the generated 'white noise'. In information theory this term refers to interfering noise, which makes decoding difficult. For the individual learner asynchronous classrooms can be much noisier than a traditional class. Although even in a traditional class not all witnessed interactions between ones class mates and the teacher are relevant to the individual learning agenda, the ability of the teacher to closely manage and elicit contributions, makes the witnessed interactions in the

[20] Hallgren & McAdams (1997): “Everyone in the country, including newcomers and newborns, is protected simultaneously and to the same degree by national defense (whatever it is). Because your neighbor is protected does not mean that you are protected any less. The resource is not depleted by being used by your neighbor; and because your neighbor partakes of its benefits does not mean that you or others are excluded from the same benefits.” (p. 458).

[21] This paraphrases Hallgren & McAdams (1997): "Knowledge of the Internet is not depletable, nor it is excludable: knowledge enriching one party's understanding does not in any way interfere with the similar enrichment of others." (p. 471).

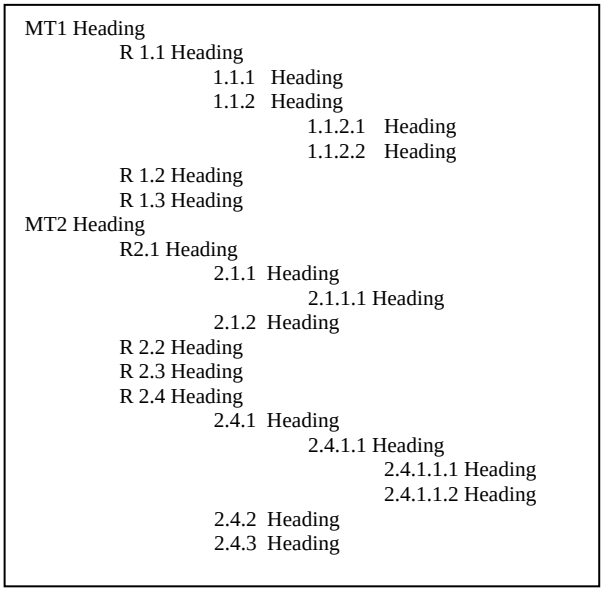
traditional class more likely to be relevant. In good classroom teaching balancing peer contributions leads towards enrichment rather than noise.

The fact that one speaking does not deprive the others of doing so means that 'articulating oneself' in an asynchronous class is not a 'scarce resource' (as it is in the traditional class where you compete for 'articulation time'). This, together with the fact that online tutors have less efficient means to moderate as tightly as a classroom teacher does have (who may immediately interfere to silence someone), creates a high level of redundancies in the asynchronous class.

The problem is that articulating ones own thoughts is most often enriching for oneself, especially if done in interaction with a teacher who can provide feedback. This is not necessarily so from the perspective of the others. Hence, the structural feature of turn-taking in a traditional class protects you from much noise, but at the same time deprives you of learning through the articulation of your own thoughts. The question is: Can the potential richness implied by the possibility of all 'speaking at the same time' be harnessed in a way that it becomes a source of enrichment rather than noise?

Part of the answer lies in threading. 'Threading' in asynchronous conferencing works as follows: Each message receives a number (i.e. the thread number of the message). Messages can either be juxtaposed or attached to a preceding message. The level on which threads start are often called 'main topics'. The *n*th main topic carries the thread number *n*. The *i*th response to the message *n* is labeled *n.i.* Figure 3 shows how discussions threads are displayed through thread numbers. There, review the second main topic (MT2). Responses to it are labeled R 2.1, R 2.2, R 2.3 and R 2.4. These responding messages are ranked according to the time they arrive on the server. Messages that respond to response R 2.4 are then labeled 2.4.1, 2.4.2, and 2.4.3... etc. Figure 3 shows how discussion threads are displayed through thread numbers.

Figure 3: Example for a Threaded Structure



It is threading that distinguishes asynchronous discussions from mere bulletin boards. It also reveals the difference between the linear structure of the traditional debate, characterized by turn-taking, and the 'threaded' structure of asynchronous debates, reflecting the logical relationships between contributions. This brings back into focus the fact that the apparent linearity of traditional debates is a false one. The turn-taking structure, characteristic for the traditional debate, obscures the logical relationships between the contributions. It is as if the threads were tied behind one another, irrespective of where they belong. In conventional debates it is often quite difficult to refer back to a preceding statement. The transient character of the oral message, together with the fact that through turn taking a complicated logical thread structure is forcibly mapped into a procrustean linearity, contributes greatly to the confusion in many debates. The clear and visually explicit threading gives structure and provides a mind map, which can make the high volume of communication comprehensive. There is a trade-off: Threading militates against multiple references in one message, i.e. weaving together various contributions in a complex whole. Chunking, the prerequisite of effectively using the threaded structure is good for analysis, less so for synthesis.[22] The answer to the question whether the potential richness of the debate can be harnessed, lies to some extent in the feature of threading, which disentangles the logical relationships obscured in the traditional debate by a false linear appearance.

Participants will need to learn how to contribute to a threaded conference. Threaded conferences imply a format to which participants must accommodate their contributions. First, they need to learn where to place a contribution. Secondly, they need to learn to decompose complicated and lengthy ideas into 'chunks', which can be placed unambiguously.

This evidently impinges on the nature of the contributions. In traditional face-to-discussions all participants are present all the time during which the discussion takes place. When it is someone's turn to finally chip in his/her contribution, this will include references to various points raised at different times during the preceding part of the debate. One could say that the whole history of the debate bears on the last contribution.[23] Analysis of asynchronous conferencing suggests something different. Asynchronous debates extend over longer time spans. Participation pattern is intermittent. At times of access participants may have to cope with high volume of messages while at the same time having difficulty to re-configure the issue and re-kindle motivation. How do they cope in practice? They access the class and see many 'unread messages'. They open a message and read it on the screen. Much more than in a face-to-face debate in the online case attention is drawn to the last message, i.e. to the message opened. In a traditional debate the 'line of argument' (its history) echoes in the minds of all participants, since focus and presence is kept throughout. The online debater's attention will be skewed in favor of the last message. What does this mean? It

[22] Perraton, when introduced to this feature, observed that this illustrates that once again the ‘technological tail is trying to wag the pedagogical dog’. All (the more important are the summaries and conference wrapping-up messages.

[23] This recalls Hegel: Debates (as well as history itself) progress through dialectical processes of differentiation (distinction, negation) onto a higher level. Hegel uses the German word 'aufheben' (Froeb, (n. d.) reports that the technical term used in English is ‘sublate’) to describe this form of dialectical progress. The German word embraces connotations of distinguishing (lat. 'negare'), eliminating (lat. 'tollere') and lifting to a higher level (lat. 'elevare'). In such a debate we see that the whole history impinges on the last argument.

suggests that in face-to-face discussions the 'horizontal integration' of arguments is likely to be greater. Horizontal integration means the way in which the preceding history of the debate (i.e. arguments *1, 2, to n-1*) weighs on argument *n*. In asynchronous conferences it is likely that argument *n* is predominantly linked to argument *n-1*.[24] Preceding arguments are likely to be shrouded in memory. While full threading principally allows tracing the history of an argument, it requires a considerable amount of effort. It would be helpful to be able to click on a thread number and call up the exact message thread leading to this argument. For example: Assume you have opened the message with the thread number *2.4.1.2*. It would be helpful to have a 'View thread' function that displays all the messages leading to 2.4.1.2 in sequence, i.e. the messages *MT2, R2.4, 2.4.1* and *2.4.1.2*. Such a function would help to re-configure the relevant line of arguments and support horizontal integration.

Such features seldom exist although they would be important tools to protect from 'veering off topic'. The fact that only message *n-1* impinges on message *n* means that the longer the thread, the more likely it is that contributions 'veer off topic'. This is natural when each topic is discussed without relating back to the issue under discussion (i.e. the main topic). It is as if successive archers were to define ‘the hit’ of the preceding archer as their new target ('bull's eye') for the one following. It is obvious that in such an arrangement the likelihood of the last archer being way off the original target is great.

However, when analyzing horizontal integration we need to compare like with like. A good discussion is often evaluated according to the extent that 'participants build on the arguments of others' or, even more appreciated, where there is evidence that some participants have modified their ideas under the influence of what others have said. However, a face-to-face discussion cannot be viewed as one integrated line of argument because as analysis suggests, several lines of arguments are tied behind one another in spite of their logical relationship[25]. Even though, 'building on each others argument' may not be the strongest point in asynchronous communication, if it is true that argumentative history is likely to be forgotten and cumbersome to retrieve.

We could promote a different criterion for appreciating asynchronous discussion in relation to what we call 'vertical integration'. This refers to the logical decomposition of an issue, allowing, if not an exhaustive discussion of the issue at hand, a wide coverage of aspects. Here teachers and course designers have a strong hand: Often they start the debate by decomposing the teaching content into main topics. This 'fans out' the different aspects of the topic.

The decomposition of the theme of a module into main topics needs to be 'comprehensive'. On the level of responses students should also learn to keep the idea of partitioning in mind. What are the aspects of the main topic? To which aspects have others already opened a main topic? Which aspects remain? Is what I want to post better posted as a

[24] We may refer to this as a Markov property. Markov-chains are stochastic processes without memory: "The characteristic property of this sort of process is that it retains no memory of where it has been in the past. This means that only the current state of the process can influence where it goes next...." (Lofting, 2000) I am indebted to my colleague A. Kleinschmidt for this observation.

[25] I may be forgiven for using the term 'logical relationship' in a slightly vague manner. Programmers sometime use 'parent' relationship to describe the message to which another message has been attached. That I use 'logical relationship' reflects my expectation that the process of attaching a message depicts an argumentative relation. It goes without saying that in practice this is often not the case.

main topic or has it been mentioned as an aside to the responses posted by others? Participants need to become aware of noise as a potential problem and learn to actively manage redundancies.

To draw things together: We have two fundamental strengths of asynchronous discussions, albeit with some irritating side effects. The first is that 'all can speak at the same time', creating potential richness and at the same time being a source of noise. This richness can be harnessed by what turns out to be the second important feature of asynchronous communication: threading, i.e. richness being displayed within structure. While appreciating the threading function, retrieving argumentative history remains a problem. However, the strong aspect of asynchronous communication is most likely not the building on each other's argument or the horizontal integration of the discussion, but the exhaustive coverage of aspects through 'horizontal integration' supported by threading. To achieve this better support of 'horizontal integration' is necessary, which can, at least partly, be achieved by improving software (i.e. full threading and 'View Thread' functionalities).

3.6. Aspects of Efficiency

The structure of the communication space is determined by the parameters of time, space, and the social dimension of group communication. The asynchronous character of posting messages and the distributed times of access produce the effect of accumulating messages. Being separated in time and having only text to rely on reduces visibility. The group dimension allows all to articulate themselves without the volume mitigating effects of turn-taking. There are a number of obvious inefficiencies involved:

(i) Speaking is more time efficient than writing.

(ii) Due to the fact that 'all can speak at the same time' the level of redundancies and noise increases.

(iii) The discussion is extended over a long period and accessed at times of convenience, which means that focus must be re-configured and motivation re-kindled.

(iv) The moderator of an asynchronous classroom can neither 'shut up' verbose students nor entice participation of low visibility learners.

Most of us type more slowly than they speak. This leads to inefficiencies, since all - even the trivial or practical communicative messages - must be typed. In a classroom situation students can quickly be shown how to turn a table of figures into a graph. If you have to do it at a distance it seems you need to produce a small manual. However, the positive side of such efforts is that if these resources are properly managed they are re-usable. To make items re-usable requires efficient resource management, which is not an entirely resolved issue[26].

Comparing the conventional classroom and correspondence teaching shows that from the individual learner's point of view witnessing the class discussion might include distracting elements. These may include contributions, which are irrelevant or repetitive from the perspective of the respective student's learning agenda. In classroom discussions

[26] Archiving material in a form retrievable by a virtual agent like 'Uncle Bulgaria' could automatically bring it to the user's attention, but for me this still seems like fiction. Meet Uncle Bulgaria in Masterton (1998, p. 255).

we saw that to some extent turn-taking serves as a noise control, while in asynchronous conferencing this mitigating effect is lost. 'All can speak at the same time'. However, as it is the case for classroom teaching noise can be a source of richness. The amplified noise of the asynchronous classroom is not only the unavoidable downside of the increased opportunity for students to articulate themselves, it may lead to very valuable contributions even from the perspective of an individual student's learning agenda. What is required is learning how to cope. For the student it is important to learn how to 'skim and skip' while teachers help by weaving the various discussion threads together in their summaries posted at the end of each week or module.

Anyone who has sometimes played chess at a distance immediately sees the inefficiencies created by the fact that focus cannot be sustained in asynchronous debates. Debates are designed to extend over a longer time period, not least to accommodate the flexibility requirements of online learners. These debates extend over weeks and the points of access are chosen at times compatible with the learner's schedule. The down side is that at the time of access the learner has to re-configure what has been the issue. Considering that at times of access a large number of messages are/could be waiting not only one thread of arguments needs to be re-configured but several. Students may be unwilling to spend much time beyond reading the message at hand. Nevertheless, the highly documented character of the debate allows to re-configure an argumentative situation in principle even better than the transient character of a face-to-face debate, albeit there the focus is easier to sustain.

To sustain motivation may be even more difficult. There are occasionally messages which trigger the previously mentioned 'ripple effect' in which participants continue to turn a message in their heads. But this may well be the exception rather than the rule. In a heated emotional debate motivation flares up, which is difficult to sustain over a longer period of time. However, 'suspense' may serve to sustaining motivation: We have already referred to the famous phrase coined by G. Berkeley that 'esse est percipi'. Since visibility is only achieved through text messages participants can confirm their classroom existence by writing only. Producing objective messages open to scrutiny, and releasing them to a largely unknown audience generates a form of anxiety. Participants are anxious to see how they will be perceived. This creates an atmosphere of suspense, which may sustain motivation. Teachers could make use of this Hitchcock/Berkeley effect and signal to students that they have been seen ('perceived'), thus confirming their virtual existence.

Class room management is more difficult in an online classroom. Since visual cues are missing there is no possibility to draw a pensively sitting class member into the discussion by dropping a remark like 'Kim does not seem to agree. What do you think?' Firstly, I don’t see his/her face, secondly there is no point in elbowing someone into the debate when there is ample space. The situation of the online classroom is framed by the assumption that there is no interference from or competition with other students, which could be seen as a barrier to seizing interactive opportunities. Why then point out to a student that he/she should not always occupy the stage because other voices could not be heard? In online classrooms there too is a psychological fallout, often generated by high quality, immediate, frequent, and lengthy contributions, which are perceived as intimidating.

4. Experiences from the *Foundations of Distance Education* Course

In this section we shift levels from the more theoretical level of analyzing asynchronous conferencing to the experiential level of describing a concrete course: OMDE 601, *Foundations of Distance Education.* This section outlines the content of this course, looks at the learning platform 'WebTycho' and its navigational features, which facilitate communication, and goes on to discuss the problem of 'coping with volume' before taking a closer look at aspects of quality. This is based on only a small segment of one of the course modules and serves purely illustrative purposes[27].

4.1. Course Outline: OMDE 601

The *Foundations of Distance Education* course is structured in four modules:

- Module 1: Introduction,
- Module 2: History and Principles of Distance Education
- Module 3: Pedagogy of Distance Education and Theoretical Approaches to Distance Education
- Module 4: Institutional Aspects of Distance Education

Module 1 introduces the program and allows participants to become acquainted with the learning platform as well as with one another. Early on students are given a group task in the hope that this helps reduce anonymity and increases mutual visibility in a smaller group. The task requires participants to discuss their previously existing (or non-existing) experiences with distance education and to suggest a definition.

Module 2 goes on from there and suggests a definition, traces the history of distance education, and identifies its constitutive elements. The module includes introductions by Holmberg, the 'visiting expert' in this module.

Module 3 discusses the pedagogy of distance education based on readings from Moore and Peters, and discusses theoretical approaches to distance education, including Peters' theory of distance education as the 'most industrialized form of teaching and learning'. Peters himself is the visiting expert in this module.

Module 4 is about distance teaching institutions. This module asks students to undertake a major collaborative project. They survey distance education institutions and classify them according to organizational models they consider relevant.

4.2. WebTycho

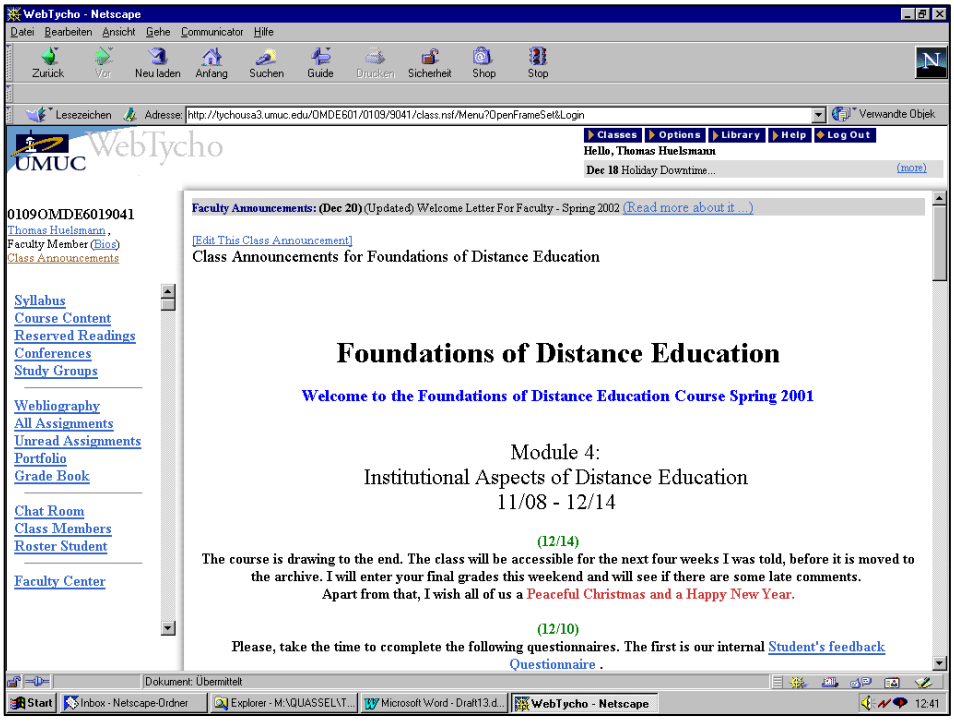
The asynchronous communication in these seminars is supported by WebTycho[28], UMUC's proprietary learning environment based on Lotus Domino. The screenshot below shows the navigation pane on the left, which starts with Syllabus. In Syllabus the course objectives are identified and the schedule, which also informs about the course's pacing, is laid out. Course Content and Reserved Readings make the required and suggested readings for this course available and name the necessary textbooks.

[27] The next chapter re-prints a slightly edited version of a collaborative group exercise carried out by students of this course.

[28] In honor of Tycho Brahe, the Danish astronomer (1546 - 1601)

Conferences, which is the core feature of the course, will be analyzed in some detail below. Study Groups allows the teacher to divide the class into groups in order to work collaboratively on specified tasks.

Figure 4: Screenshot OMDE 601

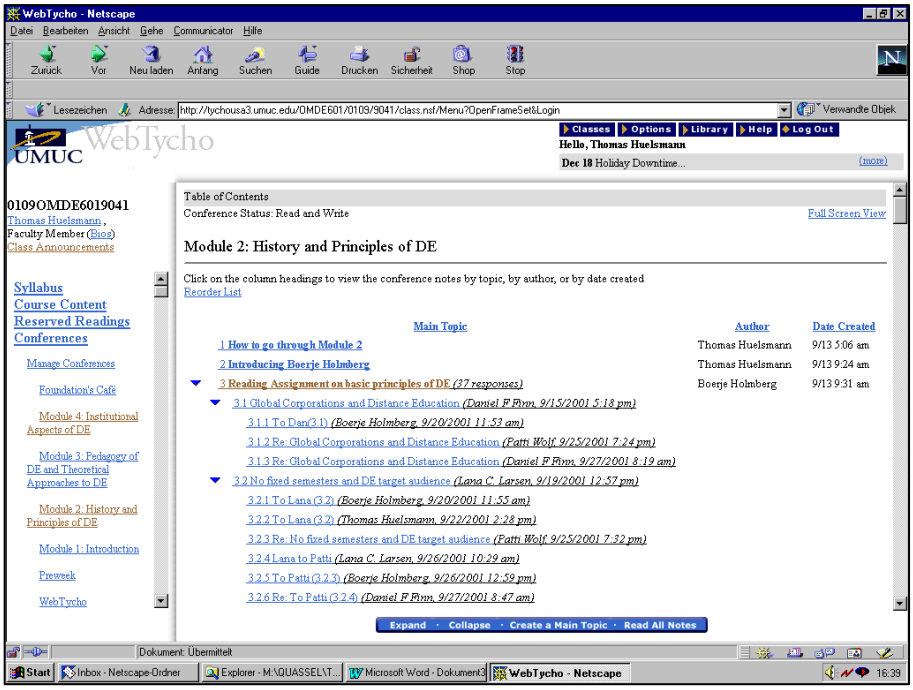


In Webliography teachers and students designate course related web sites. Then follow some assessment functionalities: All Assignments is the space where students upload their assignments for grading and feedback; The Portfolio provides the teacher with quantitative information on students' contributions. While teachers have access to the all students' Portfolios, a student can see only his/her portfolio. This also applies to the Grade Book, which automatically compiles the grades entered in All Assignments.

The last group of features includes a Chat Room[29] facility (which logically would belong to the communication features like Conferences and Study Groups) and administrative features such as Class Members and Roster Students. This left navigation pane ends with the Faculty Center.

[29]A note on chat: Chat is often regarded as a synchronous form of communication. In this respect it is usually compared to personal face to face communication. But this is a superficial comparison. In fact, chat is much more similar to asynchronous conferencing, due to the fact that, as in asynchronous conferencing, in chat 'all participants may talk at the same time'. Therefore, rather than sharing the linear structure of the face-to-face debate, which is characterized by 'turn taking' it generates discussion clusters or threads. However, chat transcripts are linear since the software for chat does not support threading. This means that chat generates all the managerial problems of asynchronous discussion without providing the software support to manage them.

Figure 5: Screenshot Showing Threading in WebTycho



The main navigation pane on the left of the screen is complemented by a smaller one on the top. 'Classes' is a tool giving the teacher quick access to the other classes he or she teaches. 'Options' allows customizing the main panel to some extent by setting preferences. 'Library' is where students may access UMUC library facilities while 'Help' gives access to the UMUC help desk.

Since this paper is on asynchronous communication, it is the conferencing feature of WebTycho (i.e. Conferences), which we need to look at more closely. The most important observation here is that WebTycho supports threading only to the third level. These levels are referred to in WebTycho as Main Topic, Response and Aside. Recall what was previously said on how threading works: Each message gets a number. If a message has the number *n*, the *i*th response to the message *n* is labeled *n.i.* Consider the third Main Topic: Responses to it would be labeled *3.1, 3.2, 3.3,* ...etc. The messages would be ranked according to the time they arrive on the server. If messages are responding to, say, message 3.2. they are labeled *3.2.1, 3.2.2, 3.2.3...* etc. The display of the threaded discussion identifies the different threads. The number *3.4.12* means that the so labeled message is the 12th Aside to the fourth Response on Main Topic 3. However, since beyond the level of Asides no further threading is supported, *3.4.12* may be commenting on *3.4.7* which in turn may comment on *3.4.3.*

Figure 5 shows a part of conference Module 2: History and Principles of DE. You see a part of the expanded version. For the sake of simplicity we will assume that this is the complete Main Topic 3.

The logical structure exhibited in the screen shot is displayed in the diagram below: Main Topic 3 receives two Responses (thread number *R 3.1*) and (thread number *R 3.2*). *R 3.*1 receives three Asides *A 3.1.1, A 3.1.2, A 3.1.3. R 3.2* receives six Asides *A 3.2.1* to *A 3.2.6*.

Figure 6 presents the situation of the above screenshot depicting the three levels for which threading is supported by WebTycho.

Looking at the headers (or analyzing the messages themselves) reveals how the Asides are related to each other. Analysis of the thread emerging from *R 3.2*, for example, shows that *A 3.2.4, A 3.2.5,* and *A 3.2.6* are comments on *A 3.2.3* rather than the response *R 3.2* (all refer to a message by PW). Hence, if WebTycho were to support threading to a level beyond level three we would have a thread structure as depicted in Figure 7.

Figure 6: Incomplete Threading

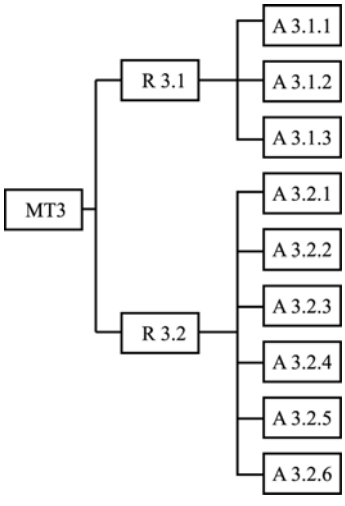
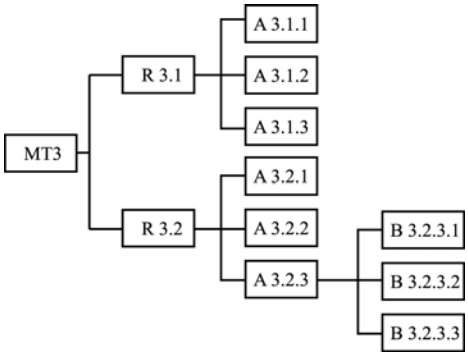


Figure 7: Complete Threading



In Figure 7 the situation of the above screen shot if threading would be supported to a level beyond the Asides. This new level is referred to here (tongue-in-cheek) as 'Besides'. *A 3.2.4, A3.2.5,* and *A 3.2.6* turn into *B 3.2.4, B 3.2.5,* and *B 3.2.6*. (If we would continue A logical continuation with thread numbers would be *B 3.2.3.1, B 3.2.3.2, B 3.2.3.3*.):

Why is it important to have complete threading? As mentioned above one of the strengths of asynchronous communication is that the logical structure between contributions is better reflected. Turn-taking forces arguments into a linear structure notwithstanding their logical relationships. Hence, to *not* support complete threading precludes the opportunity to fully display the logical relationship between arguments.

Furthermore the threaded display of structure allows to some extent to cope with the potential noise level of asynchronous discussions (recall: 'all can speak at the same time'). Threading imposes structure and makes the high communication volume comprehensive, thus harnessing the noise and making it a source of enrichment.

The lack of horizontal integration was identified as a weakness of asynchronous communication and a clear display of threads would allow identification of 'lines of arguments' (i.e. the thread leading to a particular comment). If participants are to be aware of the history of an argument rather than just the last one at hand tracing a thread is important.

The 'View Thread' functionality of WebTycho serves this purpose only poorly. If wanting to re-configure the line of argument leading to the opened comment in the Aside *A 3.2.5*. Figure 7 suggests that a full text display of *MT3, R 3.2, A 3.2.3* ending with *A 3.2.5* is needed. By pressing 'View Thread' the full volley of the text messages *MT3; R 3.1; A 3.1.1, A 3.1.2 A 3.1.3; R 3.2; A 3.2.1, A3.2.2, A3.2.3, A 3.2.4, A 3.2.5, A 3.2.6* is displayed. This is not only much more than wanted, but the lack of structure beyond the level of Asides makes it difficult to sift out what matters. To reconstruct the relevant line of argument, i.e. *MT3, R 3.2, A 3.2.3, A 3.2.5* requires extensive browsing through content, which many users (myself included) find too cumbersome. This shows that WebTycho's software designers do not reckon supporting the horizontal integration of arguments is worth the effort. Experience also shows that the participants themselves do not believe that tracing the 'lines of arguments' are worth an additional effort. When asked to include the thread number in the header of the message one is addressing, only a few students adopted the practice. By including so called 'tracer numbers' it would become possible to reconstruct an argument's history where it is lost due to incomplete threading. For example: If *A3.2.5* had included in its header *3.2.3* to identify the thread number of the target, headers would look like this:

> *3.2.5* Message to Patti *(3.2.3)*
> *Thread number*; Header title; *(Tracer number)*

This is practiced in Figure 6: Incomplete threading, last message header. However, the message was posted by a faculty member and students rarely adopted this practice. There is some evidence that neither on the design level nor on the user level much need is seen to improve 'horizontal integration', i.e. the awareness of the history of an argument. In this author's opinion incomplete threading with an almost useless 'View Thread' functionality has a decidedly negative influence on the quality of a discussion. An indicator for good quality is participants' building on each other's arguments and evidence that their position in the course of the discussion is modified. The weak functionalities enabling horizontal integration suggest that asynchronous debates on WebTycho type learning platforms are likely to function poorly.

4.3. Coping With Volume

The potentially high volume of messages in asynchronous conferences is a consequence of a structural feature: All can talk at the same time without mutual interference. Articulating oneself in asynchronous classrooms is a 'non-consumable good'. This was identified as a source of both noise and potential richness.

In the analysis of 'aspects of time' we said that asynchronous conferences typically extend over weeks rather than days or hours. They are popular as modes of study for adult learners because participation can be flexibly integrated into the learner's schedule. This makes participation intermittent. The problem of lost focus and motivation has been identified.

Together, intermittent participation patterns plus high message volume can cause participants, at times of access, to be confronted with large numbers of new messages (signaled as 'Unread Notes'). This will be illustrated empirically. The figures displayed in the following tables relate to the conference held by Peters in OMDE 601 (Fall 2001). The respective main topics are number four to number nine.

Table 5 depicts the number of messages per main topic while the conference was developing. After a slow start volume rapidly increases and stays on a high level almost until the end. Altogether, the debate extends (effectively) over 11 days and draws 147 comments including those of faculty. Most informative is the last row in the table where for each day the 'accumulated number of messages having arrived up to this day', is displayed. The significance of these figures is in showing that volume is too high to cope with if participation is infrequent. Assuming a not unrealistic login pattern of 'once in three days' we see 5 messages on Day 5, which is quite manageable; we deal with them. On Day 6, however, we would have 57 (62-5), which is an obviously unmanageable amount.

Table 5 : Distribution of Comments Over Main Topics

	Day 1	Day 2	Day 3	Day 4	Day 5	Day 6	Day 7	Day 8	Day 9	Day 10	Day 11	Sum
MT4	1	0	0	6	1	5	0	0	0	1	0	14
MT5	1	2	0	9	6	6	12	8	9	10	6	69
MT6	0	0	0	1	2	1	0	0	0	0	0	74
MT7	0	0	0	9	5	1	5	2	8	1	2	33
MT8	0	0	0	1	0	0	1	1	4	3	1	11
MT9	0	0	1	0	2	2	1	4	3	3	0	16
Sum	2	2	1	26	16	15	19	15	24	18	9	147
AS	2	4	5	31	47	62	81	96	120	138	147	

AS= Accumulated Sum

If one takes into account that these messages are distributed over six different main topics (12 for MT4, 21 only for MT5, 4 for MT6, 15 for MT7, 1 for MT8, and 4 for MT9), which are as different as 'the industrialized mode of teaching and learning' and Moore's concepts of 'structure, dialogue and learner autonomy' this is very likely to have a disintegrating effect on focus. It is not possible to concentrate on one issue since there are six to be processed in parallel.

Table 6 looks at the same conference from the perspective of the individual participants. Of the 30 participants 21 participated visibly. The trajectory of e.g. FE's participation, with a (visible) access frequency of five is quite above the average access frequency of 2.4. However, even for FE the volume of communication must be difficult to digest at times. Day 4 has 25 messages to read, the next access Day 5 has fifteen new messages. On the next day of access (Day 9) 80 messages await to be read. The volume then drops off, and on Day 10 there are 17 messages, on Day 11 there are only eight messages to be read.

The calculation in Table 6 is predicated on the - probably wrong - assumption that each time a class is accessed a message is posted. The calculation reflects the overload of messages participants would have to cope with if they only logged in to the conference two or three times and felt they needed to keep track of everything said. However, it is likely that many participants access the classroom more often.

Table 6: Distribution of Comments per Participants

		Day 1	Day 2	Day 3	Day 4	Day 5	Day 6	Day 7	Day 8	Day 9	Day 10	Day 11	Sum	AF
FAC	OP	0	0	0	4	3	12	0	2	13	6	4	44	7
1	AC	0	0	0	0	0	0	0	0	1	0	0	1	1
2	BP	0	1	0	3	0	1	0	0	0	0	0	5	3
3	BS	0	0	0	0	0	0	0	2	0	0	0	2	1
4	CF	0	0	0	0	0	0	0	1	0	1	0	2	2
5	CS	0	0	0	0	0	0	3	2	0	0	0	5	2
6	CY	0	0	0	0	2	0	1	0	0	0	0	3	2
7	DF	0	0	0	7	3	0	1	0	0	4	0	15	4
8	FE	0	0	0	1	1	0	0	0	2	1	2	7	5
9	GB	0	0	0	1	0	0	0	0	0	0	0	1	1
10	JS	0	0	0	0	0	0	0	2	0	0	0	2	1
11	KC	2	0	0	0	0	0	1	0	0	0	0	3	2
12	KS	0	0	0	0	0	0	0	0	0	4	0	4	1
13	LS	0	0	0	5	4	2	0	1	0	0	0	12	4
14	MN	0	0	0	1	0	0	0	0	0	0	0	1	1
15	PH	0	0	0	0	0	0	0	0	0	0	2	2	1
16	PW	0	0	0	0	0	0	4	0	5	1	0	10	3
17	RH	0	0	1	3	2	0	0	1	1	1	0	9	6
18	RK	0	1	0	0	0	0	3	3	0	0	1	8	4
19	SC	0	0	0	1	0	0	1	0	0	0	0	2	2
20	SF	0	0	0	0	1	0	3	0	2	0	0	6	3
21	YS	0	0	0	0	0	0	2	1	0	0	0	3	2
	Sum	2	2	1	26	16	15	19	15	24	18	9	147	2.43
	AS	2	4	5	31	47	62	81	96	120	138	147		

AS= Accumulated Sum; AF= Access Frequency; The figure 2.43 represents the average access frequency.

The participation patterns depicted in Table 5 cast some doubt on the hypothesis of the 'ripple effect', which suggests that participants read first and answer days later, having pondered intermittently about the message. Prima facie evidence suggests that participants treat new messages in batches rather than giving them time to 'ripple'. Examples of participants with high rates of participation (messages posted) are DF (15), LS (12), and PW (10) messages. DF dealt with 7 of 15 postings on the same day. For LS the bulk of the work was done in two batches of 5 and 4. The same applies for PW. While this does not disprove/dismiss the notion that some messages will occupy the learner over several days, there is some evidence that a student who has blocked a certain time for conference participation will read incoming messages and 'be done with them'.

These figures suggest that volume can be a problem and that focus is in danger of being eroded, both due to the distribution of required attention over too many main topics and due to the intermittent access distributed over too long a time span. Faculty need to provide guidance on how to cope with volume. Recommendations include:

(i) do not require a minimum number of messages to be posted; token participation increases noise and may impinge negatively on quality; understanding that debating is a testing ground for assignment writing should suffice to entice participation;

(ii) recommend that participants concentrate on some threads; make it clear that participants are not expected to post comments to all main topics;

(iii) in cases of high volume emphasize the 'constitutive elements' of distance education according to Holmberg: The readings and contact with the tutor encourage students to concentrate on the readings, develop their respective learning agenda, and use the class discussion to seek the necessary clarification from the teacher. (This would be tantamount to a tactic withdrawal from peer interaction.)

The fact that richness requires making choices implies that not everyone should participate everywhere. All the more important are the occasional summaries that draw things together and sift out what, at least according to the teaching faculty, is relevant enough to be retained.

4.4. Quality of Discussion

There are different indicators of a good discussion. They include the following:

(i) *Participation:*
Is there a wide, balanced participation? Is the relation between participation of teachers and students appropriate?

(ii) *Competence in navigation:*
Do participants post their messages properly? Are they correctly 'chunked'?

(iii) *Empathy and trust:*
Does the manner in which the discussion is conducted reflect the trust required for criticism?

(iv) *Focus and motivation:*
Do participants keep the debate focused on the issues at hand? Do they build on each others' contributions?

(v) *Structure:*
Is the debate sufficiently well structured to allow a comprehensive, if not exhaustive treatment of the issue?

(vi) *Reflexivity:*
Do postings show 'investment of thought'? Are they sufficiently substantial to advance the debate?

To inspect the quality of the debate I relate to an analysis participants in OMDE 601 made of a specific number of threads in Module 2: History and Principles of Distance Education. An edited version of the students' contribution is printed elsewhere in this volume. Participants were asked to conduct a 'debating club' type of discussion on the question whether asynchronous conferences can be equal to or outdo traditional forms of (face-to-face) discussion. For this purpose participants were asked to choose a number of main topics as the informational base from which evidence for both the proposers and the opposers of the motion could be provided. (Since WebTycho does not support full threading, I include a fully threaded display of this part of the discussion in the appendix Figure 11.)

(i) Participation:

The appendix ontains Table 7 with conference statistics for the whole of module 2. These statistics are the base for the participation diagrams (Figures 8-19). We have 25 students (without the three dropouts) and all but two participated. For the non-participation of these two there were good professional reasons. It can therefore be concluded that participation is high. Regarding the proportion of teacher's and students' participation 56% of the 'words' in this conference were said by students[30].

However, participation varied greatly. Without the dropouts and faculty we have 25 student participants. If participants contributing less than 500 words are defined as of 'low visibility', half of the students were 'low visibility learners'. Beaudoin[31] points out in this volume that there is some evidence that those who do not visibly participate do nonetheless participate. However, emphasizing that 'all can speak at the same time' as perhaps the major advantage of asynchronous conferencing, it is irritating to observe that not more students seize upon this opportunity to 'articulate themselves'. If the argument that articulating oneself is an important mode of learning is taken seriously, than between 40% and 52% did not make much use of this opportunity. Classifying students who contributed more than 2000 words as 'high visibility learners' leaves four (or 16%) who make full use of this feature of asynchronous communication.

(ii) Competence in navigation:

Argumentative behavior in a face-to-face debate and in a threaded online discussion must be different. In a way, contributions to a traditional debate are more like real threads: When finally making ones points, contributions will be 'twisted' into the preceding argumentation. By making references to various preceding comments one develops what is really to be added. The argument is likely to bring together different elements. On the other hand to properly attach an Aside to a Response the author of a message would need to divide it into different chunks. Each chunk must then be attached to its corresponding response or aside. There are cases where an author makes multiple references where it might have been be more appropriate to 'chunk up' the message into three and attach them to three different target messages (cf. Fig. 11, Aside 3.4.3). The format requires dividing 'complex wholes' into unambiguous chunks. It requires avoiding ambiguity, is conducive to clarity, but militates against complexity.

(iii) Trust and empathy:

The evidence of empathy in the analyzed threads was rather consistent. The tone is friendly and perceived as being friendly[32]. Communicative behavior complied with Holmberg's empathy requirements. However, the display of empathy is not aimed at keeping participants pampered in a 'comfort zone'. Rather, it is instrumental for building trust and forming a sense of academic community, which can sustain conflict without which criticism is not possible. The analyzed sequence included incidents of what might

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[30] Note that even this number is underplaying student participation in the actual debate since they include introductions and messages pertaining to classroom management issues rather than to the debate.

[31] Cf. Beaudoin in this volume.

[32] During all the courses I taught I only twice had a more severe conflict, whereby one of them escalated to a conflict between students. The incident showed however, that since communication is merely text-based (and no body language or facial expression can temper the text message's meaning), it is all the more important that textual messages reflect empathy.

be construed as exaggerated appreciation ('backslapping'), but did not confirm the conjecture that participants would shy away from criticism. Repeatedly, disagreement was stated quite explicitly (cf. Figure 11: Response 3.2 and Aside 3.2.3). The way in which participants balanced the expression of empathy and appreciation, while at the same time clearly stating their disagreement, showed some professional experience with the medium.

The analysis has suggested that reluctance to participate as well as the exalted level of appreciation may both have their reasons in anxiety. The report of the 'role debate' repeatedly stated that participants are intimidated by long substantial contributions of others. In this sense it is not true that 'one speaking does not deprive others from doing so'. Especially, since adult postgraduate learners are a diverse lot, who differ considerably in age, experience, and prior knowledge, it is likely that this is reflected in their contributions. This has an enriching side, since others can learn not only from the teacher, but from other participants as well. But, it also has an intimidating side: 'Will my contribution look silly when compared to some of the others?' The awareness that participants in asynchronous conferences are perceived only by their texts leads to an identification of author and text.

While the investigated threads lend little observable evidence to the claim that participants shy away from open criticism in online debates, many participants have explicitly confirmed this as a norm guiding their communicative behavior. When the idea of a 'role debate' with clearly defined roles, including that of an opposer was introduced, the idea was appreciated. Under the mask of these roles sharper, more partisan, and confrontational lines of arguments were developed.

The main suspicion that online classes would not be able to generate enough trust to facilitate criticism does not seem to be borne out by evidence. However, faculty and participants need to be aware of the low mutual visibility and the resulting strong identification between author and text. This identification blurs a fundamental distinction of academic debate: that of 'argumentum ad rem' and 'argumentum ad personam'. The assignment of roles (proposer of the motion, opposer, moderator, and rapporteur) allows those who would otherwise anxiously cling to an over-polite online personality to experiment with more overt and critical debating modes.

The conclusion is, as already emphasized by Holmberg, that the display of empathy is important. Given the lack of visibility empathy needs to be expressed in order to come into existence ('esse est percipi'!). It is even more important than suggested by Holmberg, because it not only provides comfort and motivation to learn, but establishes trust as a precondition for criticism. Conglomerate groupings in cyberspace are fragile and a trusting atmosphere cannot be taken for granted.

(iv) Focus and motivation:

Theoretical analysis suggests that 'time and noise' endanger focus. The discussion process is drawn out over a long time period with intermittent participation patterns of uneven frequency and participants need to re-configure the issue at hand each time they access the conference. At the same time volume of communication can accumulate, and is distributed over a diverse range of issues. To keep the various threads in mind and possibly weaving them together is difficult. Given the lack of user-friendly functionalities to re-configure lines of arguments there are reasons to remain skeptic.

Although focus is eroded by time and noise it is to some extent kept together by structure. A clear and comprehensive decomposition of a module's theme provides focus[33]. Postings generally link well to the directly preceding message, while easily veering off topic the more distant it is from the respective main topic, where the thread is anchored. Both tendencies are confirmed in the analyzed conference segment (an example of veering off topic is the sequence of asides *3.4.6, 3.4.11, 3.4.12, 3.4.14*; cf. in Figure 11).

The same features of time and noise that endanger focus numb motivation. One faculty management tool that addresses both issues is provided by the frequent 'summary', posted by the faculty responsible for the course. Important is that summaries be 'written on the fly' and posted almost without delay. One method is to collect the more remarkable students' contributions in a separate file, which can than be quickly edited as a summary or wrapping up message, and posted almost without delay by the teacher. Summaries not only help retain focus, but also re-kindle motivation. As mentioned earlier the close identification of participants with their texts leads to anxiety and suspense. To find themselves referred to by name in such summaries may for some help to positively resolve this suspense and thus affirm identity and sustain or re-build motivation.

(v) Structure:

Two main structural features of asynchronous communication have been identified: the potential richness/noise due to the fact that 'all can speak at the same time', and the decomposition of the debate into logically related segments visualized by threading. Threading imposes structure and possibly harnesses what might otherwise be considered noise into a source of enrichment.

There is a distinction between 'horizontal integration' and 'vertical integration'. Horizontal integration reflects the extent to which contributors build on each other's arguments. As noted, there is evidence that with increasing thread length contributions veer off topic[34]. Analysis of the practice of answering messages and the weak tool to retrieve an argument's history predict such effects.

Vertical integration is the comprehensiveness with which the issue under discussion has been 'partitioned'[35]. On the level of responses at least three points of major importance have been identified: the issue of 'pacing', the issue of 'group learning', and the distinction between open learning and distance education (cf. Figure 11: *R 3.2., R 3.4* and *R 3.*5 respectively).

(vi) Reflexivity

The stability of text messages and the asynchronous character of message exchanges suggests that these should reflect substantial investment of thought. Bernath and Rubin (1999) even identified a 'ripple effect', meaning that messages might be contemplated

[33] We have indeed too diverging tendencies. The lack of control by the teacher over the noise, generated by the fact that everyone can speak all the time, and thus the lack of short-range control, which allows the teacher to 'shut up' some students or entice others. And, the enormous influence to impose structure on the discussion by defining the main topics, and rigidity participants have to adapt to; recall Weber's formula of the 'Gehäuse der Hörigkeit'.

[34] This is largely due to what was described as the Markov property of the debate: A message is linked only to the preceding (‘neighbor’) statement/comment, but otherwise the process is without memory. Note that this reference to stochastic processes is largely metaphoric.

[35] A partitionis an exhaustive, mutually exclusive decomposition of a topic into sub-topics.

over a protracted period of time before being answered. Though our analysis has cast some doubt on this, at least where general practice is concerned, the messages indicate some investment of thought. The average length of messages considerably exceeds 200 words (the statistics in Figure 10, amount to 279 words per message. However, this number is too high since it includes the introductory texts of faculty; the average length of participants' messages would be about 220 words)[36].

Analysis suggests that while horizontal integration would be weak, anchorage in the last message should be substantial. Evidence of the analyzed conference segment confirms this to some extent. Generally comments take up a point in the message to which they are attached, and often an explicit reference to a previous statement is made. However, there is an identifiable tendency to quickly move away from the message under scrutiny to the commentator's own professional experience. 'You (the visiting expert) have argued in the readings for this module that this and that is the case. My experience however demonstrates something different.' This pattern is identified in the participants' analysis and leads them to suggest the hypothesis (possibly rendered plausible by self-inspection) that in principle it is possible to get away with a low level of engagement with the course readings.

An interesting thread is the one emerging from *R 3.2*. The message takes a critical position towards the statement implied in MT 3 (BH) that absence of pacing is characteristic for distance education. The response *R 3.2* (LL) draws three asides: *A 3.2.1* (BH) where the visiting expert reiterates his position; *A 3.2.2* (TH) where the teaching faculty takes a modified position (arguing that advances in technology allow group work and group work implies pacing); and *A 3.2.3* (PW), who joins forces with the critical position taken in R 3.2 (LL). Interesting is that this aside again draws three responses where LL (*A 3.2.4*) retreats from her initial position to accommodate the view of the visiting expert. A further contribution *A 3.2.6* (DF) joins forces with the visiting expert, arguing that individual studies in the corporate training sectors are preferred and conform to the picture of distance education expressed by the visiting expert. The sequence, albeit short, shows: Participants building on each other's contributions, expressing criticism, and participants modifying their positions to some extent under the influence of the arguments contributed by others.

5. Conclusions

This last section draws things together. It summarizes the strengths of conferencing, identifies trade-offs, and makes recommendations.

Two main areas of strength are identified. One is 'all can speak at the same time'. This does not imply that everyone is 'shouting out of the window' without anyone listening. They speak to the teacher and receive answers. 'Speaking' here means writing a text. Writing texts is not only a way of alphabetically encoding ones thoughts. Writing often brings thoughts into being. It gives them a public form. This is why some believe that articulating oneself in written form is a most powerful way of knowledge building. As

[36] It might look unconvincing to take message length as an indicator for 'investment of thought'. However, it indicates that more is done than exchanging short notes on personal or organizational issues. Viewed in the context of a topic related conference discussion average message length is an indicator of effort or engagement (i.e. 'investment of thought'), albeit not an indicator of quality of outcome.

was pointed out in traditional classroom time to 'articulate oneself' is a precious, because scarce good. Asynchronous discussion turns articulating into a non-consumable good. All can do so whenever they want without depriving others.

The second area of strength is structure. In principle, asynchronous conference platforms allow the mapping of logical relations that are obscured by the linear arrangement induced by turn-taking. This works in two dimensions: (i) The partitioning of an issue under discussion into main topics, which 'fans out' the relevant aspects of the theme of a conference or module. This provides anchorage and focus for the discussion. (ii) Threading imposes structure for the ensuing discussion of the main topic. Ideally, argumentative sequences ('lines of arguments') would be identified by a 'fully threaded' display of message headers and selectively retrievable through a 'View Thread' function.

5.1. Trade-offs

The flop side of these good news is that side effects and trade-offs are inherent in asynchronous conferencing. The most obvious is the 'white noise' generated by the fact that 'all can speak at the same time'. Articulating ones own thoughts may be a maieutic[37] experience for oneself, but not necessarily of great value for others to witness. The more participants that seize on this opportunity to 'articulate themselves', the higher the communication volume with all the inherent redundancies of asynchronous conferencing.

The problem of volume is not only due to the fact that 'all can speak at the same time', but is also a result of the intermittent participation pattern. When 'Unread Notes' brings forty new message headers to the screen, a problem of 'coping with volume' arises. Given that the conference was accessed three days ago reconfiguring to what the unread messages could relate to is, to say the least, difficult. Argumentative contexts are shrouded in memory, which means that focus is lost and motivation may be ebbing. The need to show presence in the classroom forces participants to work through a batch of messages and post to them.

Anxiety is great in an environment where 'having a life aside one's text' is difficult. One is visible only through the text. Viewing sophisticated peer messages may make one regress to a lurker. When taking a heart and posting a message 'sweet speak' will be used in hope of reciprocity. With considerable suspense the classroom is opened next time to see whether one has been perceived (exists). What can be expected from a communication format where the distinction between person and argument, which is fundamental for academic discourse, is lost?

5.2. Recommendations

In developing asynchronous conferencing it is necessary to build on the strengths and minimize the weaknesses. It is important to harness the richness, and not allow the rich diversity of messages to degenerate to noise. Part of the answer lies in imposing structure in order to make richness comprehensive. This requires technical as well as pedagogical

[37] Greek maieutikos, from maieuesthai, 'to act as midwife'. It refers to the aspect of the Socratic method that induces a respondent to formulate latent concepts through a dialectic or logical sequence of questions. Writing induces similar processes in the writer.

design features. Technicians must become sensitive to pedagogical requirements and convert them into software functionalities. This applies to threading and 'View Thread' functions, which would allow user-friendly contextualization of arguments.

Better threading functionalities are foremost a question of software design, but structure is also imposed through pedagogical design. Clear partitioning of a module theme into main topics is important. A conference space should reflect a conceptual structure and be reserved for faculty. To clutter up the 'content' with all sorts of postings reduces comprehensiveness.

Participants must learn to use the structure in an optimal manner. This includes the proper placement and chunking of messages. If the first messages are placed on the Response level students (as a class) need to be aware and repeat what the teacher has done with the theme of the topic on main topic level: to decompose the main topic on the level of responses in order to fan out its various aspects. Well structured conferences, both horizontal and vertical, can accommodate richness and domesticate (minimize) noise.

Anxiety is a central problem. The conglomerate groups of virtual classes are a fragile community. Empathy is all-important - not to pamper participants' desire to stay in their comfort zone, on the contrary, because academic discourse necessitates criticism. Not to keep everyone comfortable, but to engender trust in order to sustain community through conflict, is the issue here.

The suspense with which participants wait for responses can be turned into a motivational force if a participant not only finds a response to his/her message, but also finds that the expressed arguments are taken seriously. Occasionally posted summaries, including the participants' names and referrals to what they said, will boost motivation and help retain focus.

Reflecting the process itself also helps. One innovation introduced in the course was to make participants undertake a 'role discussion'. The objective was to discuss the respective advantages of asynchronous discussions compared to face-to-face discussions, based on the evidence available in an identified section of a preceding module. The idea aimed at reflection and criticism, while the analysis of the available evidence lead to a more reflected awareness. The use of roles, including the one of an opposer, provided a temporary avatar distinct to the usual online persona.

5.3. Wrapping up

Three points are worth reiterating:

(i) the potential richness of asynchronous conferencing, because 'all can speak at the same time'. If we believe that actively 'articulating oneself' in writing is an important mode of learning, there is ample opportunity; 'articulating oneself', as we called this mode of learning, is a 'non-consumable good' in asynchronous conferences: One using it does not deprive others from doing so.

(ii) asynchronous communication is characterized by 'texts that talk back'. We saw that Plato's criticism of writing (i.e. that texts seem to talk reason but when questioned only repeat themselves) is partly addressed through this type of communication in that we have the stability of the text format, on which analysis and reflectivity are

predicated. Asynchronous communication, combined with the interactivity of dialogue, allows the answering of questions and correction of interpretations.

(iii) the metonym of 'texts that talk back' already suggests that text and author merge. 'Esse est percipi': One is visible only through texts and the perception of ones text defines the online existence. This close identification between author and text means that the posting of texts is coupled with anxiety, which may explain both the reluctance to actively participate ('invisible learners') and the often irritatingly high level of expressed politeness. It is important to positively resolve the suspense with which the author awaits the reception of his/her text; this affirms existence, strengthens confidence and motivation, and finally, creates the trust so essential for criticism.

Let me end with paraphrasing two great distance educators. Peters, who surveyed and analyzed distance learning extensively, coined the formula that distance education is something *'sui generis'*. Similarly, I see in asynchronous conferencing a communication format that is *'sui generis'* (Peters, 2002, p. 38).

Perraton (2000) ends in his recent book by answering the question: "Can we make open and distance learning as good as conventional education?" with "I think it would be a good idea." (p. 200). - A good formula for asynchronous conferencing as well.

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Appendix

Table 7: Conference Stats for: Module 3

Name	Main Topics	Re-sponses	Asides	Total Msgs	Total Chars	Total Lines	Total Words	Avg Chars/Ms	Avg Lines/Ms	Avg Words/Ms
CY	0	0	3	3	2817	55	482	939	18	160
BP	1	3	2	6	11403	90	1740	1900	15	290
LS	0	3	9	12	20286	113	3314	1690	9	276
CF	0	1	2	3	1425	45	224	475	15	74
CS	0	3	2	5	8726	37	1441	1745	7	288
MN	0	0	1	1	2330	52	369	2330	52	369
JS	0	2	0	2	8370	122	1333	4185	61	666
RH	0	3	6	9	16005	304	2563	1778	33	284
RK	0	1	7	8	8497	155	1487	1062	19	185
SF	1	4	4	9	7309	76	1181	812	8	131
GB	0	1	0	1	589	21	84	589	21	84
TH(FAC)	9	4	5	18	66252	1082	9294	3680	60	516
SC	0	1	1	2	2297	7	393	1148	3	196
KS	0	0	4	4	2213	11	370	553	2	92
DF	0	5	11	16	13178	133	2303	823	8	143
YS	0	2	1	3	10370	163	1329	3456	54	443
KC	0	2	1	3	7349	20	1150	2449	6	383
MC	1	0	0	1	2724	46	390	2724	46	390
AC	0	1	0	1	1483	29	245	1483	29	245
OP(FAC)	8	2	43	53	89941	1035	13091	1697	19	247
FE	0	1	6	7	10585	56	1758	1512	8	251
PH	0	1	1	2	926	7	153	463	3	76
PW	1	3	8	12	40006	254	6205	3333	21	517
BS	0	0	2	2	1008	10	180	504	5	90
JD	0	0	0	0	0	0	0	0	0	0
AD	0	0	0	0	0	0	0	0	0	0
TC	0	0	0	0	0	0	0	0	0	0
RJ	0	0	0	0	0	0	0	0	0	0
MN	0	0	0	0	0	0	0	0	0	0
RP	0	0	0	0	0	0	0	0	0	0
LL	0	0	0	0	0	0	0	0	0	0
Totals	**21**	**43**	**119**	**183**	**336089**	**3923**	**51079**	**1836**	**21**	**279**

Figure 8: Word Count

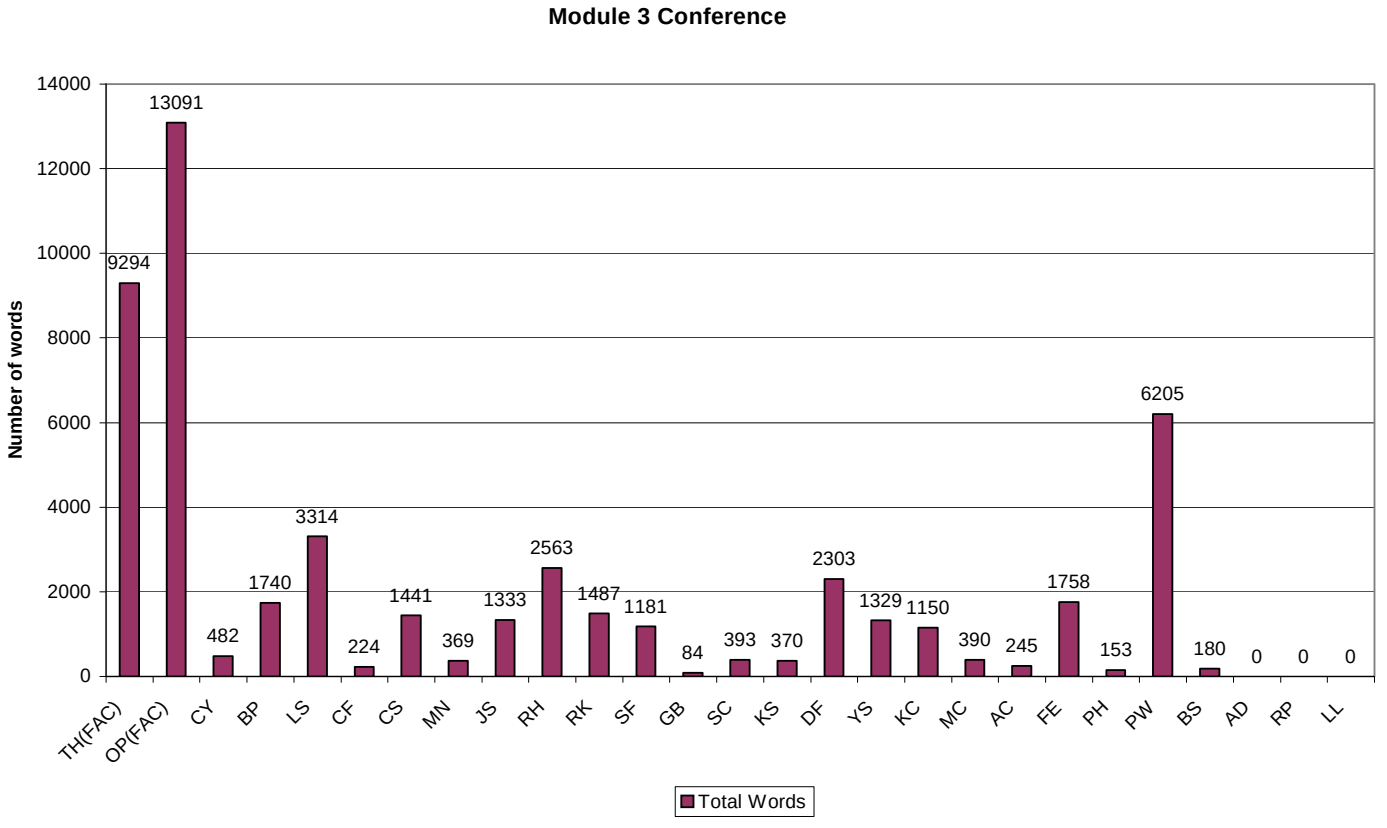
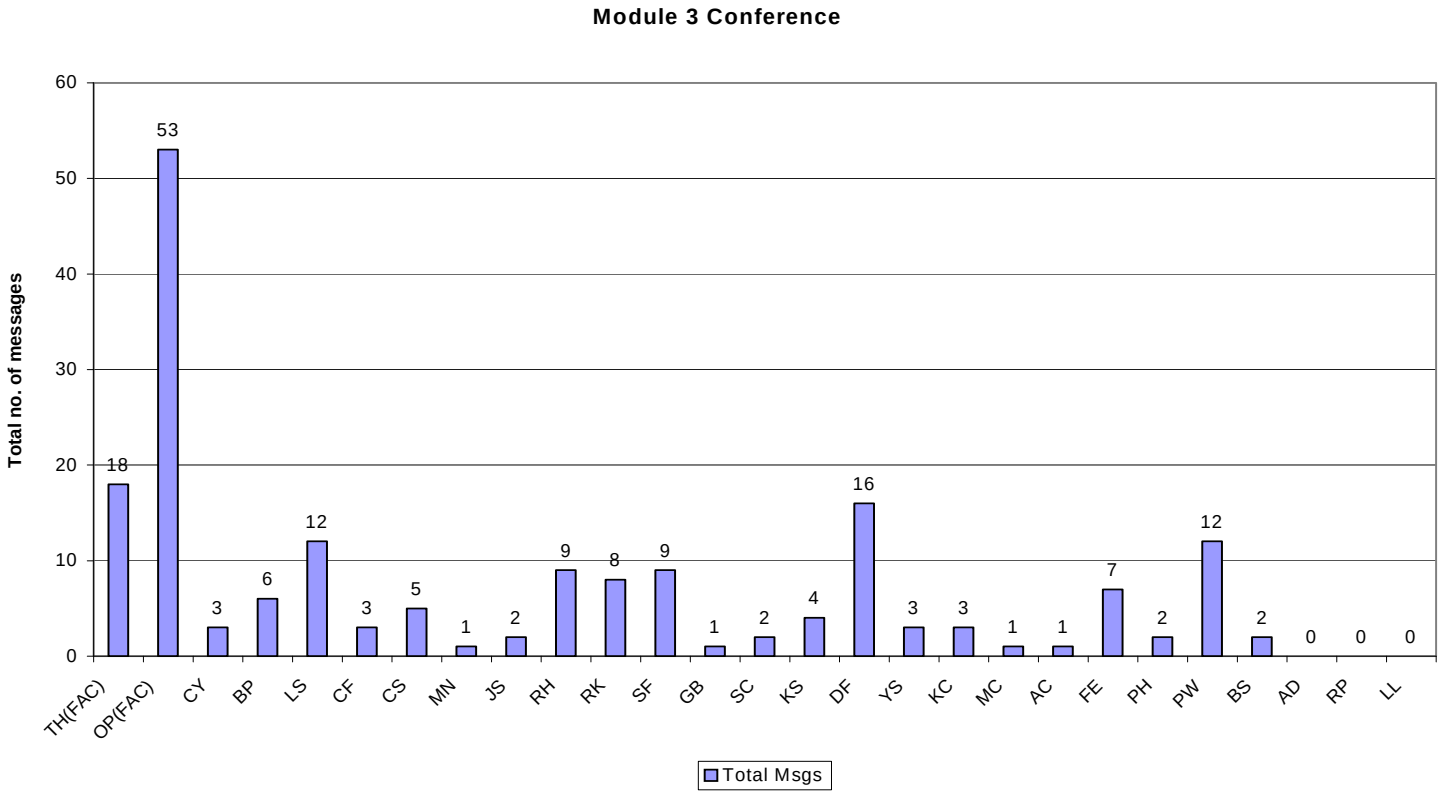


Figure 9: Message Count



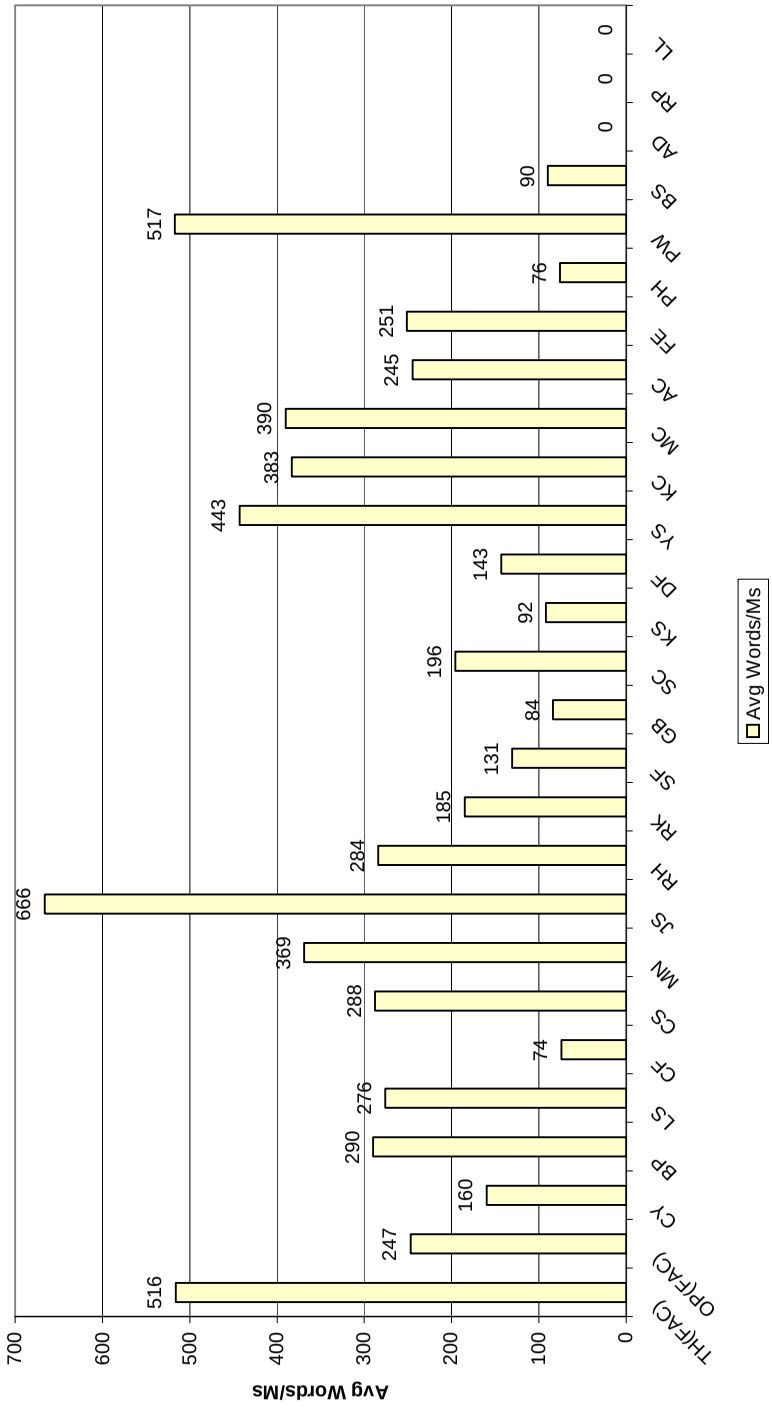
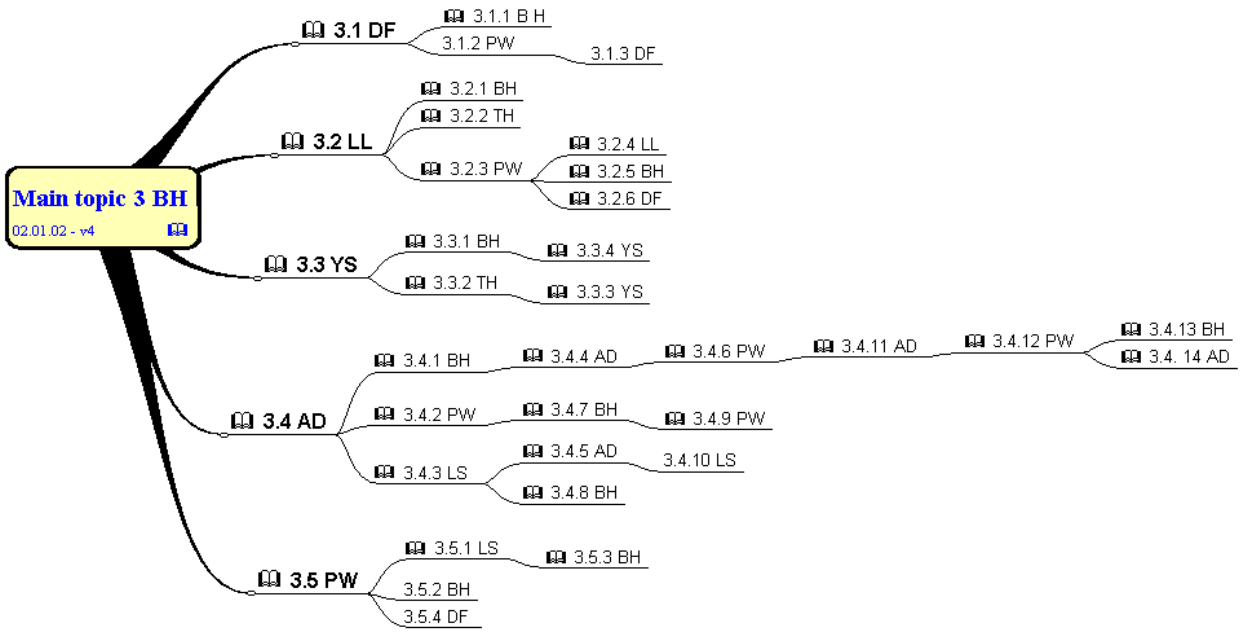


Figure 10: Average Message Length

Figure 11: Conference Module 2 MT3 (Mind map threaded display)



Conference Module 2 MT3 (Mind Map Notes)

Main topic 3 BH

Lengthy introduction including the identification of the constitutive elements of distance education; Keegan's definition. Some specific readings are identified and participants invited to ask for clarification when needed.

3.1 DF

DF relates reading to his professional context. Message concentrated on context description.

3.1.1 B H

Message intended to re-set focus: we are not dealing with general issues of personnel management rather than with distance education.

3.1.2 PW

- 3.1.3 DF

3.2 LL

LL criticizes BH (and Keegan's) characterization of DE as one to one and without pacing. Does not reflect her experience.

3.2.1 BH

BH insists DE as one to one without pacing is possible.

3.2.2 TH

TH modifies: new technologies facilitate group conferencing. Groups imply pacing.

3.2.3 PW

PW joins forces with LL to criticize BH.

- 3.2.4 LL
  LL admits that asynchronousconferencing unpaced and one to one is in principle possible.
- 3.2.5 BH
  Repeats his point: DE unpaced and one to one is possible.
- 3.2.6 DF
  DF joins with BH. Corporate world prefers individualized study before group study. Note wrong tracer number in header.

3.3 YS

YS starts to comment on BH on developing countries.

3.3.1 BH

Refers to Perratons book.

- 3.3.4 YS
  Expresses appreciation.

3.3.2 TH

Contributes references.

- 3.3.3 YS
  Expresses appreciation.

3.4 AD

Relates back to definition, but does not look at individual studies and pacing, but on aspects of group activities including chat.

3.4.1 BH

Short repeat of position. DE is essentially about individual study.

- 3.4.4 AD
  Discussion on group work continued. There is some evidence that peer cooperation is appreciated ("tips by PW"). But little relation to main topic 3.
  - 3.4.6 PW
    Aside discussion PW helping AD. Could be done as email.
    - 3.4.11 AD
      Continuing personal counseling on what courses to take. Veering off from topic.
      - 3.4.12 PW
        Veering off.
        - 3.4.13 BH
          In terms of content irrelevant comment. Expresses that BH is present.
        - 3.4. 14 AD
          Final thanks for personal counseling aside of the topic.

3.4.2 PW
PW states that reading BH makes her appreciate differences. Then she comes to special issues including group work and grading collaborative work. She addresses 3.4.1 and 3.4.

3.4.7 BH
Reflects BH's stance that learning is an individual activity. But no principle sharpening up of debate between group learning and individual study (cf. Laurillard, 1993)

- 3.4.9 PW
  Short rejoinder.

3.4.3 LS
LS addresses 3.4, 3.4.1. and 3.4.2. Why not chunking and attaching properly? Evidence for backslapping. The debate between individual learning and learning in a group. Could be sharper. It is clear that BH regards learning as an essentially individual activity.

3.4.5 AD
Again on group work.

- 3.4.10 LS

3.4.8 BH
Short note referring student to read 3.4.7.

3.5 PW
On terminology. PW for clarity.
3.5.1 LS
Agrees. Professional fields need some standardization.

3.5.3 BH
Agrees, but points out that practice does not comply with this desire for standardized terminology.

MICHAEL F. BEAUDOIN

Learning or Lurking? Tracking the 'Invisible' Online Student

While much has been written regarding the learning behaviors of students participating in online courses, little research has been conducted to ascertain whether or not students are still engaged and actually learning even when not actively involved in online discourse with other students and faculty. This study of inactive students enrolled in an online graduate course attempts to identify how much time is spent in course related activity, what the reasons are for their "invisibility", and if their preferred learning styles influence their online behavior. The data shows that these students do, in fact, spend a significant amount of time in learning related tasks, including logging on, even when not visibly participating, and they feel they are still learning and benefiting from this low profile approach to their online studies. However, preliminary analyses of course grades indicate that the mean grade is slightly better for high visibility learners than for no visibility learners. Findings suggest that further research in the area of the so-called invisible learner is a critical area of investigation to better understand the dynamics of asynchronous learning and teaching.

1. Introduction

It is assumed that a high level of interaction is desirable and increases the effectiveness of both classroom and distance education courses (Fulford & Zhang, 1993). As early as 1970, Flanders demonstrated that increased interaction improves student achievement in classroom venues. However, to date, there is still a paucity of evaluative data that clearly indicates online interaction enhances the quality of learning in distance education courses. As interactive modalities have increasingly facilitated the connectivity between students and teacher, student and other students and student and content, attention to the phenomenon of online interaction has gained heightened interest among those seeking to enhance the teaching-learning process at a distance.

Despite an increasing body of research and writing on the subject of online interaction between students and faculty (Gonzales, 1995; Kearsley, 1995; Neuhauser, 2002), we still know relatively little about how much learning actually occurs, how it does or why it doesn't, and what factors most affect learning outcomes in online formats. In considering the learning process in this particular environment, we might assume that it correlates closely to what is visible (i.e., students' written words that appear on the monitor), and conclude that if there is no visible online activity, then little or no learning is likely to occur. This parallels somewhat the situation in traditional classroom venues where instructors note that some students are passive and non-participatory, sometimes to the point of not even appearing for classes. Yet, despite doubts about how much these students are learning and how well they will do on assignments and exams, many of these same students eventually manage to do quite well academically, regardless of their lack of active face to face participation.

What we do not see in asynchronous environments, literally and figuratively, is what else is going on that contributes to participants' learning. And it is easy to assume that

unless learners in online formats are actively participating by posting frequent and relevant contributions, they may be benefiting relatively little from this more passive experience. Further, we might assume that unless students are posting comments that are directly related to the designated topic in, for example, a so-called threaded discussion forum, their learning is likely to be further compromised. Thus, for those students who, even if they do regularly log-on, but who do not engage at all in a particular discussion or who seem to be offering irrelevant or, at best, tangential remarks, we might conclude that they just don't contribute to or benefit much from the experience. Some distance education theorists argue that the dialog between student and teacher is the essential defining element of distance education; Holmberg stated that it should consist of mediated, two-way conversation (2001). It is curious that, although an historical tenet of distance education is the notion of learners autonomously constructing their own knowledge, instructors facilitating the learning process for distant students often become alarmed when dialog with them wanes.

2. The "Invisible" Online Learner

Helmut Fritsch, director of the Center for Research in Distance Education at FernUniversität (Germany), who has served as an external evaluator of a virtual seminar offered jointly by the University of Maryland University College and Oldenburg University in 1997, offers an insightful appraisal of the level of student participation as measured by the frequency of online entries at specific points in time as a seminar progresses (Bernath & Rubin, 1999). He developed the notion of "witness learners" (i.e., students who were not actively participating via written contributions at a particular point, but who nevertheless were still engaged in the process as observers (witnesses) of the written exchanges taking place online between other students). He argues that learning, even in this more passive and less visible mode, is still occurring.

Assuming, for the moment, that some learning might indeed occur even when students in online courses are not posting comments, what could be contributing to this tendency to "lurk" on the periphery of course activity? Are they "auto-didactic" learners who prefer to remain as anonymous and autonomous as possible? Do they forsake opportunities to participate because thinking about what to write is more formal and less spontaneous than oral, face-to-face dialogue typically is? Do they frequently have a thought in mind that they are mentally composing, but others often seem to express the same idea before they can do so? Or are they simply having technical difficulties mastering the intricacies of the particular online platform being used ?

Recent studies of attrition in online courses suggest that there are four key factors influencing the degree of learners' motivation to learn – appeal of the online environment; relevance to their interests or goals; confidence level in learning within an online environment; satisfaction level regarding the online instructional process (Keller, 1987). When all or most of these factors are present, attrition tends to be lower; when these factors are missing or weak, attrition is likely to increase. Do these same factors influence the interactive behavior of students who are relatively inactive, yet remain in online courses?

The online master's degree program offered by the University of Maryland University College and Carl von Ossietzky University of Oldenburg enrolled two sections of the initial *Foundation of Distance Education* course in Fall 2000. As the semester progressed,

the phenomenon of student "invisibility", which the MDE faculty had been aware of for some time, became more noticeable. It was observed that twenty-four (24) out of a total of 55 students in the two sections had not actively participated (i.e., they posted no online messages during one or both of the modules wherein two prominent guest faculty, who had authored the required textbooks, were each conducting a one-week long online conference with each cohort).

Although program administrators and faculty were inclined to believe that Fritsch's "witness learner" phenomenon was operant in this situation (i.e., that invisible students were still relatively active in some course related activities), it was decided to design and administer a questionnaire to these apparently "inactive" students, with the intention of identifying the primary factors influencing their non-participation in this particular component of the course. It was also determined that this survey should be conducted by someone not directly involved in the administration of the program or instruction of the course. While a visiting scholar at Oldenburg University, this author saw an opportunity to investigate this student interaction, and hopefully contribute to a greater understanding of the process. Accordingly, he designed the instrument, then analyzed and reported on the data. The survey was transmitted electronically to the target population in Fall 2000. Of the twenty-four students who were sent the questionnaire, all twenty-four responded within the prescribed deadline. The results and their interpretation follow.

It should be noted here that these students were not singled out because they had been inactive in online communication since the beginning of the course, but rather because they were inactive during this particular phase of the course when relatively high participation was expected by course providers in order for them to benefit from interaction with guest faculty. Since the course format requires some online participation to successfully complete academic requirements (although the frequency of online postings is not factored into the final course grade), and because the written articulation of ideas is viewed as an inherently critical element of the learning process, and an activity which is typically considered necessary in order that the institution certify that a satisfactory level of course mastery has been achieved, the conspicuous absence of the written word, whether presented on paper or electronically, becomes a key criterion for ascertaining academic success.

3. Time Spent in On and Off Line Activities

The first set of nine questions asked for data regarding total hours spent during the two-week conference period on various course related activities. The one activity that commanded the greatest amount of time was reading assignments - an average of 12 hours over the two week conference period, with a low of 1 hour and a high of 40 hours. An average of 7.6 hours was spent logging-on to the course site, and reading others' comments. Close behind in time allocated was 7.2 hours for writing assignments for which posting was required. An average of 4.3 hours was dedicated to miscellaneous activities (e.g., web searches): 3.1 hours on communicating with the study group; and the least amount of time (2.2 hours) was spent composing comments for the conference discussion. It may seem somewhat curious that these respondents indicated that any time at all was spent on this latter activity, since the criterion for identifying them as the target population for the survey was the lack of online input from them. This discrepancy is explained by the fact that they are responding on the basis of their online

activity over the entire term to date, not only the two week period under study. A final question regarding time allocation concerned the application of what was learned in their respective work settings. The average (5 hours) is skewed by the fact that one respondent indicated 40 hours was spent in this activity, yet seven spent no time at all on it. Factoring out the 40 hour respondent, a more representative average of 1.7 hours per week results.

What might we conclude, at least preliminarily, from this data on how much time is spent on course related activity even though little of it is visible to the faculty or to other students? First, we can state that our intuitive assumption is correct that course related activity, though mostly invisible, is taking place. Indeed, if over a two week period in the lives of busy adult students, each spends an average total of 44.6 hours (the highest reporting 92 hours and the lowest 6 hours) engaged in these various course driven tasks, it must be assumed that some learning, and the application of that learning, is taking place in an ongoing fashion. While it may be tempting to question if students really do, in fact, spend as much time as is claimed on these activities, we must nonetheless accept their self-perceptions of the amount of time spent, as we are not in a position to perceive what goes on beyond the parameters of the online environment. It is indeed quite remarkable, given that this respondent group was identified on the basis of low participation in one course activity, and in view of the other competing demands on their time, that such a significant amount of time (i.e., 22+ hours per week) is devoted to academic pursuits in this particular course. We do, however, suspect that these numbers may be somewhat inflated, due to some overlap in respondents' activities.

How does this level of coursework for invisible students compare with the time spent by their more interactive peers? Although we did not conduct a detailed analysis, the statistics showing user activity for this course revealed, not surprisingly, that our respondent group spent almost as much time on course log-on activities as did the other 31 students, with time spent on posting comments in the discussion areas being the only conspicuously reduced activity. It is also interesting to note that many of the activities that involved the most time (e.g., reading and writing) are those we associate with traditional classroom-based courses. Those who are involved in the instruction and assessment of online learning should be reminded that although the medium is technology-based, the actual learning remains an inherently auto-didactic and invisible process, just as it is in courses at fixed times and places. It is also important that faculty, especially those teaching adult working students enrolled in professional education courses, recognize that another "invisible" activity –the application of newly acquired knowledge and skills to the student's work environment - may also be taking place, and this too, in turn, can be fed back into the course, so that learning continues to occur through knowledge acquisition, application and reflection.

4. Reasons for "Invisibility"

The second set of questions posed to these low visibility students asked them to identify factors (checking all that apply from a list of ten provided) that deterred them from posting comments. Three-fourths of them responded that they simply preferred to read what others wrote, or that they had thoughts but others made similar comments before they could post anything themselves. Forty percent indicated they had something in mind, but weren't quite sure how to phrase it. Thirty percent said they didn't feel they

understood the topic well enough to comment, while the same percentage said they weren't sure what to contribute because the discussion seemed to drift away from the original topic. Twenty-five percent acknowledged that they do not feel comfortable writing their ideas online. Four students indicated that time constraints limited the amount of time they could spend writing comments. Only one said the topics just weren't interesting enough to comment on.

It is evident from this set of responses that a significant factor affecting online activity is a certain level of discomfort with the electronic environment, causing some hesitancy to contribute, and then the moment is lost. Students want to "get it right" before they commit themselves to online dialogue because the written format seems so "public." It may be that online discourse feels more formal and premeditated, while classroom discussion lends itself to a more spontaneous, informal exchange that is not recorded and therefore is less likely to be retained. Gonzales, in an insightful study (1995) of online course interaction, observed that the instructor adopted a much more formal tone when communicating electronically with students, compared to her communication with students enrolled in a classroom-based version of the same course. That three-fourths of the respondents in our study indicated they prefer to read rather than write may suggest a learning style preference, but it may also relate to a lack of familiarity and facility with the medium. It should be reassuring to the course authors that only one respondent indicated that low interest in the topic was a contributing factor to non-participation. And, although it might be suspected that time constraints would be used frequently as an "excuse" for low participation, the data revealed that lack of time was a relatively negligible factor.

Based on all responses regarding factors contributing to low visibility, it appears that factors identified by Keller (1987) that have the most impact on attrition in online courses (appeal, relevance, confidence and satisfaction), also apply, at least to some noticeable degree, to the phenomenon of reduced interaction by our subjects. And although our invisible students chose to remain in the course, it is interesting to speculate if perhaps the least interactive segment within an online cohort are also the most likely candidates to eventually withdraw from a course.

5. Online Learning Styles

The final questions were intended to obtain data related to students' learning styles in an online environment, and asked them to respond with a Yes or No to ten items. All but one of the 24 respondents indicated that they were often processing ideas gained from the course even when not visibly participating. Nineteen (19) said they felt they were learning just as much or more from reading others' comments than from writing their own. About half identified themselves as "autonomous" learners less inclined to be active in group learning, regardless of the medium. One third indicated they got more from other course activities, such as reading, than they did from the online conference discussions. Finally, one third stated that they intended to log-on more frequently during the remainder of the course. It may be that some responses to this last item are a result of these respondents feeling some pressure by being identified as low visibility students (even though we assured them that we viewed their course behavior in this respect entirely neutrally).

It is, of course, important to recognize that students' inclination to interact can depend on a variety of factors, including age, personality, learning styles, professional training, etc. Indeed, as Kearsley (1995) and others have noted, it may be that the more autonomous, self-directed learner is also more reflective, and so requires less stimulation and reinforcement from interacting with more "other-directed" peers. And it may be that the perception that there are avenues for interaction is just as important as actually utilizing them. Fulford and Zhang (1993) found that a key factor in student satisfaction in an Interactive Television course was not the extent to which students actively participated, but rather their perception that interaction was occurring. This suggests that if courses are designed to provide interactive features, and there is evidence that interaction is taking place or even that the potential for it exists, then knowing it is available may be as important as actually participating.

The online communication style of faculty, as well as their stated expectations for online discourse certainly can influence how their students function in an online environment. Faculty who espouse and practice a social constructivist approach to their courses; who convey to students that a collaborative learning model is valued (often to the point of calculating a percentage of the course grade on the basis of the quality and quantity of visible online participation); and who are themselves highly engaged in course dialog, will presumably encourage a high level of participation among most students. The program under review here utilizes what might be called a 'progressive interaction' approach, whereby students are exposed to readings, followed by online dialogue facilitated by faculty, and culminating in written assignments required of individuals and groups. This model, characterized by input-processing-output, creates an expectation that student interaction will increase as participants become more familiar with the content and more comfortable with the format. But faculty who do not explicitly address what they expect in terms of online activity, or make infrequent appearances in online discussion areas, are likely to have a reductive effect on most of their students' visible online participation. Faculty who highly value active online participation by their students, yet are reluctant to force this activity, can find themselves in a bit of a conundrum. It is not unusual for some less visible students to perform exceptionally well on various course assignments, creating a situation where a minimally active student achieves a high grade.

6. Summary of Results

All twenty-four (24) respondents offered comments in the open-ended spaces provided; these were, for the most part, revealing and candid remarks that informed our inquiry regarding the so-called "invisible" learner, and reinforced their preceding responses. It is interesting to note that only two respondents claimed to be more active than our data indicated, but most of the others readily acknowledged, some a bit defensively, that they were low-profile participants, at least for the conference phase of the course we were examining for purposes of this research.

Summing up the primary reasons given for non-participation via these commentaries, the factor cited most often is that online learning is a new experience, and students need time to become acclimated to using it. Three stated that limited time was a problem, and three admitted that their limited interaction online is similar to how they would behave in a classroom setting. Several expressed intentionality to write comments more frequently,

but didn't because by the time they were ready to do so, several others had already posted similar ideas. Some said they preferred to read rather than write and felt just as much learning took place in this manner. It was also clear that many were reluctant to offer online comments just for the sake of being "present." Four students admitted to being self-conscious about writing in this forum, one due to being a non-native speaker, another to being shy, and the other two were just not sure how to express themselves. Interestingly, two stated that they frequently compose messages, but don't post them; it may well be that this behavior is a more common phenomenon than we might have initially conjectured.

More than half noted that they log-on frequently, some several times a day. Many emphasized that they spend many hours on the course, and that they have gained much from the course, however little it may appear that they participated, at least in terms of the criterion we used for the survey. Although no questions pertained to the use of e-mail, a few did allude to their frequent use of it for course related communication, and we suspect that this is yet another activity for which there is little visible evidence in the course environment. Only two confessed that asynchronous online courses did not seem to be their preferred way to learn, and one respondent wondered about the value of the entire program because of its theoretical rather than technical focus.

Preliminary analysis of final course grades on required essay assignments offer intriguing evidence that performance cannot be easily correlated to participation, or that frequent participation necessarily leads to better performance on graded assignments. For purposes of this analysis, high visibility equals logging more than 1,000 words in at least one of the online conferences; low visibility equals no log-ons in one of the online conferences; and no visibility equals no log-ons in either online conference. The statistics show that the mean grades are better for the high visibility students than the no visibility students, yet low visibility students seem to do a bit better than the visible (average) students (cf. Hülsmann, 2000). This suggests that fully engaged, highly participatory learners tend to perform strongly in graded assignments, but that minimal online participation does not compromise grades and, in fact, may reveal that these low visibility students are dedicating more time to reflection and processing of course material that translates to stronger assignments than those submitted by students participating at an average level.

7. Conclusions

From this initial study, can we arrive at any preliminary conclusions about what transpires "below the surface" in an online context that either helps or hinders learning? We can probably conclude that essentially the same "witness learning" phenomenon occurs in both formats - classroom and online. Certainly, most students are actively engaged in learning activities, often in an auto-didactic fashion, even though there may be relatively little obvious manifestation of that activity. It could be suggested that the image of an iceberg serves as a useful analogy here, in that most of its mass is beneath the surface, just as is the case with our invisible learners.

It is to be emphasized here that we are not endorsing this low visibility behavior in online course participation as a desirable trait; our purpose is to better understand those factors contributing to low visibility participation at certain points as a course progresses, and to determine if learning related activities might be occurring "behind the scenes". If these students had been noticeably disengaged in their online activity from the very

beginning of the course, we would be looking at an entirely different phenomenon, and would not likely be as sanguine about the overall learning taking place, as there would be little to "show" for whatever efforts they were making.

Although much research has been conducted to analyze the overt learning behaviors of online students, we recommend that additional study be undertaken to better understand the unseen dimensions of online learning, as it is in that realm where most learning actually occurs. The words appearing on a monitor simply record what a student articulates via the electronic medium provided. Because others choose to be less participatory does not necessarily mean they are less engaged in meaningful learning. Indeed, it could be argued that the "overactive" online students (i.e., those who are constantly inputting words) do so at the expense of a more reflective, but less visible learning process in which their silent peers are actually more fully engaged. There may exist, of course, other variables that could influence these students' interactive behavior online. This study did not, for example, take into account such factors as gender or native language, nor did it record whether or not this was the respondents' first online course experience, or whether it was the first course in the master's program in which they had enrolled.

Subsequent to this preliminary case study with its relatively small sample size, this author has since had the opportunity to serve as faculty in two sections of the same course (*Foundations of Distance Education*). While no empirical data has yet been formally gathered as a follow-up to this study, impressions based on anecdotal data and observation by other faculty teaching this same course in the program generally parallel the findings and conclusions of this study. From a typical cohort of approximately 40 students, about 15 of these could be categorized as low visibility students who participated minimally in the full class online discussions, but contribute more frequently in their small group dialog. Their grades on required written assignments were slightly lower than those of their more active peers. And, despite their self-admitted low profile style of course engagement, all seemed to have positive feelings regarding their overall learning experience.

Obviously, we need additional studies that address and isolate critical dimensions of interaction, especially research that examines questions suggested by Kearsley (1995), as they particularly apply to the "invisible" learner:

- Is frequency of interaction a useful measure of student success or course effectiveness?
- Is interaction of greater value for some learners than others?
- Does interaction affect achievement of learning outcomes and grades?
- Does increased interaction enhance student satisfaction?
- Are forms of visible interaction more important than other "invisible" course related activities?
- Does the pattern of interaction change over a course; if so, why; and should it change?
- Should faculty "force" interaction, and factor it into the final grade?

It is premature to declare that a certain level of interaction in online discourse is an essential ingredient to student success or course effectiveness. All online learners are invisible to the teacher; that some are less visible than others is not necessarily an indicator that the benefits of the learning experience are being compromised. We are reminded here of Dewey's observation regarding a critical element of the teaching

process: to create conditions for "productive inquiry" that takes place independent from the teacher. In the online learning environment, teachers must be attentive to process as well as content to ensure that this inquiry is indeed occurring, however invisible it may be to them.

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BÖRJE HOLMBERG

Computer Support of Distance Education, Particularly Online Teaching and Learning

The motive for this paper is a wish to identify - against the background of earlier developments and practical experiences - the present status of computer use in distance education.

The use of computers has influenced distance education in several ways even though its basic character remains unchanged: education without students and tutors necessarily meeting face to face and with on the one hand subject-matter presentation (one-way traffic), on the other hand student-tutor interaction (two-way traffic) as its constituent elements. (On the identification of these two elements see Holmberg, 2001, pp. 9, 39 and 89.)

1. Concepts

Early use of computers in education was mainly of the *offline* character and served student-tutor interaction, i.e. the second constituent element. The students in systems of this kind did not use computers themselves while their assignments, submitted in writing, were graded and commented on by a computer. This was usually done by an optical reader 'correcting' students' solutions of multiple-choice tasks and the computer selecting from a bank of comments and explanations programmed and stored for the purpose those relevant in each situation (cf. Bååth & Månsson, 1977). More sophisticated systems allowing the free rendering of replies in the form of numbers also occurred (Küffner, 1979). Tutors' comments were often typed out in such a way that they looked like personal letters to the individual students. The advantages of offline-communication were partly financial (tutor time saving), partly educational: A computer commenting on the same misunderstanding in the work of a great number of students does not get irritated and is not tempted to be less patient and helpful or providing less extensive comments to the twenty-fifth student than to the first making the mistake in question, whereas a human tutor runs this risk (cf. Holmberg, 1995, pp. 120-121).

Offline work is not wholly extinct, but is now, in the developed world at least where most students have easy access to computers, usually replaced by *online* interaction, i.e. students and tutors interacting directly with each other on the net.

Online use of the computer in education usually takes the forms of 1) electronic mail, usually referred to as e-mail, 2) organised exchanges of questions, answers and arguments on the net, which can represent and often are academic seminars and conferences, and 3) spontaneous contacts on the net between students, sometimes also including tutors, so-called chats. These three applications will be discussed below.

Whereas these applications concern interaction only, online use of the computer can serve both subject-matter presentation and interaction. Subject-matter presentation, i.e. one-way traffic, is usually brought about in distance education by printed course units which either contain all the learning matter or, as in university study, comment on set texts, laboratory exercises etc. These texts can, and sometimes are, transmitted electronically, which is practical when printed sources are difficult to come by or require high postage costs, but normally it makes no sense to read texts with or without pictures from the

screen. The quality of print is usually higher than text on the computer screen and most people find it easier to read what has been printed on paper.

However, the use of the WWW and data bases, which should be seen as a supplementary form of subject-matter presentation, can be of considerable value, also for academic socialisation by facilitating and encouraging search for information. It is then of prime importance that the handling and appraisement of the information identified should be treated as the most important concern. The information *per se* does not represent knowledge and insight. It is its elaboration and inclusion in the proper context that is decisive.

Hypertext approaches allowing non-sequential presentation of learning matter and making students find their own way through the material (possible with or without the support of information technology) may further be or become really useful although the free navigation inherent in these approaches causes great difficulties (cf. Bélisle, 1999; Canter, Rivers & Storrs, 1985; Schnotz, 1994, and Jonassen & Mandl, 1996).

The situation is, as already indicated, very different as to interaction between students and tutors as well as among students themselves. Here online teaching and learning offer something still fairly new and in any case very valuable.

Online teaching can either be synchronous, students and tutors working on the net simultaneously, or a-synchronous, students being given the possibility to ask and answer questions, make contributions to discussions etc. at times that suit them individually within a specified period of time. The former is suitable for group work and classes following a time-table, the latter for personal study at times that suit the individual students. Sometimes the periods for a-synchronous interaction are so short that they are adaptable or adapted to classes of students. This is what characterises the Master of Distance Education programme that is the chief object of study in this volume.

2. Experiences and Considerations

While a number of systematic studies of computer use in education has been carried out and published (e.g. Bernath, 2002) the following simply represents insights gained, experiences made and some thinking based on the theory and practice of distance education. The present writer, with a background in distance education mainly relying on the printed and written word, has experience in offline and online use of the computer in education. The following comments will be limited to online teaching and learning as applied in the interaction element of distance education.

The basic claim on communication in distance education is that the individual student should be able to interact with his/her individual tutor without the two meeting face to face. The evident advantages of online communication in distance education are on the one hand the possible avoidance of delay that is inevitable when assignment solutions and tutor comments are sent by post, on the other hand the possibility to include several parties, usually a group of students, in the communication, and, further, the spontaneity possible and the easy communication with tutors as well as with fellow-students.

Electronic mail offers a possibility for undelayed interaction. When e-mail was first introduced into distance education it was widely believed that it would eliminate the delay caused by postal communication, a usually much deplored disadvantage of correspondence education. The studies carried out by Rekkedal and others of the impact

of short turn-round times for students' assignments and tutors' comments illustrate this situation (Rekkedal, 1983; Holmberg, 1989). Regrettably undelayed communication of this kind has far from always been brought about by e-mail. Distance-teaching organisations have not always been in a position to keep tutors constantly available or to engage a sufficient number of tutors, which has led to e-mail messages being kept unanswered for several days. Evidently there is no advantage in using e-mail if students are kept waiting as long as the time required for postal communication. Waiting for e-mail comments on assignments submitted or for e-mail replies to questions asked is hardly better than waiting for postal messages.

While the situation described detracts from or eliminates the advantages inherent in e-mail its potentials are considerable. By now it should not be a surprise that distance education using e-mail requires its own type of administration with tutorial staff and tutorial work properly organised. E-mail functions excellently in a number of distance-teaching organisations in which this requirement is catered for.

In most distance education the individual interaction between students and tutors is the really essential type of communication required. This underlines the importance of e-mail. However, the use of the computer on line also – and perhaps above all – makes peer-group interaction possible, which eliminates another weakness of traditional distance education, in which mediated interaction among students has rarely been possible. Computer communication makes organised seminars and conferences possible also when students cannot meet face to face. These seminars can – as already mentioned - be synchronous or a-synchronous.

The traditional type of distance students are people who study beside a job, family and various social commitments. This makes it difficult – and in many cases – impossible for them to adopt themselves to a prescribed time plan. Synchronous interaction with a tutor and with fellow students may seem desirable, but is often out of reach.

A-synchronous online communication, on the other hand, is almost always possible to distance students in the developed world. A seminar on a specific topic can be – and often is – organised in such a way that after an introduction by the seminar leader students can make their contributions on the net at any time that suits them during a period of several days or even weeks.

This and so-called chats are excellent forms of interaction between students and tutors and among students themselves and could with great advantage be practised much more commonly than they are. They can be adapted both to consistently a-synchronous study in which students work wholly individually at their own pace and to group learning with students following an agreed or prescribed time-table. In the former case the invitations to enrol clearly state the requirements for taking part in organised seminars, which are usually the completion of specified parts of the distance-teaching course. In the latter case students are simply informed at an early stage when the online seminars are to occur and what preparatory study they have to do.

There are plenty of experiences testifying to the effectiveness of these uses of online seminars. Apart from what I have learnt from the online Master of Distance Education programme I wish to mention other online work in distance education which appears very valuable. What has happened again and again at the Darmstadt Distance-Teaching University of Applied Sciences is that a student finds a particular problem in, say,

mathematics so difficult that he/she does not know how to start work. The student then phones his/her tutor who gives some explanations which helps him/her to approach the problem. A first attempt at a solution is then sent via e-mail or telefax to the tutor who either answers using the same medium as the student or the telephone. At that stage the student is usually ready to suggest a solution, usually by e-mail or fax, which will be corrected and commented on by the tutor.

Combinations of online computer interaction, the use of the fax machine (practical when sketches and drawings are included) and the telephone have proved outstandingly effective and student-friendly, the latter of great importance for students' motivation to continue study. These approaches and media are typical of work planned and organised by distance-teaching organisations. Online interaction, as indicated used for spontaneous and informal contact between students, sometimes also with tutors and other representatives of the distance-teaching organisation engaged, can effectively support both motivation and learning. The term for this, *chat*, seems derogatory to its dignity. Informal mediated contacts, with questions asked and answered, with comments and thoughts closely or vaguely connected with the study, have, in fact, proved very valuable in a number of cases. I have seen advanced students helping less advanced students, challenging questions asked leading to constructive discussions with several students making interesting and rewarding contributions and, beside what is really mere chat, moral support given by and to fellow students and generally motivating exchanges of views. There can be no doubt that these informal contacts can be and often are elements of great value in distance education.

While this represents practical methodology the use of information technology for what is regrettably called virtual learning (cf. Holmberg, 2001, p. 28) has caused some possibly fruitful theorising on 'virtual learning spaces', a concept analysed by Peters (2002, pp. 71 - 84).

Finally: The use of computer technology can be very helpful in distance education, but it should be remembered that even today much or most distance education manages without this tool. It makes its greatest contribution to the mediated interaction described above as one of two constituent elements of distance education. Peer-group interaction between students is of great value and is more effectively promoted in distance education by online communication than in any other way. This applies both to organised seminars and to informal and spontaneous so-called chats.

The computer is thus a very useful tool – but a tool only. It does not represent the essence of distance education, which seems occasionally to be assumed, as its essential function is education in the forms of presentation of subject matter and interaction which does not necessarily require the use of a computer. In combination with other media, print and writing, audio and video recordings, telephone and fax interaction, the application of computer technology, particularly online communication, is a remarkably versatile instrument for student-friendly and effective teaching and learning, however.

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JANE E. BRINDLEY, OLAF ZAWACKI & JUDY ROBERTS

Support Services for Online Faculty: The Provider and the User Perspectives

JANE E. BRINDLEY, OLAF ZAWACKI & JUDY ROBERTS

Support Services for Online Faculty: The Provider and the User Perspectives

1. Introduction

In any educational context, the quality of teaching and learning depends primarily on the instructional staff who are responsible for facilitating the learning process. The online environment is no exception as authors such as Salmon note: “Successful and productive online *teaching* is a key feature of positive, scalable and affordable e-learning projects and processes. Regardless of the sophistication of the technology, online learners do *not* wish to do without their human supporters.” (2002, p. 1). It is clear that faculty are as crucial to the online learning experience as they are in the classroom. However, it is equally clear that as new media evolve for teaching and learning, faculty roles are changing and becoming increasingly diverse and complex (NEA, 2000). In order for post-secondary institutions to successfully integrate new technologies, high priority must be given to faculty development and support.

Two recent studies have revealed the importance of faculty support in implementing online programs. The Western Cooperative for Educational Telecommunications (WCET, 2001), contracted by the Council of Regional Accrediting Commissions (C-RAC) in the United States (US) to identify those elements that are essential for providing high quality online distance education, highlighted the significance of faculty training. The previous year, the Institute for Higher Education Policy (IHEP) identified faculty support as a critical standard of quality (2000). Although the importance of faculty support does not appear to be in question, many institutions are still struggling to provide appropriate and effective training, development, and reward opportunities for faculty. According to Bates (1999) "faculty members need much more support and encouragement than has been provided to date for their use of technology for teaching and learning. [...] Teaching with technology requires a high skill level, and this necessitates training not just in technical matters but also in educational practice." (p. 3).

What are the key elements of online faculty support? What organizational structures are needed to provide faculty support for online programs? And how are these services experienced and perceived by the users, i.e. the faculty members? This article seeks to provide some qualitative answers from both sides, the institutional (provider) and the faculty (user) perspective. The three authors are involved in a Master of Distance Education (MDE) program that is entirely delivered via the Internet by two universities: University of Maryland University College (UMUC) and Carl von Ossietzky University of Oldenburg. Based on their experiences, the elements of faculty support services for teaching in an online environment are described from the provider perspective by Olaf Zawacki who provides the interface for Oldenburg MDE faculty to support services; included in his section is an interview with a counterpart at UMUC, Deborah Schroeder. Jane E. Brindley and Judy Roberts, faculty members in the MDE program from

Oldenburg and UMUC respectively, provide personal accounts of their experiences with the support provided by their respective institutions.

The MDE is an unusual program within the UMUC and Oldenburg University context because its faculty as distance educators bring to the program a set of skills that already qualifies them in many aspects of online learning and teaching. Despite this, there are still intensive needs for support by some faculty. This paper discusses that process.

2. Context

2.1. The Program

The Masters in Distance Education program is the result of an international collaboration between University of Maryland University College (UMUC) in the US and Carl von Ossietzky University of Oldenburg in Germany. The MDE has attracted more than 350 students within 2.5 years. MDE students enroll with UMUC and the degree is awarded by UMUC. Oldenburg offers two certificate programs, each comprised of a subset of MDE courses, and currently contributes 6 of the approximately 19 courses. Each of the partner institutions is responsible for managing and teaching these courses. The program benefits from the large scale service infrastructure provided by UMUC, a distance teaching university with over 80,000 students and 60,000 web-enrollments in 2001. Faculty support services are provided by both institutions.

2.2. The Teaching Model

In general, two different approaches to online learning and teaching have been identified in the literature: the “broadcast” model and the collaborative approach. In the "broadcast" (Allen, 2001) or "cmc added-on" (Thorpe, 2001) model, computer-mediated communication (cmc) is used as a new channel for tutoring beside other forms of student support but the educational paradigm remains the same. Similar to earlier generations of distance education, the learning and teaching process is structured by the design of study materials that have been created in advance. In this model, online learning has more an evolutionary than a revolutionary impact on the role of the tutor (Thorpe, 2002, p. 111). In the “collaborative” or “interactive” model, instructors have broader responsibilities than in the broadcast model. They "carry authority to create the detailed course teaching as it progresses over the duration of the course, rather in the way a conventional university lecturer might decide how they were to teach (...). Such instructors must of course be content experts, but they will also need even more skills of learning facilitation than the conventional tutor of a second generation distance education course." (ibid., p. 112).

The teaching model that was chosen for the MDE program (and all other postgraduate courses offered by UMUC) is interactive and collaborative, enriched by both instructor and student experience. Most of the learning activities are focused on problem-solving and other types of meaningful knowledge application. Students are expected to move beyond content mastery to integrate and use their knowledge in real life situations. They work individually or in study groups on projects that they can apply in their work context. Nicholas H. Allen (2001), Provost and Chief Academic Officer of UMUC, talks of an "interactive model" of teaching and learning that is characterized by an emphasis on two-way communication (one-to-one, one-to-many, many-to-many), little use of

expensive multimedia technology, extensive use of online asynchronous conferencing, small class sizes (20-30), and a focus on faculty involvement in the learning process. The type of model chosen for online teaching has direct implications for the nature of support required by faculty members.

2.3. The Faculty

One of the MDE program's strengths is that the faculty are international, and have been recruited for their many years of experience in distance education and their particular expertise in a specific area of the program. While there is a small core of full-time faculty at each of the participating institutions, most of the faculty in the MDE program are geographically spread, and like sessionals at a campus-based institution, these part-time or adjunct academics are contracted to teach a course or courses on a semester to semester basis. Most of the part-time faculty are engaged in other work (e.g. teaching, research, management, consulting), including some who are faculty members of other institutions. These part-time faculty work from their usual place of business and/or their home office. As of August 2002, a total number of four full-time and eleven part-time faculty are teaching in the program.

A further unique feature of the MDE program is the visiting expert model. In order to enhance interaction and enrich the content in the virtual classroom, distinguished experts and authors of textbooks are invited to participate in the virtual classrooms of the MDE. Visiting experts are distance education scholars, researchers, and practitioners who facilitate a course module or short-term discussion on their topic of expertise. To date, these experts have included Terry Anderson, Tony Bates, Richard Hezel, Börje Holmberg, Margaret Haughey, Wayne Macintosh, Michael Moore, Hilary Perraton, Otto Peters, and Greville Rumble (cf. Bernath & Rubin in this volume).

2.4. The Online Learning and Teaching Environment

WebTycho, the proprietary UMUC web-based learning and teaching environment, is used by the MDE and is shared with all other UMUC courses and programs. This online learning management system was developed in-house by UMUC, and has features such as common content presentation, asynchronous and synchronous communication, and assessment tools[1]. The infrastructure for WebTycho is comprised of six servers in the US, one in Europe and one in Asia; the servers currently support over 60,000 web-enrollments per year. Technical support is available on a 24/7 basis.

2.5. The Challenges

The dynamic and collaborative teaching and learning model, international faculty, visiting experts, and open access of the MDE make it a very attractive program choice for students. However, these same features present major challenges for providing effective faculty development and support. The remainder of the paper will describe, first from the provider perspective, and then from the user perspective, what is currently being done, what is successful, and some of the remaining challenges for faculty support.

[1] A WebTycho Tour is available at: http://tychousa.umuc.edu/.

3. The Provider Perspective

Three areas of support within online faculty services will be described: course development and teaching support, management of online material and resources, and technical support. It is recognized that although these areas can be identified separately, they are closely related and in some cases, overlap.

As noted above, provision of faculty support is complex and challenging in the MDE program. Courses are developed and taught by a decentralized team of faculty spread over eight countries and four continents. Faculty members do not have the opportunity to meet academic support staff in the corridor; they are not able to attend face-to-face training sessions; and faculty meetings are difficult to organize and expensive. Hence, with few exceptions, all three faculty support services have to be carried out primarily via the Internet.

All online faculty support services at UMUC can be accessed through a faculty support portal that resides at http://www.umuc.edu/faculty/. Both Oldenburg and UMUC faculty have access to this portal.

3.1. Course Development and Teaching Support

3.1.1. Staff Support

In UMUC's Graduate School, course development as well as teaching is the responsibility of individual faculty members who are hired for their content specialization expertise. However, only a few of them have the skills to develop or convert courses to an online format (the MDE is an exception to this as noted previously). Therefore, UMUC introduced a five week required WebTycho training course (see below) and a team of web specialists and technologists called Distance Education Coordinators (DE Coordinators), to support and train faculty members (Allen, 2001). One of these DE Coordinators is assigned to the MDE. At Oldenburg, one person's (Olaf Zawacki) particular responsibility is to support Oldenburg's faculty members and visiting experts.

In order to understand the role of a DE Coordinator, Deborah Schroeder was interviewed about her responsibilities in faculty support. She is an experienced distance education professional at UMUC's Graduate School and a DE Coordinator for UMUC MDE faculty. The following interview was done by e-mail in January 2002:

Zawacki: Deb, could you describe briefly your role as DE Coordinator at UMUC?

Schroeder: My role as DE Coordinator pretty much encompasses anything and everything related to distance education. My primary role is to provide graduate school faculty with training and training material, technical support for WebTycho, technical support for Web related content such as web page development and the use of software/hardware, and ensure faculty have material loaded into their classrooms before the first day of the semester. I also, develop graphics and web pages for faculty use. I maintain a UMUC Faculty Help Desk[2] that was designed and developed by the DE Coordinators. Every other month, new articles are written and faculty members are emailed of the updates. My secondary role, which takes just as

[2] http://info.umuc.edu/de/ezine/welcome.htm (accessed: March 22, 2002)

much time as my primary role, is to work on special projects, such as building forms for surveys, create workshops for the President's Office, provide training for staff development and technology days, etc. Usually two or three DE Coordinators (sometimes more depending on the project) will work on a project together. Most of our training are not for graduate school faculty alone, we often have undergraduate faculty attending our training as well.

Zawacki: How many DE Coordinators are employed for UMUC's graduate programs?

Schroeder: Currently there are five DE Coordinators; a floater Coordinator who's primary responsibility is IT liaison, but helps the DE Coordinators as needed; and an Assistant Dean who helps with the coordination of the various projects.

Zawacki: And for how many faculty members are you responsible?

Schroeder: This semester I support about 95 online sections and about 30 face-to-face sections. Each semester is different. Summers are my lightest semesters. Each DE Coordinator is responsible for his or her own tracks. I am responsible for International Management, OMDE, and part of General Management Programs. I also provide back-up support for Masters in Teaching, and Master of Education.

Zawacki How long have you been a DE Coordinator and what are your experiences?

Schroeder: What are my experiences.... Hmmm, well I have been with UMUC for 14 years, if that tells you anything. Of those 14 years, I have been a DE Coordinator for 2 1/2 years. There are always new and exciting challenges for the DE group. As I mentioned earlier, the role of a DE coordinator encompasses just about everything pertaining to distance education for the Graduate School and various other departments throughout UMUC. We test new software and hardware to determine what is best for our faculty. We are constantly developing new training so that faculty can continually enhance their technological skills. We support our entire faculty, encouraging them to grow and try new things in their classroom. Of course, there are faculty members who take up more of our time than others. The DE group tries very hard to move our faculty in a direction of self-support. If we train the faculty and train them well, the DE group is able to remain scalable, able to handle the large volume of faculty, and able to continue working on special projects. There are, however, some faculty that are slow in coming around with technology, and that's okay. It will always be a bit of a challenge to get some faculty to embrace the technology, but we will continue to work with them the best we can by providing support and guidance. So, my experiences as a DE Coordinator and working for UMUC have always given me a sense of accomplishment. It's exciting to see faculty members load their own course materials for the first time, or create and publish web pages. And it’s challenging, as well as rewarding, to develop training that all faculty find useful and beneficial, helping to keep UMUC an international leader of Distance Education.

Zawacki: As you just mentioned, the development of training for faculty members is an important part of your work in order to enable them to teach online independently. Are these trainings offered through the Office of Distance Education and Lifelong Learning (ODELL) or the Center for Teaching and Learning (CTL)? What is your relationship to these two units?

Schroeder: CTL's primary responsibility is to train faculty to teach online using WebTycho. All faculty who are going to teach online are required to take this training. WebTycho training consists of a five week intensive online class. Before CTL changed the format of their training to include a CD-ROM, there were two parts to the training. A pedagogical part and a web design part. The CTL department held one face-to-face training to introduce the faculty to WebTycho. The face-to-face workshop started off the class. The remainder of the five week training was taught online. About the third week of training, the DE Coordinators were responsible for holding the second face-to-face training and teach the faculty how to build and post Web pages on Polaris, and to incorporate those page in their classroom. It was a required component for graduate faculty, but not for undergraduate faculty. They could attend if they wanted. Once the CD-ROM was developed, the DE Coordinators were no longer responsible for holding the web design face-to-face training. All the material that we taught in face-to-face class was placed on the CD.

There is, however, still a relationship between CTL and DE Coordinators because our graduate faculty attend the WebTycho training. We provide input for updating the CTL training and also work on any other projects that involve graduate school faculty.

Zawacki: UMUC's homepage provides a faculty area at http://www.umuc.edu/faculty/ which is a sort of portal for faculty services (e.g. access to the Interactive Faculty Information System to submit grades, access to ODELL and CTL, library services, WebTycho support etc.). Who maintains this website?

Schroeder: It is my understanding that this page is maintained by the Faculty Recruitment Department. If a change needs to be made, it is made by that department. The changes are then sent to the Office of Communications where one of their web specialists will make the changes and upload the new pages to the UMUC server.

The DE Coordinators do, however, maintain the UMUC Faculty Help Desk. All the DE Coordinators had input into the design and layout of the material and we all provide the material that is at the site. There are several DE Coordinators who are responsible for writing articles, frequently asked questions, helps/how-too, and training. For now, I am responsible for uploading all changes and updates in material to the site. I am also the person that answers any questions that are submitted online via the questions form.

Zawacki: Deb, thank you very much for this conversation.

Schroeder: You are quite welcome. Thank you for interviewing me.

In summary, the interview with Deborah Schroeder revealed the following functions and roles of a DE Coordinator at UMUC:

- develop workshops and provide graduate faculty with training,
- support web page development and use of software/hardware,
- provide technical support for WebTycho,
- test new soft- and hardware,
- provide media services (graphics, web pages, audio files etc. for faculty use),
- maintain a faculty help desk (DE Oracle@UMUC[3]),
- contribute to course evaluation.

All MDE faculty members benefit from the services provided by DE Coordinators, including those employed by Oldenburg. Deborah Schroeder is the DE Coordinator of the MDE at UMUC. In Spring 2002, when the interview was done, 12 MDE courses with 13 sections (classes with up to 29 students) were run. Therefore she was responsible for supporting 82 additional online sections plus 30 face-to-face sections. Additionally, she is part of a team that has a variety of other responsibilities such as developing training and maintaining the Help Desk. Clearly, not all faculty members can get intensive support. The overall goals in faculty support from the provider perspective must be to help faculty move in the direction of self-support in order to remain scalable.

Although the MDE is embedded in a large scale distance education institution, it is a postgraduate program with some characteristics of a model that was described by Garrison and Anderson (1999) as "little distance education". In contrast to second generation distance education where the course material is developed by an expert and learner support is delegated to a tutor, it was viewed essential for the MDE to attract subject matter experts to develop the course syllabi and to teach the courses. The majority of these busy professionals were not able to attend any WebTycho training sessions when they started in Spring 2000, and hence, needed a great deal of help to get their courses online.

In contrast to the more narrowly defined role of a DE Coordinator at UMUC, the faculty support person at Oldenburg managed the courses for some instructors. His activities in this regard included posting announcements, creating conferences, syllabus and schedule, similar to the role of a teaching assistant. During this development phase, he was responsible for six faculty members, and hence, the support provided was very personal and tailored to individual needs. In addition to this faculty members received directions and guidance during course development from the Program Directors. The interaction between the faculty support person and faculty members focused more on training and professional development rather than strictly technical issues. All MDE faculty members are experienced scholars and educationalists. However, some of them found it useful to have someone with whom they could discuss the design and pedagogical issues related to teaching in the new online learning environment. Most of the conversation between the academic support person and the instructors was and continues to be through e-mail with the exception of the faculty meetings.

[3] http://info.umuc.edu/de/ezine/welcome.htm (accessed May 6, 2002)

The Oldenburg support person assumes a training, development, and consultation role during the course development phase. He helps to get new faculty members "on board" with the goal of having them able to teach online with minimal support after two or three terms. During their first online class, however, they should be enabled to focus on content matters and on their pedagogical approach and strategies to online learning rather than on technical details. In the Oldenburg approach to faculty support, it is important for the academic support person to be accepted by the faculty members more as partner or colleague in the role of an educational consultant with the same sort of background rather than as someone whose role is restricted to technical support.

3.1.2. Institutional Academic Support

The online faculty support portal provides access to all kinds of services and information that are related to online teaching. For example, faculty members can enter the Interactive Faculty Information System (IFIS) where they can access class lists and submit grades in an electronic grade roll. This grade roll is available approximately two weeks before the end of the term and faculty members are expected to submit grades within 72 hours of the end of classes. The opportunity to submit grades online rather than by mail is an administrative support service that is appreciated by all faculty, not only by those who teach at a distance (Allen, 2001, p. 69).

The Office of Distance Education and Lifelong Learning (ODELL) is UMUC's unit that facilitates the transition to online learning and teaching. According to the Graduate School's Faculty Handbook (UMUC, 2001) this should be achieved through the following initiatives:

- "conducting research and advocating database improvements with a special focus on distance and lifelong learning,
- developing and implementing faculty development and training worldwide that applies current technology and pedagogy,
- creating and demonstrating innovative practices in technologically assisted teaching and learning,
- supporting and collaborating with UMUC's academic, technology, and information services and workforce development communities in their search for excellence in distance teaching and learning,
- developing and recommending policies and practices that further excellence in distance education and lifelong learning, and
- increasing the visibility of the benchmark qualities of UMUC in distance education." (p. 22).

ODELL provides media services, educational counseling, and resources about online pedagogy. An important unit within ODELL is the Center for Teaching and Learning (CTL) which is responsible for faculty training and development (see below).

3.1.3. Faculty Training

In order to prepare faculty members to use WebTycho and to teach in the online environment, there is a requirement for new UMUC instructors to participate in a five week WebTycho training course that is provided through the Center for Teaching and

Learning (CTL) at UMUC. Participants are expected to spend at least 8-12 hours a week on the course, more if they do not have basic Windows and Web skills.

The training course is comprised of two parts: The first provides participants with very basic computer skills, as well as an introduction to WebTycho and more generally, to online learning and teaching. The second part of the course addresses more advanced skills such as learning how to build and post a web page. The first part of the course was initially offered as a one day workshop session in a classroom setting. However, faculty members, particularly those in remote locations were often not able to attend. Hence, the workshop has been replaced with a multimedia CD-ROM (fig. 1).

The majority of the training course takes place online in the WebTycho "classroom". This introduces faculty members to online teaching in the environment that they will be using for their own course. The design of the training course is such that faculty members participate first as students, completing research, doing exercises and assignments and then as faculty, developing and posting an online course module.

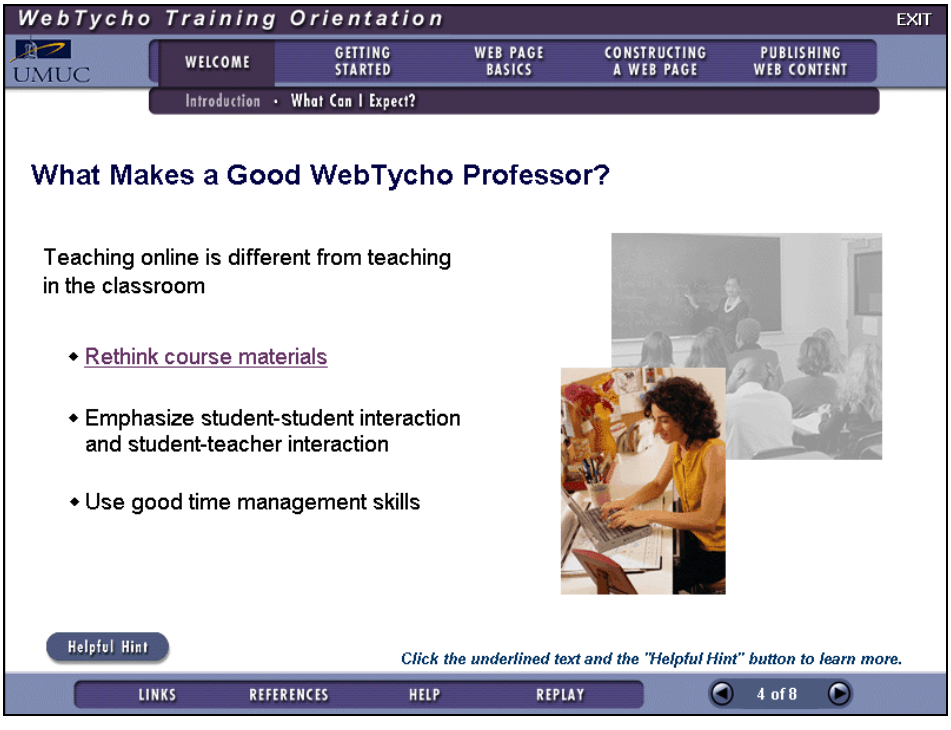

Fig. 1: Screenshot of WebTycho training multimedia CD-ROM

The CD-ROM was not available when Oldenburg and UMUC faculty started in Spring 2000. Therefore, the Oldenburg support person needed to supply this training.

3.1.4. Faculty Development

New faculty members are introduced by the Program Directors to the overall concept of the MDE program in terms of content and approach to teaching online. During the first

term of teaching online, some faculty members preferred to be mentored by the Program Directors to ensure quality and consistency of approach.

Although expensive and not easy to organize with a distributed team of faculty, it has been possible to arrange at least one international faculty meeting per year since 2000. The first MDE faculty meeting involved Oldenburg faculty members and took place in Frankfurt (Germany) in Summer 2000. The most recent faculty meeting involved all Oldenburg and UMUC faculty members that teach the core courses and took place in January 2002 in Oldenburg. During these meetings, faculty members experience that they are part of a greater team, they have the opportunity to present and discuss their courses and get feedback by their colleagues. Furthermore, they participate in decision-making processes with regard to the academic matters and policies of the MDE.

3.1.5. Management of Online Materials and Resources

Online library services are regarded as key to success of the virtual university (Allen, 2001). It is UMUC's Office of Information and Library Services (ILS) that facilitates access to online library services and materials[4]. Students and faculty have access to the library holdings of all 11 institutions of the University System of Maryland (inter-library loans). The books are shipped directly to the homes of students and faculty and on request chapters and articles are scanned and placed on a server, where, after notification by email and provision of a PIN, it can be downloaded and/or printed at one's own computer. Librarians provide 24/7 asynchronous service to students and faculty and they are moving soon to 24/7 synchronous service. Furthermore, students and faculty get free access to major online distance education journals, such as *Open Learning*[5]. Library users can search in more than 90 databases, nearly half of which provide access to full text materials and a growing number of digital books. For faculty, the Office for E-Reserves, a division of the library, obtains copyright permissions, digitizes articles and makes them available in WebTycho so that students can download them.

In addition to online articles and books, courses have custom materials that have to be managed. Faculty members compose learning facilitation and management documents for their courses. These include introductions to discussion topics, detailed instructions for assignments and group work, content summaries, and study questions. The creation of this material is very labor intensive for the faculty. They received help to create these documents, most of which are formatted in HTML. The material must be reusable and made available for subsequent classes. Therefore, all completed courses are saved on an archive server and WebTycho provides a Course Import Function to enable reuse and updating of these faculty authored materials. The instructors can now retrieve their documents from the archive server and edit them independently with an easy to use HTML editor like Macromedia Dreamweaver.

3.1.6. Technical Support

The online teaching and learning environment has to be reliable and user friendly. Technology should be as transparent as possible to enable faculty members to focus on their subject matter, and technical support must be available on a 24/7 basis. As

[4] http://www.umuc.edu/library/library.html (accessed: May 3, 2002)

[5] http://www.umuc.edu/library/database/ejournals.html (accessed: May 3, 2002)

mentioned above, technical support is provided through the UMUC DE Co-ordinators via e-mail, asynchronous conferencing, and/or toll-free phone. They maintain an online help desk, the DE Oracle@UMUC. The functions and tools of WebTycho are explained in a faculty guide which is available on a help and support site[6].

How are the described services perceived by faculty members? Do they work? Are they sufficient? Two "users" of faculty support will describe their experiences. Jane Brindley in Windsor, Canada discusses faculty support from her perspective as an Oldenburg faculty member, and Judy Roberts does the same from her vantage point as a UMUC faculty member located in Toronto, Canada.

4. The User Perspective

Although geographically spread and without the same support systems as campus-based faculty, the part-time academics in the MDE carry a level of responsibility and accountability identical to campus-based faculty. As noted above, the MDE program is based on an interactive and collaborative model of teaching and learning. Unlike tutoring for an institution which has pre-packaged courses as is the case in some distance education models, most of the MDE faculty develop the courses that they teach, and engage in continuous revision based on the response of students and new developments in the field. The courses each have a detailed syllabus, reading lists, and assignments but rely heavily on the asynchronous (and occasional synchronous) discussions and collaborative exercises moderated by the instructors. Faculty also have complete responsibility for student assessment (e.g. designing assessment tools, provision of feedback and submission of grades).

The engagement of distance education experts as faculty, most of whom are actively involved in research and practice, affords the opportunity for students to engage in discussions enriched by international perspectives and direct experience. Further, the autonomy offered to faculty in developing and moderating their courses is not only attractive but keeps the program up-to-date and dynamic. However, this model of decentralized course development and teaching is not without challenges for faculty and the institutions that employ them. Instructors must be carefully recruited and effectively supported in order for the program to maintain its quality over time.

4.1. A Faculty Perspective From the MDE at UNIOL

This section of the paper is written from my personal perspective as a part-time faculty member working in Windsor, Canada for Oldenburg. One way in which the effectiveness of faculty support can be evaluated is whether and how much it contributes to teaching effectiveness and facilitates being able to do the work necessary to teach online. In reflecting on what contributes to my online teaching effectiveness, I can clearly see how Oldenburg's particular model of faculty support was critical in developing both my confidence and skills. At the same time, I can identify personal attributes that I brought as an individual faculty member, and actions that I take to improve my skills that contribute to success as a remote faculty member. Hence, faculty support starts with careful recruitment of individuals who are independent learners and enthusiastic teachers

[6] http://tychousa8.umuc.edu/wtdocs/wthelp/index.html (accessed: May 5, 2002)

as well as content experts, and is facilitated and maintained through well planned and executed training and development.

The Program Director at Oldenburg recruits faculty members, provides some orientation in terms of communicating expectations for course development and teaching, attends to performance assessment, and in my case, provided mentoring in the first course taught. Other than these functions, Oldenburg relies on one individual to provide most all of the day-to-day faculty support for all instructors teaching Oldenburg courses.

When I first considered teaching online, the most daunting aspect for me was the prospect of mastering the technology. However, once I realized that support was readily available from Oldenburg, I began to re-focus on teaching methodology and course content. In this respect, my experience is consistent with the Pajo and Wallace (2001) finding that faculty support needs change over time. This finding reinforces the need for a faculty support person who understands both pedagogical and technical issues, and can initiate and respond according to the situation.

4.1.1. Oldenburg Model of Faculty Support

4.1.1.1. Course Development and Teaching Support

Oldenburg supplied a written template for preparation of the course syllabus that I co-authored with Alan Tait, an academic at the Open University in the United Kingdom. We followed the basic template provided by Oldenburg, but added a great deal more content and a common structure for each section of the course (a guide to getting started, an introduction to the subject matter, and study questions). We then chose appropriate readings for each section of the course. During the writing of the course, we received no direction from Oldenburg other than the course template. I took the initiative to review a course package on the same subject from another institution, and there was constant exchange with my co-author, but for the most part, course authoring was managed independently. Once the course was complete, Oldenburg invited us to a meeting of faculty from the program.

So far, it has been possible to organize a face-to-face meeting with MDE faculty at least once a year to address both course development and teaching issues. In my case, my co-author and I had the opportunity to attend such a meeting in Germany prior to our course being offered. The meeting was after the first term of the offering of the MDE so a few faculty already had some experience with teaching online. All faculty presented their courses, and received feedback both on content and design. The meeting provided a very important opportunity to benefit from the experience of those with teaching experience, and to compare courses for consistency in approach. We were able to discuss issues such as how best to facilitate desired learning outcomes, consistency in student workloads and grading policies, and time required on particular teaching tasks.

The support and guidance provided by this meeting was a key factor in improving the course before it was offered, and in feeling prepared to teach it. One very helpful aspect of participating in the meeting was meeting with the faculty support person for Oldenburg. He plays a pivotal role in that he has expertise not only in the more technical aspects of online teaching but in the much broader pedagogical issues of teaching at a distance with technology. One of his current areas of research is how to

provide faculty support. Meeting him was the beginning of a close and supportive collegial relationship that facilitated ease of inquiry and regular contact about all aspects of teaching the course.

Since starting to teach, I have attended at least one and sometimes two meetings with my peers each year. These meetings are generally intense. We use most of the time to discuss pedagogical issues such as the structure of the program, student progress, desired learning outcomes, and grading standards. We also have an opportunity to present and get feedback on our courses and discuss teaching methods. We have had an opportunity to exchange information about applied research projects on online learning that are being carried out by faculty members. These meetings are valuable times of exchange and mutual support.

Before I started teaching, I had the opportunity to enrol in a WebTycho training course offered by UMUC. Unfortunately, at that time (early in the program history), the training course was offered only according to particular start dates and in a very structured paced style. This approach prevented my participation due to other work commitments. As a result, I embarked on the first semester with very little background in online teaching. The Program Director at Oldenburg allowed me access to a course that he was teaching so that I learned to move around with ease in the virtual classroom and observe the kind of interaction taking place. I also took the self-guided tour of WebTycho that was available, and read materials such as *"E-Moderating: A Guide to Online Teaching and Learning"* (2000) by Gilly Salmon in order to prepare myself for the first term.

As noted above, during the first offering of the course, I was mentored by the Program Director at Oldenburg. He was rostered into the course as a faculty member, and hence, had access to be able to monitor my work. He e-mailed me tips which were very helpful, and telephoned me at pre-arranged times during the term to give me feedback and advice. At the end of each term, I receive the student evaluations that are automatically done online by UMUC, and the Program Director reviews these with me by telephone.

As well as having had the Program Director as a mentor, I have access to Oldenburg's academic support person. As noted above, in addition to handling all of the technical requirements of the course, he provides consultation on instructional design and all other teaching matters. Prior to the first offering of the course, he transferred my word files into WebTycho, set up the readings so that these were available online, and during the first semester, handled anything for me which required technical knowledge such as posting announcements in HTML. This enabled me to focus on the interaction with the students, course content, and instructional design. Although we are on two separate continents, he is highly accessible. During the first term, I e-mailed him regularly with a wide variety of questions, and usually received a 24 hour or less turnaround for replies.

As he provided service, he also taught me how to manage some of the technical aspects of the course so that I could handle these myself. Although I still rely on him for certain kinds of technical support and to provide consultation about instructional issues, my contact with him after three terms of teaching is now minimal as it is with the Program Director. However, it is reassuring to know that if I need a question answered or want feedback on a particular teaching issue, the service is readily available.

4.1.1.2. Management of Online Material and Resources

The course that I teach in the MDE, *Student Support in Distance Education*, does not have an appropriate textbook as yet. The content covered is very broad, and the best sources are usually book chapters, journal articles, and conference proceedings. Initially, my co-author and I provided copies of all of the readings to Oldenburg, and these were scanned and provided online for students to download and print. Systems have been streamlined now so that I can update the list of readings before each term and submit the revisions to Oldenburg. In turn, they request the readings and copyright clearance through the UMUC Library. All of the readings continue to be available online as part of the course. This is a very important service that makes it possible to provide students with the most up-to-date and relevant reference materials each term. As well, both UMUC and Oldenburg have websites with online journals and other resources. The UMUC Library continually improves its services to online students and faculty. For example, students can now request journal articles (that are not online) and receive them by e-mail within about a week. This allows faculty to assign tasks that require extensive literature searches.

4.1.1.3. Technical Support

The faculty support person at Oldenburg is readily available by e-mail, and most technical support that I require to manage the course is available from this source. Occasionally, because the servers are maintained by UMUC, a technical problem arises which is not resolvable from Oldenburg. In this case, I use the 24/7 Help Desk available at UMUC. In all instances, telephone calls are promptly answered and helpers are available to diagnose and address problems. However, on occasion, the Help Desk has not been able to find a resolution to more complex problems. On at least two occasions, I have had to wait up to a week to get the assistance needed and could not communicate with the class during this time. During these times, I had the impression that I felt a great deal more urgency to solve the problem than the Help Desk. As a remote faculty member, this can be extremely frustrating and isolating.

4.1.2. What Contributes to Effective Teaching/Learning in the Oldenburg Model?

In on campus settings, new faculty members learn about their context fairly quickly through both formal and informal contact with peers and the acculturation process is generally taken for granted. However, when individual faculty members are geographically remote, there can be huge gaps in what they know about the institution and program of which they are a part, and obviously, this can have an impact on what and how they teach. The initial meeting with other faculty and the Program Director before I started teaching was important in not only preparing me for teaching online, but in providing me with a view of the program, its objectives, expectations of faculty members, and the content of individual courses. This meeting also gave me a strong sense of working as part of team. I was welcomed by the Program Director and my colleagues, and had an opportunity to meet the faculty support person who would be my key link with the team. In retrospect, the first meeting set a very positive tone and introduced me to the culture of Oldenburg, which is one of collaboration and teamwork. Hence, faculty development started with helping me to understand and place my role and my course in a larger context, and with encouraging me to participate fully as a team member. This is critical to teaching effectiveness.

In much the same way that student support is intended to help learners become increasingly self-directed, the faculty support model used by Oldenburg is intentionally designed to help faculty members become increasingly independent. The greatest level of support is provided before and during the first term of teaching when need is highest. As well, it is important to note that Oldenburg faculty support is directed toward quality of teaching, with little pressure to become highly technically competent immediately. It was extremely reassuring to me in the first term that sufficient technical support was provided so that I could concentrate on adapting my teaching style to the online environment.

One of the important ways in which Oldenburg focuses its faculty support resources on quality of teaching is to have an academic support person who is an academic colleague as well as a technical expert. In working with him, I found myself eager to learn how to perform various technical functions because I could see how mastering certain technical functions would allow me to improve my communications in the classroom and have greater control over when and how I posted material. For example, I learned the technical skills necessary to post announcements in the course as a result of a discussion with the academic support person about when and why to post announcements, and how to communicate the status of assignments to students as part of a conversation about giving feedback. Hence, technical skills are learned on an as needed basis and usually, in the context of quality online teaching.

Although it might be intrusive to have a colleague stand in the classroom to monitor quality of teaching, the mentoring provided during the first term by the Program Director was not intrusive. I knew that he had access to the course and looked in on a regular basis but having been previously introduced to the collaborative culture of the program, rather than being threatening, his presence provided me with a sense that there was a safety net. It also allowed him to provide me with immediate feedback such as tips that save time and common standards of communication so that I adjusted to the online environment quite quickly. His support, particularly in the beginning, has been a key element in feeling confident about my work, and in making continuous improvement in my management and teaching of the course. His style was never punitive, always constructive, and above all, provided needed peer contact and encouragement as well as guidance.

The faculty support person also had and continues to have access to my classroom, and like the Program Director, often gave me tips and assistance as well as responding to queries and managing course materials. Contact with him was critical to my early success, and to my progress in becoming more autonomous. After a couple of terms, my need for instructional and technical support is minimal and my requests for assistance are few. However, it is reassuring to know that very good technical support is available from Oldenburg when needed and that I have someone with whom I can discuss teaching issues. Similarly, support from the Program Director is now at a much lower level. He is always available by e-mail and telephone, and responds quickly to queries. However, my need for his assistance is minimal. I usually communicate with him by telephone before the start of a term, and afterwards. And he continues to review the student evaluations of the course.

The faculty meetings each year continue to be extremely helpful. Once I had some teaching experience, I knew much more about what I wanted to discuss with colleagues.

As noted above, these meetings are intense with very full agendas. We compare our experiences, discuss difficulties and possible solutions, present research findings, and contribute to program objectives and policies. We also discover common interests and take on special projects. As a result of the earlier meetings, I collaborated with a colleague in preparing generic self-help materials for entering students.

Oldenburg has experimented with different teaching models including the assignment of a senior student in the program as a teaching assistant. I had the opportunity to have a teaching assistant for my course, and it contributed a great deal to teaching effectiveness. Having a teaching assistant with whom I could share the workload meant that I could concentrate more on giving feedback and facilitating interaction. I learned some new strategies for mentoring at a distance, and it provided me with a colleague with whom I could check my perceptions - invaluable in an online environment. As well, she used her experience in the program to help me improve the course in a number of ways, particularly by occasionally challenging some of the assumptions that I had made. Although this project will probably not be continued on a regular basis, it was very useful as a faculty development tool.

UMUC also includes me in their routine communications with faculty. Hence, I receive some materials specific to the MDE program and some that go to all online faculty. For example, the MDE Program Director at UMUC will occasionally send me a reference that might be helpful for my course, notification of any changes that might affect me, and other related information. As well, I receive the online newsletter and notifications that go to all online faculty. Most of these communications are helpful in some way and I review all of them. On the other hand, I also receive a host of other communications from UMUC that are of no use. These arrive both by e-mail and regular mail, and are usually notifications of or invitations to on-campus events or faculty development activities that I cannot attend.

In summary, the elements of faculty support received from Oldenburg which contributed most to teaching effectiveness are as follows: the initial inclusion in a face-to-face meeting so that I was introduced very early to not only my colleagues but the culture and context in which I would be teaching, the unfailing availability of the academic support person for both pedagogical and technical issues, the provision of greatest support when it most needed with an intention of helping me become more autonomous, the mentoring and feedback from the Program Director, and the continual communication of a strong culture of collaboration and teamwork.

At the same time that Oldenburg's efforts to support faculty are critical to their level of comfort and skill acquisition, it is important to note that teaching staff can bring certain attributes that facilitate ease of adaptation to the online and geographically remote environment. In my own case, these included extensive experience as a practitioner and researcher in distance education including communication at a distance with students and colleagues, experience with teaching and counselling and a high level of comfort with student contact, and experience with being a distance learner and working independently out of a home office. As well, I was proactive in taking steps to enhance my effectiveness outside of what Oldenburg and UMUC had to offer. This included consultation with experienced online faculty members before and after starting to teach for Oldenburg, setting up an efficient personal management system with easy to access paper files as well as online tools, compiling model assignments and grading tools, participating in

faculty development workshops in my location, and making an investment in the MDE beyond teaching such as identifying program issues and generic student needs and helping to develop student self-help tools. Another personal factor that contributed to teaching effectiveness, particularly in the first term when my learning curve was particularly steep, was to have written the course. Hence, I had mastery of the content and design and could concentrate on all the other elements of teaching online with which I was unfamiliar.

4.1.3. Challenges and Ongoing Issues

The description of the support received from Oldenburg presents a very positive picture, and indeed, for the most part, my experience of teaching online in the MDE program has been a rewarding one. That being said, I have no illusions about the challenges I continue to face as a geographically remote part-time faculty member. Although all contact that I had with Oldenburg was extremely positive and the support was ever-present albeit at a distance, I have had times of feeling completely isolated. Being in a remote location means not having anyone that you can spontaneously chat with about practice, not having someone immediately present when you run into technical glitches or other problems (mostly due to inexperience but which could be cleared up so easily if one could run next door to an experienced colleague), not having anyone with whom to share perceptions and reflections at the time they occur, and sometimes, quite literally, not knowing how to do something and spending a great deal of time trying to figure it out independent of assistance.

It is also important to recognize that there are many faculty support issues still to be addressed. Most of these are directly related to the opportunities presented by the online environment for the teacher to be more than a tutor of a pre-set course. The MDE program takes full advantage of this opportunity by using an interactive and collaborative teaching model that does not differentiate between part-time faculty members on contract and full-time faculty members. Both categories of teaching staff have the same responsibility for their course(s). This model provides students with dynamic courses that are far different than packaged courses that can quickly become outdated. On the other hand, the model raises issues of faculty remuneration and other working conditions.

The institutions involved in the MDE program have not yet fully addressed what is realistic in terms of demands and expectations placed on part-time contract faculty members and what in turn, part-time faculty, particularly those who are geographically remote, can realistically expect from the institution. Within academia, there are high expectations for a certain amount of individual autonomy, input into decision-making, fair remuneration and benefits, opportunities for research, and a sense of collegiality. It may not be realistic to offer part-time faculty the same benefits and opportunities as full-time teaching staff. However, if the demands placed on them are similar in terms of the kind of responsibility taken for teaching, it raises the question of what can reasonably be offered in return.

The amount of time required for online teaching lessens as more experience is gained but it is never minimal. In particular, marking and giving feedback in writing is very time consuming but is one of the most important ways that a faculty member can contribute to an individual student's understanding of how well they are learning, what they are doing well, and what needs improvement. Fair remuneration for time spent is a

concern for faculty members who work on contract with no benefits or job security. Oldenburg pays part-time faculty a set amount for teaching one section (not to exceed 25 students) of a course. However, with the exception of travel to meetings, there is no provision for benefits. Full expenses are paid for attendance of a faculty meeting upon invitation of the Program Director. However, this is not a guaranteed benefit, and is dependent upon program resources being available.

It is very important for teaching effectiveness that faculty members continually engage in professional development and research activities. This includes opportunities to improve practice, for example, by learning more advanced online teaching and technical skills, and opportunities to carry out research. Full-time faculty at UMUC and Oldenburg have these kinds of opportunities available to them as part of their conditions of employment. Similarly, there are some faculty who teach for the MDE but are employed by another university full-time who look to their home university to provide funding and time for research and other development activities. However, for those part-time faculty who fall in neither category, there is little or no support available from either Oldenburg or UMUC. Lack of research funds and opportunities also affects the ability of part-time faculty to contribute to the program by initiating and carrying out research with direct applicability to online learning and related issues that affect MDE students. On a long term basis, this issue needs to be addressed in order that the MDE can continue to attract highly qualified teaching staff, regardless of their ability to fund their own research and development.

Part-time remote faculty provide all of their own equipment and supplies. This represents a considerable investment. The required hardware, software, and paper supplies alone are very expensive. Oldenburg does not make provision for expenses such as long distance telephone calls or server costs so these also have to be covered from the remuneration provided. The implication is that you cannot teach for the program unless you are willing and able to make this kind of investment, or you use the facilities of another employer (presumably with their knowledge and consent).

Another issue related to the MDE teaching model is that the time required for continuous revision is not reimbursed. Although faculty members, whether full or part-time have responsibility for the design and content of their courses, remuneration for writing the course is on a one-time only basis, and teaching remuneration is a set amount for each time the course is offered. UMUC sends out a request for new reading lists at the beginning of each term, the implication being that courses will be kept up to date, and that the teaching staff will somehow work this activity into their teaching schedule. Although faculty members usually take responsibility for revising their courses each term, this activity does not appear to be costed as a part of the program budget and no provision is made for the time spent on revision. Again, this is not so much an issue for full-time teaching staff who receive a salary and benefits. However, for part-time faculty, the per-course remuneration is scant considering the time investment in teaching and grading.

Traditional models of academic decision-making are democratic and participatory. However, as a remote faculty member, I often feel quite disconnected from the issues and policies affecting students. For example, students may talk about difficulties with student loans or other administrative concerns, and I feel quite removed from the situation and unable to help them. There is a sense that I do not actually have any input

or control over many of the things that affect students in my classes, and this contributes to my own sense of isolation. Similarly, there are only limited opportunities to have input into program decisions. At our faculty meetings, we do our best to discuss and give feedback on important pedagogical issues that affect our students and the Oldenburg Program Director encourages this but time is limited, and in practical terms, the Program Directors and the full-time faculty and staff have to make most of the decisions.

Finally, one of the unique features of the MDE program is the collaboration between a European university and an American one. It gives the program a richness through greater diversity of faculty, students, and program content. At the same time, the collaboration is challenging in that the two institutions have very different cultures, and are not always consistent in approach or policies. Differing policies in staff and faculty treatment have been the source of some tensions.

All this being said, I enjoy teaching online for the MDE program. There are a number of benefits beyond the monetary remuneration that keep me highly motivated. Teaching for Oldenburg has provided me with a unique opportunity to learn about online teaching in a very supportive environment. Each time I teach the course, it is a rewarding experience in which learning is mutual. The adult students in the program bring a wealth of experience and most approach the course enthusiastically, ready to challenge the material presented, question their own assumptions, and learn from others. As a side benefit, revising and teaching the course has also been a great way to stay current in my field. Despite being remote geographically from Oldenburg and UMUC, I have established a sense of community with my students each term and feel like an integral part of the larger MDE community. Above all, I truly do feel part of the Oldenburg team, valued and respected as one of their faculty members.

4.2. A Faculty Perspective From the MDE at UMUC

This part of the paper is also written from a personal part-time faculty member's perspective. In my case, I live in Toronto, Ontario and teach one of the mandatory core courses in the MDE as an adjunct UMUC faculty member. I am a self-employed consultant working out of a home office. Having often advised clients about online learning from a policy and project management perspective, I was intrigued and honoured at the opportunity to experience the faculty perspective and to benefit from the collaborative teaching model at UMUC and from the opportunity to create and own "my" course. I was certainly well aware of the importance of faculty support in theory and was delighted to have the opportunity to experience it in practice.

4.2.1. UMUC Model of Faculty Support

4.2.1.1. Course Development and Teaching Support

In this section, I will comment on issues such as faculty support in writing a course syllabus, needs assessment in planning and delivering faculty training, and faculty support in an atypically complex first year of online teaching. They are qualitative observations from personal experience of the UMUC model.

As a non-academic preparing a syllabus for a Senate, I felt quite intimidated but was supported by the UMUC Program Director's telephone and electronic counselling and the provision of a template to follow in preparing my document. His guidance regarding

expectations and requirements reminded me that I was a subject matter expert, that I routinely write articles for peer-reviewed journals and that writing the Syllabus was a task that I was qualified to undertake. The Director commented on successive drafts of the Syllabus and so we completed the Syllabus effectively, supportively and efficiently at a distance.

When I first heard about the MDE, I felt that I was qualified to undertake the model as described by the two Program Directors when we met at an international DE conference. However, when I was actually confronted with the reality of an offer to become an adjunct online faculty member, I looked for materials on needs-based planning for the selection and training of faculty and did not find material that helped me decided if I was qualified and where I would need support. My self-developed list resulted in the conclusion that I did not need support in three areas but had strong needs in a fourth:

(1) Comfort with writing, since print would be my primary means of communication with my colleagues and my students. I believed that I met that criterion without requiring additional support.

(2) Knowledge of the content area was not, and should not be, an issue.

(3) Grading student assignments was something of an unknown, but I had extensive experience as a grant assessor for funding applications in DE and often review articles submitted to peer-reviewed journals and to professional conference program committees. I felt, naively I would say now, that those skills would transfer well to grading and that I did not need support on that topic.

(4) Knowledge of online course management software was my area of weakness. While I had often seen demonstrations of commercially available products, I had no hands-on experience with using the software. I did, however, feel very comfortable with the pedagogy in the MDE and knew that software could support it. UMUC takes a comprehensive approach to faculty training on this topic.

As noted above, the 5-week faculty training workshop design has changed since I experienced it in the Spring 2000 because of the addition of a CD-ROM. UMUC's practice of having a 5-week course, paying faculty a bonus to complete it successfully and providing so much scheduling flexibility that the model approaches continuous intake can be regarded as an important commitment to positioning faculty for success in their course development.

In particular, in my experience, the level of tutoring provided in the training is superb and is a key element of exemplary faculty training. I have adapted into my own course many techniques that I learned from the experience of being a student in the faculty training course (e.g., the use of graphics, music and humour to vary the pace of an intense course). When I requested telephone tutoring because I found that the online model was not resulting in effective learning, my tutor readily made his time and telephone number available. However, that course also introduced me to one of the biggest challenges that I experience in my life as a non-campus based faculty member: the schizophrenia of being "included but not included" which I discuss below.

Two other issues may be pertinent to the organization of successful faculty support: timing and mentoring. First, to enhance content retention, I selected dates for my faculty training that ensured that my own course started almost immediately thereafter so that the knowledge I acquired in the faculty workshop did not decay in any significant way

before I started teaching online. In addition, I taught the course for the first time in a summer session, where the semester was half the duration of the fall and winter semesters. The short time frame made it possible to prototype approaches for the reality of the much longer fall semester. Second, I knew that I would co-teach the course with the UMUC Program Director the first time I taught the course. His role as mentor, supporting me as the theory of the faculty training course became the reality of actually teaching online, was critical to whatever success I may have had then or since.

In normal circumstances, my faculty training and novice teaching experience would have ended once I had been mentored in that first teaching experience. However, I had the typical experience of starting to teach just when UMUC was evaluating two commercial products against its own proprietary software. So, the second time I taught the course, I had to learn new commercial software and revise my course to work on a totally different platform than WebTycho. That challenge contains some other lessons that I would argue should relate to faculty support even during "normal" circumstances.

First, UMUC found a way to provide me with a teaching assistant in recognition of the extra work involved. She created tools and resources during that trial that are part of my course to this day and that would not be there without her. (I have had no similar assistance since.) It might be an idea to provide novice faculty with such support for two or three semesters to accelerate their mastery of online teaching. Second, of all the commercial course management software products that I had seen, the one that I had the chance to use at UMUC was the one that I had always liked best in demonstrations and I was delighted to have the opportunity to use it. Moreover, I knew some of the staff with the vendor and thus felt supported and welcomed – a critical support feature since I undertook the entire process with no formal training because there was no money to bring me to the week-long training at UMUC. However, as a result, I had access to considerable telephone support on a daily basis, a just-in-time faculty training model. For my learning style, I find that frequent telephone support while I am looking at the screen works best: I learn a small amount each time and have synchronous support if something goes wrong. Sending an e-mail to describe what went wrong and then reading a long message of suggestions later is not an effective way to learn for me and, to date, I use the 24/7 telephone line for troubleshooting, not e-mail. This question of faculty learning styles is important to consider when planning initial and ongoing training and support.

When my course went back to WebTycho, the third semester that I taught, it took on yet another new dimension and I had to learn a third software package and relate to a different set of teaching and technical support people: i.e., three consecutive semesters, three new pieces of software, three new teams to work with! To understand why I was agreeable to a degree of change that I would not recommend as exemplary practice in faculty support, it is important to know the financial challenge I was experiencing being a remote faculty member operating from a home office. I had had an ISP package suitable to my own consulting practice needs, but once I became an adjunct UMUC faculty member, my connection charges increased significantly and UMUC was unwilling to reimburse me. In response to this challenge, my DE coordinator suggested that he could package parts of my course as files that I could manipulate off-line. After agreeing to this suggestion, I realized that I had to purchase, at my own expense, Macromedia Dreamweaver software! However, with continuous telephone tutoring

from the DE Coordinator and eventual reimbursement by UMUC of my software purchase, I did end up with a course design and revision process that were less expensive than before we added the Dreamweaver element.

These year-long start-up training and support challenges have been replaced with support and training that are more typical of what most MDE and UMUC faculty would experience. DE coordinator support is critical at the start of each semester and at various points during the semester. When the course is transferred from one server to another at the start of a semester, even the new Class Import feature on WebTycho software does not eliminate the need for assistance. The DE Coordinator's help is needed when a hyperlink in the Dreamweaver Webliography breaks during a semester or when I want to add music, book an optional telephone conference call, etc. UMUC conducts an annual online faculty symposium that MDE faculty are eligible to participate in, another example of the institution's commitment to faculty development. I have attended one of the two offered each January since I started teaching but find them very impersonal as I know so few faculty. We have started our own MDE faculty area in WebTycho but are not yet in the habit of using it very actively.

A last element of faculty support is feedback from students regarding my work. Although UMUC collects student evaluations every semester, its issues are broad generic ones about student satisfaction with the course and the faculty. Delays in providing me with the summarized feedback as well as the generic nature of the materials have led me to create a customized evaluation conference in the last three weeks of my course where I ask students for the "one best feature of the course that I should keep" and "the one worst feature of the course that I should change". The constructive feedback that I receive there guides my course revision process.

4.2.1.2. Management of Online Material and Resources

I find that UMUC is constantly improving the support that it provides. UMUC library staff provide excellent support for the creation of Reserved Readings; online journals related to DE are regularly being added to the library, thus minimizing the need for the customized Web Resources that I initially created for my course. However, because of student feedback indicating challenges in using some of the UMUC databases and journals, I continue to upgrade my Web Resources as a service to students.

4.2.1.3. Technical Support

The 24/7 nature of the WebTycho Help Desk and its telephone or e-mail modes of service are a critical faculty support, primarily because I can refer students to the Help Desk and do not have to support them myself. When I have a rare problem that the DE Coordinator cannot handle, the telephone mode of support is what I use and what I value far more than e-mail support.

However, one of the issues that arises for me, perhaps because my course is about technology, is the lack of support that UMUC provides for technologies other than WebTycho. My students want to experience other technologies because of the nature of the course and/or because of their own learning styles. While vendor demonstrations can meet some of those needs, I have found in previous semesters that students' online environments are so diverse that even trying to use a tool such as Netmeeting is too time-consuming in terms of helping them to install the free download on their computers.

4.2.2. What Contributes to Effective Teaching/Learning in the UMUC Model

First, the interactive collaborative model is the right one for masters-level graduate study. It supports reflective discussion, Socratic dialogue and informal social networking. A key feature of the model is the flexibility that it offers to faculty and students. For example, the customized web resources in my course empower the students more than relying exclusively on centralized resources I believe. This semester, for instance, students noted the lack of search engines in online DE journals. Because they were "our" course journals, we shared the load of contacting the various journals to ask about the lack of such a feature. The students were heartened by the positive responses, including having one journal redesign its search function in the light of the students' feedback.

Second, the international MDE model works, in my opinion, because, with very few exceptions, faculty have deep professional relationships of several years' duration, with the result that the distributed nature of our faculty existence and the rarity of in-person or even telephone conversations is tolerable. But, I've never met any of the support people at UMUC (e.g., in the library, in DE coordination, etc.) and am challenged by the turnover in the people I deal with in both places – I feel that I have to train them to what I need instead of them supporting me because they know what I need.

Third, revisiting my self-assessment may be useful in considering what contributes to the effectiveness of the UMUC model of learning and faculty support.

- Yes, I feel competent in print communication but have had to adjust my style to try to create warmth and community in the course while yet maintaining some academic rigor in some of the formal conferences. In retrospect, I don't think that I would have absorbed materials on that subject in my initial training but would value targeted just-in-time training on that topic now. UMUC has started an online writing skills course for students that I find is a valuable indirect form of faculty support, relieving me of the responsibility of being a writing tutor.
- Yes, knowledge of content is critical and one that is central to the UMUC approach. In my experience, I could not have coped with all the other challenges of going online (especially the changing software environments) if I had not known the subject matter in great depth, thus being able to concentrate almost exclusively on other challenges.
- No, I had not expected the process of grading to be as challenging as it has been; very few of my other critical reading experiences transferred over to grading, and UMUC did not cover the topic in its online faculty training. I felt that I was doubly challenged because I had not done it in the classroom before having to do it online. However, UMUC automatically inserts standardized wording about grading in my online Syllabus that I now use to organize my assignment feedback to students. However, there may be a challenge regarding grading consistency within our MDE faculty cohort that is challenging to identify and redress at a distance.
- Knowledge of software, which was indeed my biggest limitation (my tutor was talking seriously about my not passing the first half of the course!), has in many ways become my greatest point of personal pride in terms of the growth that I have experienced as a result of being an MDE faculty member.

Fourth, UMUC's openness to experimentation mean that I have had a depth and breadth of experience that I would not have had otherwise. UMUC continues to revise its services

and practice and is gradually supporting other technologies such as audio clips and conference calls so that students who prefer to learn by means other than print can do so.

Online teaching, like any other form of teaching, represents a tremendous opportunity to stay current in the field and to meet adult peers who happen to be students from many walks of life. It is my practice to log onto my course every day except Saturday (with the occasional miss on a Sunday) because, while I might like to think that I am being a conscientious teacher, the reality is that I enjoy the connectedness and excitement and find that the course is a great start to the day.

Drilling down into the tangential experiences that other MDE faculty bring to the model would uncover perhaps unexpected findings that might also contribute to explaining why the MDE model works. For example, I find that the skills I have transferred or built upon have not been the in-person ones that I possessed before starting to teach online, but the technology-based skills that I had acquired from using other technologies, especially audio conferencing. One of the most cogent reasons that I can give for this impression is that audioconferencing, like online, has no visual element and so the techniques that I learned to promote community in the audio environment work well in the text environment. In sum, and regardless of my thoughts in the next section, I have found the experience of being an online adjunct faculty member in UMUC's portion of the MDE to be a highly rewarding experience, one that I value and look forward to continuing.

4.2.3. Challenges and Ongoing Issues

Notwithstanding the comments above, the UMUC model of faculty support as I experience it is that of the solitary faculty member who works pretty autonomously with minimal support. My experience might be seen as analogous, perhaps, to Moore and Kearsley's "author/editor" model (1996, pp. 105-106) except I would define it as an "author/DE coordinator" model. The team available to a remote faculty member is, in my personal experience, tenuous and not as a real presence in practice as it is intended to be in theory. What follows are my own personal perceptions of my reality, and are not, I want to stress, what either UMUC or the MDE program, have intended me to experience.

- Inclusion and Community: I routinely receive communications from UMUC administration designed to make me feel included in the UMUC community: e.g., invitations to commencement and other events. However, since neither UMUC nor the MDE program seem to have a travel budget to support my attendance, receiving such invitations has the opposite effect of what is intended – I feel excluded from the UMUC community and think that I would prefer not to be invited to events that I cannot attend. Second, while I have a strong sense of community with MDE core faculty after the January 2002 in-person meeting in Oldenburg, I have never met non-faculty who are my support team at UMUC and since most are hard, if not impossible, to reach by phone, I have not been able to experience my preferred mode of distance relationships that would include a voice element.
- Finances: On a related issue, UMUC does not provide financial support for the additional office expenses that I incur as a result of being an adjunct faculty member: e.g., printer paper, computer and printer use, increased ISP charges, etc. In my experience, I subsidize the MDE, a model that does not seem scalable and sustainable in the long-term. The budget for the visiting expert model described

above is unclear to me as a faculty member. The two faculty that I have invited as guests in my course participated as a professional courtesy at no charge.

- Competition for DE coordinator time and lack of continuity: My sense is that I am in a losing competition with on-campus faculty and on-campus meetings for access to my DE coordinator. Moreover, I have experienced a high turnover rate (2 DE Coordinators in 2 years) and have never met either person which works against continuity and a sense of being part of a team. It is important to note that my current DE Coordinator is not MDE Coordinator, Deborah Schroeder who was interviewed for this article. Hence, any continuity that she might offer the MDE is not one that I experience. The lack of continuity is a particular challenge because the previous coordinator customized my course with Dreamweaver but then left. My impression is that he, like myself, felt ownership of my course; understandably, I have lost that element of collegiality with a new DE coordinator.
- Continuous course revision: The degree of ownership given to us as course authors who teach our own materials rather than tutors who use others' resources results in the expectation of continuous course revision every semester without any equivalent difference in pay.
- Policy asymmetry between two MDE partners: Of necessity, UMUC and Oldenburg administer the MDE using a combination of (i) policies that are consistent and common to all faculty in the MDE and (ii) policies that are different and apply differently to faculty in the MDE because each institution is an autonomous university. While understandable, such a hybrid policy environment results in inconsistencies in faculty requirements and support. For example, UMUC's policy that all graduate faculty must use audio clips in their courses does not apply to Oldenburg faculty, resulting in extra work for UMUC faculty and differing resources for students depending on which institution's faculty has developed and taught the course.
- Workload: Allen's (2001) statement about features of the UMUC teaching model which noted "small class sizes of 20-30" is not something that resonates with me. My experience teaching a core course in the MDE is that I consistently have the maximum enrollment of 30 graduate students at the start of each semester and, unlike campus faculty, have no help in terms of a resource such as a teaching assistant.
- Basic level of support tools for students: My feedback from students is that the mandatory UMUC library course and the recently introduced writing course are too basic: e.g., they did not learn how to search online journals or indeed did not learn about the difference between peer-reviewed journals and professional newsletters. As a result, I find that there is no effective support to relieve me as a faculty of those burdens. My assumption coming into the MDE and seeing that UMUC offered those courses was that I could expect students to have a level of writing and research skills that they do not consistently have.
- Lack of support for other technologies than online text: Notwithstanding my previous positive comments on some of the work that UMUC is doing to expand its technology mix, I find that the essential requirement that text is the only mandatory, supported format (e.g., conference calls can only be used as an option) limits the teaching/learning formats faculty can offer and disadvantages students who would appreciate having audio and video modes of learning.

5. Conclusions

New technologies always have both intended and unintended consequences, creating new challenges at the same time as they offer new opportunities. The online environment allows institutions to recruit and employ teaching staff for their expertise regardless of geographic location, and hence, can facilitate the creation of a dynamic and richly diverse learning environment for students. At the same time, arrangements for faculty remuneration, working conditions, and all other facets of development and support are becoming increasingly complex. The MDE is part of a small but growing number of international collaborative graduate programs offered by institutions on two different continents and employing a combination of full-time on-site and part-time geographically remote faculty to teach an internationally based study body through computer-based technology. It offers an interesting model for examining and evaluating the practice of providing faculty support in an online environment.

The complexities and challenges presented by employing geographically remote faculty need to be addressed through careful planning and budgeting before a program is implemented. As well as ensuring adequate resources, basic questions such as the nature and appropriate level of faculty support should be addressed in the context of program design and philosophy. Based on the experience in the MDE program, the following are recommendations for faculty support practices that have the potential to contribute to teaching effectiveness.

If faculty members are geographically remote and have a high level of responsibility for course design and content, it is important to recruit faculty who are as independent and self-directed in their work and learning style as their students need to be. Shortly after recruitment (and if possible, regularly thereafter), it is ideal to offer the opportunity for faculty members to meet some or all of their faculty and support colleagues face to face. Provision of opportunities to meet with other faculty is very important to the effectiveness of both the individual and the teaching team and contributes to the quality of the program. If meeting face to face is not possible, it is important to find other ways to orient faculty to the culture and context within which they will be working and start a process of continuous dialogue by communicating a sense of inclusion and encouraging contact. An orientation should address the following:

- overall objectives and values of the institution and program (institutional culture; pedagogical stance; what kind of learning experience students should expect; what skills and knowledge students will be expected to gain)
- program and course content (faculty member's role in the larger context)
- expectations for faculty performance (e.g. availability to students, time to be spent online, turnaround times for feedback and grading)
- policies with regard to most common academic issues and where to find information on these (e.g. grading, extensions)
- information about who to contact for different types of assistance
- an opportunity for the faculty member to introduce themselves and talk about their course
- an exchange among experienced and new faculty about what practices might be helpful when starting online teaching

In addition to an orientation, a welcome should be sent to each faculty member before teaching begins. This welcome should be sent via regular mail as well as online, and include a message from the person with whom the faculty member will have the most contact. The welcome can reinforce the desirability of regular contact. The welcome package should not overwhelm with information that is not yet useful. However, a quick guide of perhaps 2 – 4 pages of most frequently needed information could be kept for handy reference by the computer. For example, this might include the following:

- faculty support contact information, e.g. name of main contact and telephone number and e-mail address; toll free number for the Help Desk,
- how and where to find information online, e.g. website for Faculty Portal, website for the Faculty Handbook with a short guide to content (e.g. incompletes, grading), website for academic policies, main program website, website for student self-help and student non-credit courses, website for Library, online journals and other resources.

Mentoring by an experienced faculty member during the first term of teaching online appears to be a very effective method of training and at the same time, ensures quality and consistency of approach. Further, online faculty members need to have confidence that assistance for dealing with technical procedures and problems is readily available in order that they can focus attention on course content and teaching. It helps if assistance is offered by someone who is experienced with pedagogical matters and with interacting with faculty. Online library services are as critical to geographically remote faculty members as they are to students. Services such as interlibrary loans, copyright clearance, online journals, and document scanning help faculty keep their courses up to date and dynamic. As well, the provision and management of online resources and materials are critical. For example, materials that are custom written by the instructor for the course should be easily accessible for updating and reuse.

The Oldenburg model of support provision is very successful in its objective of keeping the focus of faculty on pedagogical matters and content rather than having them spend a great deal of time on technical details. However, it is important to note that this model requires a faculty support person who is not only readily available when needed but who is highly skilled, both in pedagogical issues and technical aspects of teaching online. Supporting a first-time faculty member can be labour intensive in this model, and this raises the question of scalability. Oldenburg tries to maximize their investment by making the greatest effort in the first term with the intention that the instructor will become largely self-supporting fairly quickly. However, it would not be possible using the Oldenburg model to support large numbers of faculty with one academic support person. By contrast, UMUC is able to support many more faculty using a model which ensures scalability by having DE Coordinators who focus on technical assistance and who are assigned large sections of teaching staff. However, this model does not always provide the readily available and personalized service that a faculty member, particularly a new one, needs.

Online teaching and learning is growing at a phenomenal rate, and as with any new area of practice, there are still many questions of how best to proceed. In order to offer a quality learning environment, it is necessary to recruit and support quality teaching staff. However, supporting geographically remote part-time faculty is challenging and can be expensive. It remains to be seen whether and how institutions like UMUC and

Oldenburg can maintain the type and quality of faculty support that they have provided to date. Further, issues of what part-time faculty can realistically expect in terms of remuneration, benefits, defrayment of expenses for costly home offices, opportunities for research and development, and participation in academic decision-making are yet to be addressed.

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THOMAS HÜLSMANN

Costs Without Camouflage

A Cost-Analysis of Oldenburg University's two Graduate Certificate Programs Offered as Part of the Online Master of Distance Education (MDE) - A Case Study

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1. Introduction

The paper offers a cost-analysis of two online graduate certificate programs which are an integral part of the online Master of Distance Education program, jointly offered by the University of Maryland University College (UMUC) and the Center for Distance Education (ZEF) at Carl von Ossietzky University of Oldenburg[1] (cf. Bernath & Rubin, 2001 and Bernath & Rubin in this volume). The case study is about the management of networked teaching and learning in two certificate programs: the *Foundations of Distance Education Certificate*, and the *Distance Education in Developing Countries Certificate*.

The issues addressed relate to the international cooperation in an online Master's program, the management of networked teaching and learning, and sustainability through cost recovery. The point is to set up a program, which generates sufficient 'surplus' (not profit) for quality investments and program sustainability and expansion.

1.1. Objective of the Paper

There is a relative dearth on cost data. Though most institutions officially regret this, costing information is mostly treated following a 'secret service principle', i.e. the more we know about the others and the less they know about us, the better. Even in case institutions agree to release cost data they often insist on masking them to a degree where few conclusions can be derived from them.

This paper breaks with this secret service principle and offers a detailed and explicit breakdown of the costs - without camouflage. This is the main contribution the paper tries to make. It has been possible to come quite close to the real costs because the director of ZEF, Bernath, did accept, and indeed finally encouraged this approach and willingly provided the necessary data. Moreover, since Bernath is a keen time keeper of his and the center's activities it is possible to offer good quality data.

[1] Sometimes, for the sake of simplicity, we use the abbreviation UNIOL, although it is not an official or standard abbreviation.

Beyond the perennial questions 'How much does it cost?' and 'Why does it cost so much?', there are other questions to which the paper contributes such as 'Is the program scalable?', 'What is the ideal class size?', 'What is the instructor time required to teach an online class?', 'Is it cheaper to outsource activities?', and 'What are the main avenues of quality investment?' We summarize our findings at the end of the paper.

1.2. A Note on Methodology

But first a note on methodology. The case study is an unusual one. Cohen and Manion (1980) classify case studies along the two axes (natural to artificial setting, and the level of imposed structure). According to this classification this case study is quite close to the natural setting, while it at the same time imposes structure to a considerable degree. Indeed, being heavily involved in course development and teaching of the program, the author is so close to the natural setting of the program, that the danger is not the lack of contextual knowledge, but rather the 'blind spot', which makes it difficult to be participant and observer at the same time.

The high degree of imposed structure is due to the fact that there is an established methodology of costing distance education courses (Orivel, 1987; Perraton, 1982; Rumble, 1997; Bates, 1994; Hülsmann, 2000). This literature provides a reasonable conceptual format to guide data collection.

There is, however, a methodological reference rarely made, which I regard as important. It relates to the distinction Lincoln and Guba (1985) make between 'generalizability' and 'transferability'. These authors reject the notion of social research aiming at generalizations which, in analogy to the laws of nature, should identify general laws describing social processes. This approach has turned out to be quite sterile with regard to the results and unsound from an epistemological perspective. The authors suggest embedding the findings in a 'thick description' of the context which enables readers and users of the case study to make reasonable judgements, if the findings, given the described context, are likely to apply to the reader's/user's own context. Hence, transfer becomes a joint responsibility of the author, who needs to embed the findings in a sufficiently thick description of the context, and the user, who is responsible for establishing, whether his/her context is sufficiently close to the one described, making a transfer of findings reasonable[2].

1.3. What is Missing

In this paper we discuss the cooperation between UMUC and Oldenburg University. This means that we have several cost locations, not all of them under our control. The principle objective of the paper is to identify the direct costs attributable to the courses offered by ZEF. In addition to the direct course costs we have to assess the overheads and the costs of managing the cooperation. This still leaves the cost-analysis incomplete if we were to cost the program as a whole. One has to read our findings against the backdrop of this cooperation, in which several functions to run the program are taken care of by UMUC as our cooperation partner[3]. Such functions include student

[2] An additional advantage of this paper being included in this book is that a series of articles further contributes to such a 'thick description' of the context.

[3] For a synopsis cf. Bernath & Rubin in this volume, Table 5: The UMUC/UNIOL Model of Collaboration (p.27).

administration, marketing, the learning platform WebTycho (including the Help Desk), as well as library services (including copyright clearance).

Hence, readers may use the study to get benchmark data on direct course costs and the cost of several quality investment measures. However, the transfer of findings should take note of the context of cooperation, in which several functions are externalized and consequently not included in this paper.

1.4. Advance Organizer

The paper describes and analyzes the costs incurred and the revenue generated by two graduate certificate programs: (i) the *Certificate Foundations of Distance Education*, and (ii) the *Certificate Distance Education in Developing Countries*. The two programs are offered within the online Master of Distance education (MDE) program as an intermediate option for those who do not want, or cannot opt for the full MDE program right from the beginning.

The *Certificate Foundations of Distance Education* consists of four courses

- *Foundation of Distance Education* (OMDE 601)
- *Economics of Distance Education* (OMDE 606)[4]
- *New and Emerging Media in Distance Education* (OMDE 605)[5]
- *Student Support in Distance Education* (OMDE 624)[6]

The *Certificate Distance Education in Developing Countries* also consists of four courses

- *Foundation of Distance Education* (OMDE 601)
- *Economics of Distance Education* (OMDE 606)[4]
- *National and International Policies for Distance Education in Developing Countries* (OMDE 625)
- *Technologies for Distance Education in Developing Countries* (OMDE 626)

Note that the certificates include some identical courses. It was felt that courses in *Distance Education in Developing Countries* would require some basic understanding of the *Foundations of Distance Education* and would strongly benefit from a good grounding in the economics of distance education, especially in cost-analysis.

The paper starts by giving a short history of the MDE[7]. This is to be seen as part of the 'thick description', required to guide the drawing of conclusions from the paper for other contexts (cf. the concept of transferability in Lincoln & Guba, 1985). History is part of context and impinges on aspects of cost-analysis. A point in case are the costs of course development of OMDE 601, which profited a great deal from the *Virtual Seminar* (VS; cf. Bernath in this volume). We treat the costs of the VS as 'sunk costs' for the purpose of our analysis, since they „… are not regarded as relevant to current decision making“ (Rumble, 1997, p. 16). Another important aspect of context is the way ZEF is positioned

[4] This course has been renamed 'Management of Distance Education I: Cost analysis'

[5] This course changed its name and status and is now an elective course. The new name is *Learning and Training with Multimedia* (OMDE 620).

[6] This course changed its status and is now one of the core courses of the MDE program (OMDE 608).

[7] For a more detailed account on the history and development of the MDE cf. Bernath & Rubin in this volume.

within the network of distance education institutions (ICDE, EDEN, EADTU, ALN). Its director, Bernath, for many years pursued the policy of giving the Center of Distance Education in Oldenburg an internationally visible profile. It is only against this backdrop that it can be understood how it was possible to attract a number of leading experts in distance education and to draw them into this cooperation. It is in the second section of this paper that we develop the necessary context to enable the reader to interpret the findings within their proper context.

Section three is the core part of the paper and includes the cost-analysis, beginning with a remark on methodology. In general the costing methodology is well established (as stated above; cf. p. 170) and we make use of it. However, given that the Center for Distance Education is part of a publicly funded university all 'profits' (the difference of costs and revenues) must be reinvested in program related activities. Ideally the books are always balanced, which suggests that costs can be estimated by generated revenue. We do this in a first subsection (3.2 Cash flow analysis; 3.2.2 Backflush costing). However, this type of analysis is not particularly suited for identifying individual cost drivers and to attribute costs to particular activities (such as course development or course presentation). In this or managed costs seems to be a relevant distinction. It allows us to differentiate between costs committed to contractual obligations as part of the cooperation and costs of 'quality investment'. The latter costs are managed or flexible since they can be scaled down to some extent if revenue falls. Hence the further subsections first detail the committed costs followed by the managed costs.

The last section of the paper draws the findings together, revisits some issues and, finally relates the findings to some of the major issues in the current discussions of online learning, including scalability, group size, and teacher's time.

2. The MDE: A Short History

History is a dimension of context and context is of importance in costing. Most who read case studies on costing are likely to ask questions like: How did they do it? What did it cost them? Could we do a similar thing? Could we do it at lower costs?

The history of the MDE can be described in three steps: (i) A pre-history: The *Virtual Seminar* for Professional Development in Distance Education. This period is important since much of the development for OMDE 601 and in fact the MDE as a whole was carried out as part of the *Virtual Seminar*. (ii) A period of incubation: This includes the concept of the program as a whole and the development of a working cooperation between UNIOL and UMUC. Here we need to describe how the part we are analyzing is as a whole embedded in UMUC's infrastructure. This allows us to identify costs that will be ignored in this analysis. (iii) The period of development of the different courses and their presentation. This part includes the core of the cost-analysis.

2.1. A Pre-History: The Virtual Seminar for Professional Development in DE

You will find a detailed account of the history of the *Virtual Seminar for Professional Development in Distance Education* in this volume (cf. Bernath & Rubin; a complete description of the seminar itself find in Bernath & Rubin (Eds.) 1999). Their chapter in

this volume, and indeed the volume as a whole, can be read as what I referred to as 'thick description'.

I want to emphasize some points because they either relate directly to costs or indirectly to the issue of transferability. The directly cost related aspect is that the *Virtual Seminar* was sponsored by an AT&T grant offered in conjunction with the ICDE[8]/AT&T Global Distance Learning Initiative. The grant of US$ 75 000 was used as described below in Table 2-1. The *Virtual Seminar* was launched in 1997 and offered for free to professionals in distance education. In 1997 and 1998 it was offered another two times in a more cost recovering and self-supporting manner.

Table 2-1: Costs of the Virtual Seminar

Identification of cost drivers	**US$ ('97)**
Includes: project development, management and moderation (2 persons)	$ 30 000
Two laptops for seminar leaders	$ 7 000
Technical assistance and Hypernews administration	$ 14 000
Four internationally renowned experts (30 hours/week for one week each plus participation in evaluation)	$ 11 000
External evaluation	$ 4 000
Several; including two separate face-to-face meetings and production of final report	$ 9 000
Total	**$ 75 000**

Based on Hülsmann (2000)

The aspect that the seminar was sponsored by ICDE is also not without significance. It underlines that distance education has developed professional organizations and networks. Bernath was well placed in the network and knew about the grant, to launch a successful application, and later on to muster enough support from high profile professionals to make the *Virtual Seminar for Professional Development* (VS) live up to its name, i.e. a truly professional seminar able to attract professionals within the field. Indeed, the multiple references to professionalism may not fully reflect that the developing relationships were more than business relations. Cooperation developed into a networked community with a high level of trust and mutual appreciation. The importance of trust has elsewhere been emphasized also as a feature impinging on economics. Not to include this information would deprive the reader and possible user of important contextual information.

The *Virtual Seminar* was important for four reasons:

(i) The principal initiators of the *Virtual Seminar* developed the format which they were able to apply for the development of the MDE. The format can be described as a specific way of using an asynchronous conference platform. Asynchronous conferencing can be implemented in a variety of ways. Here it was modeled after an academic seminar: identify a number of seminal texts as required readings, and conducting focused discussions on these readings.

[8] The International Council for Open and Distance Education (ICDE) is a major organization of institutions and individuals involved in distance education.

(ii) The *Virtual Seminar* brought together two well placed representatives of UMUC and Oldenburg University in a highly successful project. However, the cooperation, though appreciated by the respective institutions, did not yet imply a high profile institutional cooperation. Thus, the professional seminar was of utmost importance: It produced a convincing product to bring the two institutions (University of Oldenburg and UMUC) together in a joint venture. The successful seminars improved the standing of those who became the major protagonists of the MDE within their institutions and sparked their institutions' interest in a MDE project.

(iii) Beyond giving the main protagonists confidence in the format the *Virtual Seminar* had already done much leg work for the first course of the MDE program, i.e. *Foundations in Distance Education* (OMDE 601). The three major modules in this course were themes already developed for the *Virtual Seminar*. Obviously things had to be modified, since the *Virtual Seminar* extended over 10 weeks, designed to require five Student Learning Hours (SLH) per week. The three credit MDE courses were designed for 150 SLH extending over 15 weeks. Moreover, an assessment component needed to be developed and added. Although the modifications were substantial, we will see that the relatively low development costs of OMDE 601 and its short 'time to market' can only be explained by the sizable transfer of content made from the *Virtual Seminar* to the *Foundations* course.

(iv) Most importantly the development work for the *Virtual Seminar* brought together a network of experts whose practical cooperation lead to a relationship of mutual trust and good will from which the MDE most significantly benefited. Especially Holmberg and Peters need to be mentioned. They took part in the *Virtual Seminar* and have proved to be important allies in contributing to OMDE 601. Bates, also involved in the *Virtual Seminar,* later contributed to OMDE 606, which is part of the *Foundations Certificate* (OMDE 606). The heavy involvement of these master practitioners as part of the educational experience became a flagship feature of the *Foundations* certificate.

The above underlines the methodological points made in the introduction to this section: project history is an important dimension of context and impinges directly on costs. The development costs of the *Virtual Seminar*, from the standpoint of the certificate programs, are sunk costs. This needs to be taken into account when reflecting on transferability as biasing the costs downwards.

The description of the context is not only important when comparing costs. It is also relevant for answering the question of transferability: "Can we do it too?". In this case the historical context illustrates a process of networking, of building trust, leading to synergies generating forms of cooperation with a number of leading experts in distance education involved in the *Virtual Seminar*.

2.2. A Period of Incubation: The Idea of an Online MDE is Taking Shape

The year spanning from November 1998 to November 1999 can be described as a period of incubation. It is during this time that the experience of the *Virtual Seminar* matured into the conceptualization of a fully fledged Master program. For this reason the cooperation between Rubin and Bernath, which had until then been a largely personal cooperation, had to be developed into a cooperation between the two involved institutions. First steps in this direction took place in November 1998.

In November 1998 the two initiators of the *Virtual Seminar* seized the opportunity to bring the *Virtual Seminar* to the attention of both institutions, when a member of the Presidential Council of the University Oldenburg met the President of UMUC and the Executive Vice President of UMUC. The two initiators of the *Virtual Seminar* explained what had been achieved and pointed out the potential of the approach. As a result Rubin was charged with developing the MDE as soon as possible.

Given these circumstances it was only straightforward to immediately involve the Oldenburg side in the project. Not only had the cooperation for the *Virtual Seminar* been a proven success, international cooperation itself, especially in distance education where the market was envisioned as a global market, was seen as an asset.

It then almost seems logical that a meeting held in January 1999 in Oldenburg, originally scheduled to finalize the report on the *Virtual Seminar*, turned into an intensive planning session for the Master program, with a special focus on the *Foundations* certificate. It was recognized that the *Virtual Seminar* would allow an almost immediate start, since much of the development for a foundations course in distance education had in fact already been done. Pace was looked upon as important: immediately start with the *Foundations in Distance Education* course and develop the other courses on the fly.

For Oldenburg this meant to find allies to develop the other courses conceived as important for a certificate *Foundations in Distance Education*: Which further areas in distance education would be candidates for such a certificate? Certainly the issue of 'technology and new media' would be such a candidate. Considered equally important were questions of 'economics and costs'. And, last but not least, 'student support' was regarded as a central issue for studying at a distance. Resource persons who would be able to develop the respective syllabi needed to be identified. But first, funding had to be found. Both partners moved in parallel:

- In order to obtain accreditation Rubin submitted a "Proposal and Business Plan" to the Maryland Higher Education Council (MHEC) in March 99. The proposal made the case that due to the expansion of distance education, especially in the form of eLearning, there would be an explosive demand for professionals in this field. The proposal was revised in April and subsequently accepted. Proposals themselves are a cost driver: Rubin had dedicated three full months of his time to develop the proposal and successfully bring it through the MHEC.
- On the Oldenburg side Bernath, in conjunction with Garz, from the School of Education at Oldenburg University, successfully applied for HSP III resources (i.e. special federal resources for innovative programs in higher education) in May 1999. Again, developing a competitive proposal proved to be a not trivial undertaking: For about three months Bernath invested half of his work time in preparing the application[9]. When it was finally successful, it generated 240 000 DM (about US$ 130 000) to support course development for four *Foundations Certificate* courses. The envisaged time frame for their development extended from October 1999 to December 2000.

[9] This includes considerable networking to rally the necessary support within the institution and in the Lower Saxony Ministry of Education

Having the funds allowed moving on. Bernath was quickly able ensure the cooperation of Holmberg and Peters, who both had already been involved in the *Virtual Seminar*. Since all involved in drafting the syllabus for the *Foundations* course (OMDE 601), had been also involved in the *Virtual Seminar*, the development of the syllabus for OMDE 601 could be completed quickly.

Being well placed within the professional network of distance education (including ICDE, EADTU), Bernath quickly found allies to cooperate for the development of the other courses which were part of the *Foundations Certificate*.

The friendly support Bernath had lent to Hülsmann's research project facilitated the cooperation between them. Hülsmann was charged to develop the course *Economics of Distance Education* (OMDE 606). Hülsmann had completed a research project for the International Research Foundation of Open Learning (IRFOL) on costs which was to be developed into a handbook (Hülsmann, 2000). Hülsmann and Bernath invited Rumble, one of the major international experts on economic and cost aspects of distance education, to participate in the *Economics* course as a visiting expert.

In 1998 Bernath and Hasebrook jointly ran a major project on "The Future of Learning & Training: Combining Visionary Anticipations with Teaching and Training Practices"[10]. Hasebrook is a psychologist who has written extensively on learning with new media (Hasebrook, 1999 a, 1999 b). He had developed a Web Based Training (WBT) unit on learning with new media, which became a central element of the course *New and Emerging Media* (OMDE 605).

Finally, the last course conceived as essential for a *Foundations Certificate* was related to the aspect of student support. The world famous institution that had made student support a center piece of its teaching arrangement is the Open University (OUUK). From its very beginning the Center for Distance Education at Oldenburg University followed in its counseling and tutoring arrangements the example of OUUK. The Cambridge International Conferences on Open and Distance Learning, organized by Mills and Tait, intensified good personal as well as professional contacts. Bernath invited Tait, a prominent expert on student support and counseling, to participate in the MDE program by developing the course on student support and he teamed up with Brindley, an equally renowned Canadian expert, to develop the syllabus for *Student Support in Distance Education* (OMDE 624).

With funding assured and the development processes well set on rails the two institutions felt confident to formalize their agreement in early November in a "Memorandum of Understanding". The memorandum defines the modalities of cooperation, distribution of responsibilities, and splitting of revenues. Just shortly before this important event (January 1st, 2000) the MDE was formally announced on the UMUC web site. We could regard this as the date when the MDE was effectively launched.

[10] Cf. http://www.uni-oldenburg.de/zef/cebit/ceho-ine.htm

2.3. A Period of Development

The development tasks can be divided into the development of the MDE program as a whole, and the development of the individual courses. The first task is a management task and concerns the two program directors, while the second task relates mainly to the subject matter experts.

The management tasks involve to some extent the management of the institutional cooperation, while on the Oldenburg side specific management issues for a Master degree program needed to be addressed. These affected the position of the Center of Distance Education (ZEF). The Center's activities within the UMUC cooperation required allies within the university. The School of Education became such an ally by creating with the Center for Distance Education the ASF (a central unit for research in distance education) and can be described as a joint venture of ZEF and the School of Education. Innovative intra-university arrangements such as this required a considerable management effort.

On the working level a team took shape when Hülsmann joined Zawacki, a junior staff member of ZEF, and Bernath, the director of the center. Zawacki had been employed on a full time basis since November 99, but worked only with half of his time for the MDE program. Zawacki developed for ZEF the MDE web sites (e.g. the ASF web site) and handled a number of issues of faculty support including the important issue of resource management.

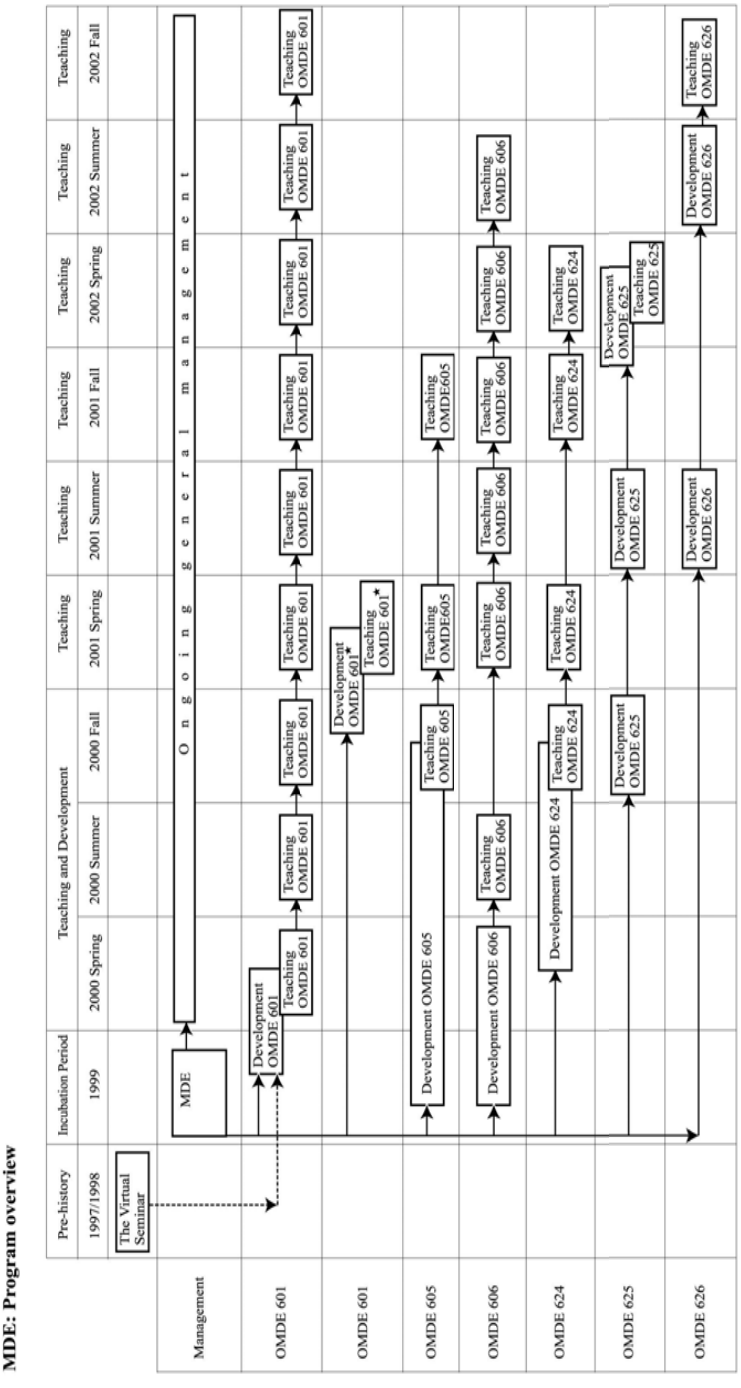
Hülsmann was already involved since October 1999 when he was charged with the development of the core course *Economics of Distance Education* (OMDE 606). At the time he was still in Cambridge (GB) but signaled his interest to return to Germany and become fully involved in the MDE.

The first course to be launched was obviously the *Foundations of Distance Education* course (OMDE 601) and considered the gateway course all students should take to enter the program. A final meeting in November 1999 brought together the two program directors and Holmberg and Peters, who had played an important role in designing the course syllabus for OMDE 601.

Hence the time between January 1999 and January 2000 can be regarded as a phase of planning, management, and development. The first course started on January 29, 2000.

One can reasonably argue that the first run of a course is part and parcel of the development process. According to this definition the development process of the Certificate *Foundations of Distance Education* was completed by the end of 2000, since all certificate courses (OMDE 601, OMDE 605, OMDE 606, and OMDE 624) had been taught at least once by the end of the Fall term 2000. The development process for the *Certificate Distance Education in Developing Countries* was only completed in the Fall 2002 when OMDE 626 (*Technologies for Distance Education in Developing Countries*) had been taught for the first time.

MDE: Program overview

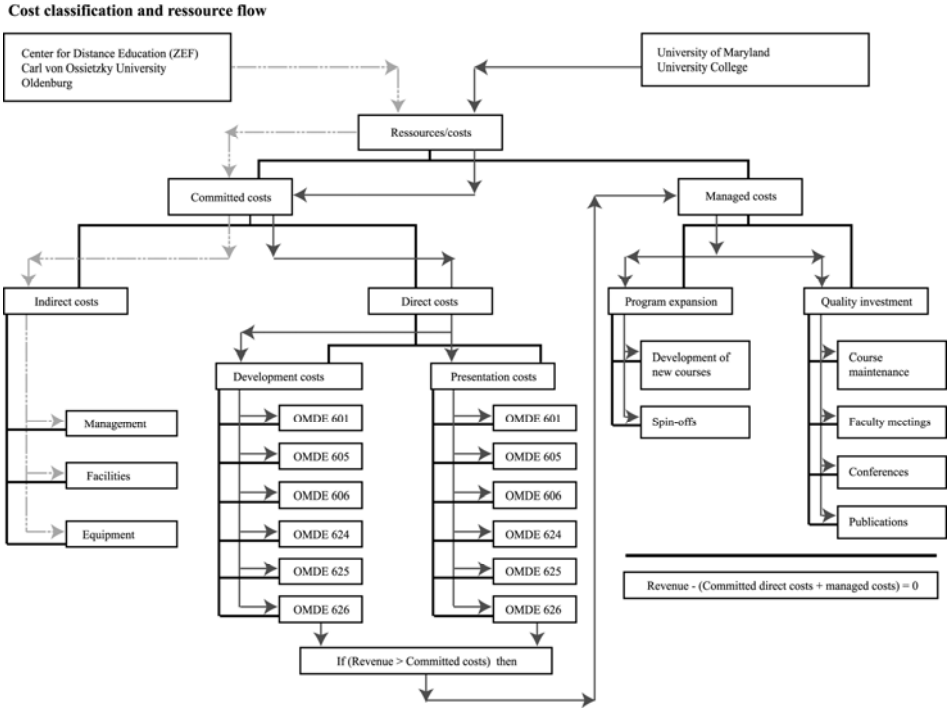


Notes: * A 3rd section of OMDE 601 had to be opened. The course was adapted to be taught with a set of different 'visiting experts'.

3. Cost-Analysis

The cost-analysis will proceed in four major steps. In a first move it identifies a number of methodological issues and outlines the further analysis (Figure 3.1.-1). This includes some observations on how costs are assigned. In a second step we arrive at a first approximation of the course costs based on a backflush costing approach. However, backflush costing is of limited value for understanding what the main cost drivers are. In a third step we therefore analyze the committed costs, both direct and indirect ones. Committed costs are those essential for rendering the contracted services. Then, in a final step, we move on to the managed costs. The managed or flexible costs correspond to the surplus remaining when committed costs are subtracted from the incoming revenue flow. This surplus is an indicator for the scope of available investments in program expansion and/or in enhancing program quality.

Figure 3.1. - 1: Analysis Outline



3.1. Preparing the Cost-Analysis

This section falls into three parts: (i) a discussion on committed and flexible costs and an outline of the cost-analysis in this paper; (ii) a discussion on how we attribute costs; the discussion outlining the triangulation process between the descriptive approach to costing (i.e. Activity based Costing (ABC)) and a more normative approach; (iii) the application of this approach by assigning the central human resource costs.

3.1.1. Committed and Managed Costs

The central cost objects[11] in our analysis are courses. A cost object generates the demand for activities, which in turn causes costs. The central cost objects in this analysis are the courses OMDE 601, OMDE 605, OMDE 606, OMDE 624, OMDE 625, OMDE 626, which compose the two certificate programs offered by ZEF/UNIOL (*Foundations of Distance Education* and *Distance Education in Developing Countries*).

Since ZEF, as part of Oldenburg university, is a public not-for-profit central unit all revenue generated through the MDE program must be ploughed back into the program. If continued losses were to be incurred the program could only be sustained by funds dedicated to the program itself. Any surplus is spent in additional activities (such as publishing this volume), which in turn cause costs. Hence, the generated revenue gives a first approximation of the cost incurred ('backflush costing'[12]): [revenue generated = costs incurred].

However, this approach is predicated on the assumption that all costs incurred are paid out of the generated revenue. This is not correct, as we will see, since there are more or less visible subsidies for the program contributed by the university (including premises, equipment, and services). Nevertheless, the backflush approach gives a first, albeit underestimated, benchmark figure for the costs incurred. A further weakness of the mere backflush costing approach is that it does not allow us to identify the principal cost drivers, nor does it give a meaningful answer to the question of the break even point.

Here the distinction between committed costs and managed (or flexible) costs can be applied. According to Rumble "Committed costs are the costs that arise from a management decision to supply capacity to perform work" (Rumble, unpublished paper, n.d). With respect to the corporate sector Rumble (1997) states: "Committed costs are those which cannot be eliminated or cut back without a major effect on the enterprise's objectives and profits" (p. 30). This could be translated into our context as: Committed costs are those which cannot be eliminated or cut back without a major effect on the contractual obligations agreed to.

Managed (or flexible) costs on the other hand are those "… which can be reduced fairly easily without any immediate major disruption to the objectives or profits of the organization" (Rumble, 1997, p. 30). This translates for our context into the statement that managed costs are those which can be reduced fairly easily without any immediate major breach of contract. The distinction between committed and managed costs is useful for our context. Some costs are related to activities which cannot be scaled down without breach of contract, while others can. For example, ZEF needs to develop the courses, it agreed to develop - this is an activity corresponding to a committed cost. The number of faculty meetings or the frequency of conference visits and giving the MDE a visible profile within the community - all this can be scaled down if revenues soar.

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[11] For the definition of the term cf. Rumble (1997, p. 55)

[12] Rumble (1997, p. 59). Backflush costing means dividing the cost of the system by the output of the system. If we consider the output of an educational system teaching students then backflush costing leads to cost per student. If 'revenue = costs' and the outcome is again teaching UMUC students a backflush costing approach divides the generated revenue by the students taught.

Committed costs will be classified into direct and indirect costs. The direct committed costs include the costs related to the activities of course development and course presentation[13]. Indirect costs (or program related overheads) include the costs of managing the program and the cooperation with UMUC, as well as premised facilities and equipment in as far as they relate to program activities. We have already observed that not all costs incurred are paid from the revenue generated by the program. This applies especially to the indirect costs of program management activities. These activities are conducted out of a tenured position with no additional charges to project generated revenues.

Managed costs will be categorized as quality investment and program extension. Under the title 'quality investment' a number of activities such as course maintenance, faculty meetings, conference visits, and publications are costed. Under 'program extension' we cost activities such as development of new courses and spin-offs.

Note that the categories of committed vs. managed/flexible costs are categories of process rather than of structure. They introduce a dimension of time into an otherwise static cost-analysis. This generates a certain tension as far as the presentation is concerned. For reasons of readability (i.e. to facilitate the comparison of costs among courses) we will include the analysis of direct costs of development and presentation of OMDE 625 and OMDE 626 in the committed costs chapter, albeit strictly speaking the development costs are to be rated as managed costs[14].

The main objective of this section is (i) to determine the costs of the program (building up from the cost of the individual courses); and (ii) to identify the break-even point, i.e. the point which separates committed and managed costs, or the point beyond which additional revenue can be invested into additional program quality or program expansion.

However, there is a certain tension between the two objectives that we will have to deal with: A realistic assessment of costs needs to take into account that not all costs are paid for from the generated revenues; some come from - more or less hidden - subsidies. In a realistic cost assessment subsidies would need to be included. However, when it comes to identifying the level of revenue which could be spent on program quality and program expansion (i.e. the break-even point) we need to take these subsidies out since, by definition, they do not use up the incoming revenue.

3.1.2. Limitations of Activity Based Costing

We have said that the courses are the central cost objects in our analysis. A cost object generates the demand for activities, which in turn cause costs. Activities are undertaken by people, which brings us to human resources as a major cost driver. Activities can be costed by either measuring the time used to complete an activity or by assessing its outcome. If an activity is outsourced its value is determined by the market price. When done in-house it is often difficult to attribute a cost to a specific activity, unless the

[13] 'Course presentation' is a term used by the OUUK for costs related to the activities to conduct a course, while elsewhere the term 'course delivery' is more common.

[14] Since managed costs are those "which can be reduced fairly easily without any immediate major disruption to the objectives or profits of the organization" it is a moot point to which extent the mentioned courses can be considered as managed costs once they are launched. Program extension is asymmetric in terms of flexibility. While adding courses is easy, it is harder to discard them once launched. This adds to an incremental cost drift of which planners must be aware.

institution has introduced the Activity Based Costing approach (ABC), which requires staff to measure their time spent in on a specific activity. If we know the hours spent on an activity we cost by multiplying the number of hours with the salary per hour of the respective staff member. Alternatively one could use a shadow pricing approach, i.e. estimating the costs of the activity if it were to be outsourced. Both methods will be used, albeit not in a purist manner.

There are, beyond the technicalities involved in ABC which make it difficult to implement in a meaningful way, three main reasons why a rigid ABC approach seems inappropriate for contexts like ours. They are:

(i) the divergence of actual costs and notional costs
(ii) inextricable mixture of learning and working
(iii) the mutual shaping of time and task

(i) It may be true that ABC would be ideal to detail the 'costs', but costs may diverge from the expenditure. One close observer of the initial phase of the MDE program remarked during an early faculty meeting that, for his taste, there "is too much adrenaline in the project". By this he meant that anyone involved would be committed to the program over and beyond the normal schedule. Punch card records of core figures like Bernath, Hülsmann, and Zawacki show the high level of overtime during the early phase of the project - especially in 2000.

(ii) In a way all involved were working and learning at the same time. Setting up and teaching in an online Master program was not (and hardly could have been) a routine job for anyone involved. What the above observer wanted to express with 'too much adrenaline' was this mixture of intellectual curiosity, ambition and kudos, which generated this considerable energy that is necessary and characteristic for setting up innovative programs.

(iii) To some extent the time allocated for a task shapes the definition of the task. There is a certain elasticity, which is especially obvious for online courses with a strong element of communication. Communication in an academic online environment is not just batch processing incoming questions, but possibly involves the raising of issues. It is another type of task than moving a heap of sand from A to B. This means that there is a normative element involved which implicitly defines the task: How much time do we allocate to teaching a course?

From the perspective of a costing methodology this means that costs determined by ABC and actual human resource expenditures diverge. However, readers who are interested in questions of transferability may be less interested in an ethnographic description[15] of largely notional costs, but more interested in real expenditures for observable outcomes.

This is why the approach to costing for this case study, while liberally borrowing from both approaches (ABC and shadow pricing), also makes use of the business plan set up for MDE related activities. This plan assigns proportions of time to specific MDE

[15] A detailed description would have to take into account not only the changes of work intensity along a time axis, but also various cross-project support elements. Zawacki for instance, may support other ZEF projects, while other ZEF staff members working outside the MDE project would, in exchange, support MDE related activities. Given that ZEF is quite a beehive in terms of activities, detailed descriptions are more likely to lead to confusion than giving a comprehensive account of the costs.

related tasks. The business plan is negotiated on the basis of experiences. These include time measurements of various kinds including punch cards, samples of ABC records, and counting the number of newly created messages in online conferences. We argue that the normative approach reflected in the business plan and the descriptive approach of ABC allow a triangulation where descriptive elements inform the normative ones, which in turn provide a sound reality check preventing notional costs drifting away from actual expenditure.

3.1.3. Central Human Resource Costs

The main cost driver in such projects is human resources. Bernath is the director of the Center for Distance Education at the Carl von Ossietzky University Oldenburg (ZEF). While originally the center's mission was mainly to cater for students of the FernUniversität living in Lower Saxony, it also includes the promotion of distance education at the university, in outreach activities, or in international cooperation. Hence Bernath's involvement in the MDE program is covered by ZEF's mission, but not paid for from the generated revenue.

Bernath's pre-tax salary of about US$ 6 000 per month[16] is used as the basis of costing his considerable involvement in the program as its initiator, manager, as course developer, and, meanwhile occasionally as instructor. Together with Rubin he initiated the MDE and developed the *Foundations of Distance Education* course (OMDE 601), which became the flagship course of the program and is the portal to all further courses. Both team-taught the pilot version of OMDE 601 setting the standards for the level and quality of interaction - at least for Oldenburg's courses.

The costs related to Bernath's involvement in the MDE are, in our context, largely notional, i.e. they are not paid for out of the revenue generated from the MDE program and therefore not visible in the cash flow (with the exception of some travelling costs). In fact, they represent a subsidy by Oldenburg University to the program. However, not to include these costs merely because they are notional rather actual costs, would be distorting the picture. To quantify them we use an ABC approach as far as managing and course development tasks are concerned, but use a shadow pricing approach when it comes to his role as instructor. Given Bernath's habit of detailed time keeping of his activities we consider the estimates in his case as particularly close.

Hülsmann joined ZEF/UNIOL and was specifically charged to develop and teach courses within the newly launched MDE program. His salary in a full time BAT IIa position (amounting to a gross salary of about US$ 60 200 per annum) is paid for exclusively out of the revenue generated from the MDE program. The business plan requires him to undertake the following activities: (i) course development and teaching (80%), (ii) other activities including support of overall program management, research and publication (20%). The agreement is that Hülsmann teaches six sections per year. We consequently (albeit in slight violation of a pure ABC approach) determine the cost of Hülsmann's teaching activities as US$ 7 000 per section[17].

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[16] The calculated exchange rate dates from 01.01.2001 (1DM = US$ 0.51538). Note that this salary includes annuities and that in Germany taxes are relatively high.

[17] Course development and teaching is generally difficult to separate. However, if we assume that development activities amount to 10% the cost for teaching a section would is to be calculated as: (US$ 60 200 * 70%)/6 = US$ 7 000 (figures are rounded to the hundred).

Table 3-1: Human Resource Costs

US$ 2000	Annual salary	Monthly salary
Bernath	$ 72 300	$ 6 000
Hülsmann	$ 60 200	$ 5 000
Zawacki	$ 22 900 (= $45 800/2)	$1 900 (= $3 800)

While Bernath's focus is on project management, Hülsmann's is on teaching and course development, Zawacki's focus is on technical and faculty support. Zawacki is employed in a full time BAT IIa position. Being a junior staff member this amounts to a gross salary of about US$ 45 800 per annum. He earns half of his salary (i.e. US$ 22 900) through the MDE program. As in the case with Hülsmann, his salary is also paid for exclusively from the revenue generated through the MDE program. Cost allocation of his activities is based on the business plan, which in turn is informed by an ABC approach.

3.2. Cash Flow Analysis

ZEF/UNIOL and UMUC share the revenue generated by students' fees according to the Memorandum of Understanding (MOU). ZEF uses these fees to pay its staff or out-contracting some of the tasks. A substantial chunk of the costs incurred by ZEF can therefore be expected to be reflected in the cash flow movements visible in ZEF's budget position for the MDE. Moreover, since ZEF receives no other funds than these, they provide us with an upper limit of the costs[18].

Therefore in this section we provide an overview of the number of students enrolled, report the thusly generated revenue and, using a backflush costing approach, calculate a benchmark cost per student and per section.

3.2.1. Number of Students

The intention is to determine the costs of a course within the context defined by the arrangements between UMUC and ZEF/UNIOL. Hence, the cost objects in our case are the respective courses. Since the costs for the courses offered by ZEF/UNIOL within the MDE must be recovered in the medium range (and not only in the long range), the cash flow analysis allows us to determine a sort of upper limit of the costs of a course[19]. The cash flow movement is unambiguous: At the end of each term ZEF receives a check paying for the services rendered. The size of the payment, however, depends on two arrays of parameters (i) the status of the student since student from Maryland pay a fee substantially lower than the full fee for out-of-state students; the fee level also depends on special arrangements with other organizations (e.g. with the US military); (ii) students may withdraw and depending on the time they do so, they can recover their fees to varying degrees. Other fluctuations are changes in student fees.

[18] For a more explicit account of the (partly hidden) subsidies cf. section 4.1.1 of this paper.

[19] Cf. previous footnote.

Table 3.2.-1 shows the development of student enrollments in the courses of ZEF/ UNIOL two certificate programs.

Table 3.2-1: Development of Student Enrollment

Year 2000	**Spring**	**Summer**	**Fall**	**Total**
OMDE 601 9040	28	36	31	95
OMDE 601 9041	28	35	32	95
OMDE 605 9040			27	27
OMDE 605 9041			26	26
OMDE 606		12		12
OMDE 624			23	23
Total 2000	56	83	139	278
Year 2001	**Spring**	**Summer**	**Fall**	**Total**
OMDE 601 9040	29	27	29	85
OMDE 601 9041	30	16	29	75
OMDE 601 9042	25			25
OMDE 605	13		23	36
OMDE 606	26	10	14	50
OMDE 624	12		11	23
Total 2001	135	53	106	294
Year 2001	**Spring**	**Summer**	**Fall**	**Total**
OMDE 601 9040	31	29	28	88
OMDE 601 9041	32		26	58
OMDE 605	28			28
OMDE 606	9	15		24
OMDE 624	9			9
OMDE 625	6			6
OMDE 626			6	6
Total 2002	115	44	60	219
Overall total	**306**	**180**	**305**	**791**

The figures presented above are 'students enrolled'. Depending on whether (and when) there are withdrawals where students receive their tuition back, Oldenburg's revenue may be reduced. Hence it seems more appropriate to calculate cost per finally graded rather than cost per enrolled student. For this reason and because for distance educators retention rates are always interesting figures, we present below the numbers of finally graded students juxtaposed to the number of enrolled students. The result is the calculation of a rather high retention rate.

Table 3.2-2: Retention Rates per Term

	No of students		Retention
Terms	**Enrolled**	**Finally graded**	**Rate**
Spring 2000	56	48	86%
Summer 2000	83	73	88%
Fall 2000	139	121	87%
Spring 2001	135	118	87%
Summer 2001	53	48	91%
Fall 2001	106	91	86%
Spring 2002	115	99	86%
Summer 2002	44	42	95%
Fall 2002	60	NA	NA
Total	**791**	**693**	**88%**

For interest, not because it is important for the cost per student calculation we show in the following table a breakdown of the retention rate per course. We see that there are not really obvious variations.

Table 3.2-3: Retention Rates per Course

Year 2000	**Enrolled**	**Withdrawals**	**Finally graded**	**Retention**
OMDE 601 9040/41	190	24	166	87%
OMDE 605 9040/41	53	4	49	92%
OMDE 606	12	1	11	92%
OMDE 624	23	7	16	70%
Total 2000	**278**	**36**	**242**	**87%**
Year 2001	**Enrolled**	**Withdrawals**	**Finally graded**	**Retention**
OMDE 601 9040/41	185	22	163	88%
OMDE 605 9040/41	36	3	33	92%
OMDE 606	50	7	43	86%
OMDE 624	23	4	19	83%
Total 2000	**294**	**36**	**258**	**88%**

3.2.2. Backflush Costing

Table 3.2-4 (second column) describes the cash flow from UMUC to ZEF for its services. These include developing the courses OMDE 601, OMDE 605, OMDE 606, OMDE 624, OMDE 625, OMDE 626 and teaching them. The revenue calculation depends on the status of the student (Marylander, out-of-state, etc.) and the number of students who withdrew early enough to recover their fees. We include the latter factor to indicate the margin of error. The Table shows that a good benchmark figure for the revenue per student for ZEF is about US$ 5 000 and the revenue per finally graded student is about US$ 5 500.

Table 3.2-4: Cost per Student (Backflush)

	Revenue $$	No of students		$$/student	
Terms		**Enrolled**	**Finally graded**	**Enrolled**	**Finally graded**
Spring 2000	$ 27 000	56	48	$ 482	$ 563
Summer 2000	$ 41 300	83	73	$ 498	$ 566
Fall 2000	$ 79 000	139	121	$ 568	$ 653
Spring 2001	$ 77 600	135	118	$ 575	$ 658
Summer 2001	$ 30 700	53	48	$ 579	$ 639
Fall 2001	$ 62 500	106	91	$ 590	$ 687
Spring 2002	$ 65 200	115	99	$ 567	$ 659
Summer 2002	$ 25 400	44	42	$ 578	$ 605
Fall 2002	$ 31 800	60	53	$ 530	$ 600
Total	**$ 440 500**	**791**	**693**	**$ 4 967**	**$ 5 630**

However, the main cost object is the course. Since we know the number of sections taught each term and, assuming that revenue equals costs, we can calculate a 'cost per section' figure for each term. As the table below indicates, the range is between US$ 10 000 to US$ 16 000

Table 3.2-5: Cost per Course (Backflush)

Terms	Revenue $$	Sections	$$/per section
Spring 2000	$ 27 000	2	$ 13 500
Summer 2000	$ 41 300	3	$ 13 800
Fall 2000	$ 79 000	5	$ 15 800
Spring 2001	$ 77 600	6	$ 12 900
Summer 2001	$ 30 700	3	$ 10 200
Fall 2001	$ 62 500	5	$ 12 500
Spring 2002	$ 65 200	6	$ 10 900
Summer 2002	$ 25 400	2	$ 12 700
Total	**$ 408 700**	**32**	**$ 12 600**

We should note that this method underestimates the costs because it does not include the various subsidies the program receives from Oldenburg University. Moreover, since we want the cost-analysis to contribute to the understanding of the important cost drivers, we may question if a backflush approach alone is sufficient.

Rumble (1997) describes backflush costing as follows:

> Some plants manufacture one product or a limited number of products where the costs of each of the products are the same. In such circumstances, it is possible to count the number of products coming out of the plant and then divide this into the total cost of running the plant over the period of the count. Such an approach to costing is called backflush costing. (p. 59)

And he warns that “For most purposes, backflush costing is unrealistic because it only works where there is a single uniform product” (ibid. p.59). This also applies to our case, and makes the backflush method one of limited value.

In order to better understand the cost drivers we need to triangulate the top-down/ backflush approach with a bottom-up/'ingredients approach'. The latter proceeds by first identifying the ingredients used for the services rendered and then costing them (Levin, 1983).

As all chefs know, not all ingredients are equally important. The process of identifying and costing the ingredients is therefore pursued in two steps: (i) In the section on committed costs we list and cost all the necessary ingredients to provide the contracted services, while (ii) in the section on managed or flexible costs we list and cost the extra ingredients, which would enhance the quality of the program or expand it.

3.3. Committed Costs

The courses are basically classified in two main categories: committed costs and managed (or flexible) costs. "Committed costs are the costs that arise from a management decision to supply capacity to perform work." (Rumble, unpublished paper, n.d.) In order to comply with our contractual obligations with UMUC, ZEF built up the necessary capacity to perform the services as required. Hence "Committed costs are those which cannot be eliminated or cut back without a major effect on the enterprise's objectives and profits." (Rumble, 1997, p 30).

The committed costs comprise most importantly the direct course costs, such as course development and course presentation costs of the six courses constituting the two certificate programs offered within the MDE. Indirect costs include program management and overheads, premises, expenses, and equipment costs.

3.3.1. Direct Committed Costs

According to Rumble (1997, p. 55) "… cost objects create the demand for activities, which in turn cause costs". In our case the cost objects are the various courses: To develop and teach them is what ZEF/UNIOL is contracted to do. There are two main classes of activities which we classify under direct committed costs:

1. course development of all the courses of the two certificate programs, and
2. the repeated presentation course of all the courses (sections) during the time under consideration.

Course development and course presentation[20] of the various courses are the activities most directly linked to the cost objects. Also essential to sustain the capacity to deliver these contracted services are management activities. However, since they are not directly related to specific courses they are classified with the 'indirect committed costs'.

In the following we describe the direct costs of all the courses. Before describing the respective costs of the various courses, it seems appropriate to make a general remark about the course development model used, and on the different character of development costs as distinct to presentation costs.

The courses offered through ZEF/UNIOL (and this probably also applies to other courses offered within the MDE) have the form of a virtual seminar. Such courses are quite

[20] We treat the terms 'course presentation', 'course delivery' or even 'teaching a course' as meaning the same thing. They include all the recurrent activities of running the various classes or sections.

different from typical distance education courses (cf. most courses offered by the OUUK or the German FernUniversität) by emphasizing process rather than product. Not new course material (i.e. products) is developed but, on the basis of already published textbooks, discussion and communication processes are initiated which, to some extent, simulate, albeit in an asynchronous format, the traditional seminar process. This means that development costs turn out to be rather low since they include little more than the development of a syllabus and the drafting of a number of main topics. On the other hand, communication processes can be expected to be comparatively intense and therefore costly. They often involve the authors of the main textbooks as 'visiting experts'. Besides the honoraria the sales of their books, as core textbooks in the respective course are an additional incentive for the experts. Possibly even more important is the motivation to engage in an intensive dialogue with a number of keen readers of their books. This remark should prepare especially those coming from a traditional course development model to understand the substantially different model of course development and course presentation, leading to a different composition of fixed and variable costs, i.e. a different cost structure, with important implications, for instance with respect to scale economics[21].

A further remark draws attention to the character of development costs. In course development models like those of the OUUK, courses are planned for presentation over a scheduled number of years - the shelf life of a course. The high development costs of such courses can only be recovered if large audiences are reached. To some extent, overall enrollments can be increased by offering the course over a number of years. However, there are course development models where courses are not developed for a specified shelf life. This does not mean that one's eyes are closed to the accelerating obsolescence of knowledge, but that courses can be up-dated and maintained 'on the fly'. In this case it is difficult to charge the development costs of a course to a specific time period or to a specific presentation. In the absence of accepted costing conventions in this regard, it may not be advisable to charge development costs to individual course presentations along with other overheads.

Aside from this problem development costs are often quite context dependent and historically accidental. The development costs of OMDE 601 are rather low since much of the course development was already completed within the preparation of the *Virtual Seminar*. The development costs of the *Virtual Seminar* in turn were not so much driven by a detailed budget plan, but by the size of the AT&T grant, which stood in the beginning of all these activities. In such cases the available funds drive what you do and costing is an *ex post* exercise.

We can therefore expect development costs to vary considerably. This depends on (i) historical contingencies but also on (ii) institutional arrangements. If course development is outsourced it may be less costly. However, in-house development may have substantial advantageous spin-offs in term of capacity building not being immediately visible if one only compares the figures. We will come back to this.

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[21] The remark may under-emphasize the proportion of pre-preparation in the seminar process. In fact, if measured in word counts about two thirds of the postings from faculty are pre-prepared as compared to one third generated during the communication process. However, scale economies are based on high differentials between high fixed costs as compared to low variable costs per student. This difference being considerably less substantial in 'virtual seminar' type courses suggest lower potential for scale economies.

In the following sections we describe the direct costs of development and presentation for all the courses of the *Foundations in Distance Education* and *Distance Education in Developing Countries Certificates*.

3.3.1.1. OMDE 601 *Foundations of Distance Education*

The cost object, we said is a course, e.g. OMDE 601. A cost object generates demand for activities, which in turn cause costs. Developing a course and teaching a course are the two main types of activities we classify as direct costs. We will begin with analyzing the costs of OMDE 601.

Course development

The pedagogical model of the courses offered by ZEF/UNIOL is that of an asynchronous seminar. Like in a traditional seminar in higher education you read seminal texts and discuss them, but unlike in a traditional seminar, you discuss them in an asynchronous manner.

The fact that the discussion is based on seminal texts of the field means that generally course material has not been developed from scratch. This has major implications for course development. Course development then consists of creating a syllabus and writing a set of related main topics to structure the discussion. We should also expect such a course development model to shorten 'time-to-market' and reduce development costs considerably.

Two particularities of OMDE 601 should be kept in mind. First, there is the question of where/when costing should begin. As indicated earlier part of the development of OMDE 601 can be considered a spin-off of the *Virtual Seminar* (VS). We regard this as 'sunk costs' and ignore it. Only time and resources directly attributable to the development of the *Foundations* course are included.

Secondly, the development costs of OMDE 601 are to a large extent not reflected in cash flow movements because most of the developmental efforts can be attributed to Bernath and Rubin, program directors of the MDE. However, by taking an 'activity based costing' (ABC) approach we can quite precisely identify the proportion Bernath's work time invested in the course's development. Bernath estimates that for appr. 3.5 months (from 10.15.1999 to 01.31.2000) he worked half of his time to develop OMDE 601. Based on our benchmark costs for human resources in Table 3.-1, we calculate: (US$6 000 * 3.5)/2 = US$10 500.

The syllabus was drafted in cooperation with Rubin from UMUC and Holmberg and Peters as external consultants. Note that the $2 600 payment to each of the external consultants is the only cost, which is directly visible as a cash flow movement.

Table 3-2: Development Costs of OMDE 601

Cost drivers	**US $$**
Development (Bernath)	$ 10 500
Development (Rubin)	Not included
External consultant (Holmberg)	$2 600
External consultant (Peters)	$2 600
Total cost of development	**$15 700**

Note also that the amount of $10 500 is a notional cost (implicit subsidies to the program by Oldenburg University) and not deducted from the incoming revenue. The costs attributable to the activities of Rubin of UMUC are ignored here since only costs incurred by ZEF/UNIOL are included. If we were to include Rubin with a similar sum as Bernath development costs would amount to about 25 000 US$.

Course Presentation

We mentioned that the ZEF/UNIOL certificate programs follow the pedagogical model of an asynchronous seminar. While course development can be expected to be quicker and less costly[22], course presentation is likely to be more labor intensive.

Presentation costs comprise the cost of the lead faculty, the visiting expert and, possibly, some technical support or a teaching assistant. There are different types of faculty involved in teaching OMDE 601: Bernath, Rubin, Hülsmann, Beaudoin are lead faculty, Holmberg, Peters and Moore are visiting experts, Zawacki provides faculty and experts with technical support.

Bernath and Rubin, who developed the course, taught the first run. All costs attributable to Rubin are ignored since they are not incurred by ZEF/UNIOL (with the notable exception of Fall 2000). All costs attributable to Bernath's involvement are notional costs and therefore not visible as cash flow movement. However, the pilot run of a course always includes elements of development and is therefore more labor intensive than later presentations. If we estimate the cost of Bernath using an ABC approach we come to $10 500. Bernath, an unusually keen timekeeper of his activities, estimates that during the first course presentation (February to May 1999) he allocated about half of his time to teaching this course. Hence, we calculate: $6 000 * 3.5/2 = US$ 10 500 (for two sections) and means a cost per section of about US$ 5 000.

The pilot presentation of a course is likely to be more expensive (time consuming) than later runs of the same course. Hence we later use a 'shadow pricing' approach to determine Bernath's costs for teaching OMDE 601. It turns out that shadow pricing leads to similar figures. Shadow pricing means to approximate costs by prices paid in the market. Benchmarks for orientation here are the prices UMUC offers for teaching one course section, which is about US$ 4 000. Another benchmark is the fact that the HSP III granting body[23] accepted the figure of 10 000 DM for course development and 10 000 DM (or US$ 5 000) for teaching a section in the afore mentioned HSP III application. Accepting these figures indicates that the estimated costs were considered as within the range of market prices for such services.

To increase the readability of the tables below we include a short note on the varying needs for technical and faculty support. The Table below includes a synopsis of the costs of faculty support in all *Foundations Certificate* courses[24]. We observe that the

[22] To illustrate the different orders of magnitude: Hülsmann (2000, p. 89) identified the development costs for an OUUK course as GBP 660 000, which equals (deflated) US$ 1 247 522 for 220 SLH or about US$ 850 000 for 150 SLH as compared to US$ 15 000 and US$ 25 000 for the 150 SLH of the OMDE 601. This means that the development cost for the OUUK course is about 50 times as high as for OMDE 601. However these development costs are spread over about 8000 students!

[23] Cf. section 2.2 above

[24] Hülsmann teaches the additional courses OMDE 625 and OMDE 626. Due to the experiences in teaching OMDE 601 and OMDE 606 he has largely outgrown further need for technical or faculty support.

need for support varies according to two parameters: (i) It diminishes with experience; and (ii) is higher for external faculty. The first point illustrates some economies of experience: moving from an initial situation, in which faculty and technical support is essential, to a situation, in which it can be increasingly relaxed. The second point illustrates that in-house capacity building is more effective.

Table 3-3: Technical and Faculty Support Costs

Terms	OMDE 601	OMDE 601*	OMDE 605	OMDE 606	OMDE 624	Total	Hours per week and sections	Percentage
Spring 2000	$ 1 500					$1 500	4	20%
Summer 2000	$ 400			$ 400		$ 800	2+2= 4	20%
Fall 2000	$ 800		$ 3 400		$ 3 400	$ 7 600	2+9+9=20	100%
Spring 2001	$ 400	$ 2 300	$ 2 300	$ 400	$ 2 300	$ 7 700	2+6+6+6=20	100%
Summer 2001	$ 400			$ 400		$ 800	2+2=4	20%
Fall 2001	$ 800	$ 2 300	$ 2 300		$ 2 300	$ 7 700	2+6+6+6 = 20	100%
Spring 2002	$ 800	$ 1 500	$ 1 500		$ 1 500	$ 5 300	2+4+4+4 =14	70%
Summer 2002	$ 400					$ 400		10%

*Calculations are based on the following assumptions: Zawacki works 50% of his time for the MDE. On this basis his monthly cost to the MDE should not exceed much US$ 1 900 (see Table 3.-1: Human resource costs). Furthermore we take the length of the Spring and Fall terms to be 4 months (15 weeks of the semester including a pre-week) and the Summer term to be 2 months (7 weeks including a pre-week). To illustrate how the calculation works take the first figure: the Spring term extends over 4 months and Zawacki works 20% of the time allocated to the MDE to support the two sections in Spring 2000: US$ 1 520= US $ 1 900 * 20% * 4. Rounded to the hundred this amounts to US$ 1 500.*

The following Tables (3.4 to 3.6) describe the presentation costs included in this cost-analysis over three years (Spring 2000 until Fall 2002).

Table 3-4: Presentation Costs of OMDE 601 in 2000

	Spring 2000	Summer 2000	Fall 2000
Name of lead faculty	Bernath, Rubin	Hülsmann, Rubin	Hülsmann
Number of sections	2	2	2
Lead faculty	$ 10 500[a]	$ 14 600[c]	$ 14 600
Team teaching	NN	$ 5 000	
Visiting expert 1	$ 2 600	$ 2 200	$ 2 200
Visiting expert 2	$ 2 600	$ 2 100	$ 2 200
Technical and faculty support	$ 1 500[b]	$400[d]	[e]
Total cost of presentation	**$ 17 200**	**$ 24 300**	**$ 19 000**
Number of students	56	71	63
Average income per student	$ 481	$ 498	$ 568
Revenue	$ 27 000	$ 35 400	$ 35 800
Surplus	$ 9 800	$ 11 100	$ 16 800

*a: Bernath at 3.5 months at 50% of his time. b: Zawacki works two hours per week per section over 4 months. This is 20% of his allocated time to the MDE. (We calculate: $1 900 * 20% * 4 = $ 1 520.) The costs of Rubin are not incurred by ZEF hence not included in this calculation. c: Hülsmann teaches 70% of his time in six sections per year. d: Zawacki works one hours per week per section over 2 months. This is 10% of his allocated time to the MDE. (We calculate: $1 900 * 10% * 42=$ 380. All values are rounded to the nearest hundred.) e: The support needed by Hülsmann falls below one hour per week.*

Table 3-5: Presentation Costs of OMDE 601 in 2001

	Spring 2001		**Summer 2001**	**Fall 2001**	
Name of lead faculty	Hülsmann	Beaudoin	Bernath	Hülsmann	Beaudoin
Number of sections	2	1	2	1	1
Lead faculty	$ 14 600	$ 6 200	$ 9 600[b]	$ 7 300	$ 5 700
Visiting expert 1	$ 2 100	$ 1 100	$ 2 000	$ 900	$ 1 100
Visiting expert 2	$ 2 100		$ 2 000	$ 900	
Technical and faculty support		$ 2 300[a]	$ 400		$ 2 300
Total cost of presentation	**$ 18 800**	**$ 9 600**	**$ 14 000**	**$ 9 100**	**$ 9 100**
Number of students	59	25	43	29	29
Average income per student	$ 575	$ 575	$ 580	$ 590	$ 590
Revenue	$ 33 900	$ 14 400	$ 24 900	$17 100	$ 17 100
Surplus	$ 15 100	$ 4 800	$ 10 900	$ 8 000	$ 8 000

a: The level of technical and faculty support for Beaudoin is higher for two reasons: Beaudoin needs support at a distance since he teaches in this environment for the first time. (Support requirements fall in the subsequent spring and fall semesters 2002[25].) b: Here we determine the notional cost incurred by Bernath's teaching by shadow pricing and arrive at 10 000 DM per section, which is about the price paid when teaching is out-contracted. The variations in the honoraria for the experts are partly due to exchange rate variations partly die to variations in the task (e.g. number of assignment marked).

Table 3-6: Presentation Costs of OMDE 601 in 2002

	Spring 2002		**Summer 2002**	**Fall 2002**	
Name of lead faculty	Hülsmann	Beaudoin	Bernath	Hülsmann	Beaudoin
Number of sections	1	1	1	1	1
Lead faculty	$ 7 300	$ 4 500	$ 4 800	$ 7 300	$ 4 500
Team teaching					
Visiting expert 1	$ 900	$ 1 000	$ 1 100	$ 900	$ 1 000
Visiting expert 2	$ 900		$ 1 100	$ 900	
Faculty support					
Technical support		$ 1 500	$ 400		$ 1 500
Total cost of presentation	**$ 9 100**	**$ 7 000**	**$ 7 400**	**$ 9 100**	**$ 7 000**
Number of students	31	32	29	25	27
Average income per student	$ 567	$ 567	$ 567	$ 567	$ 567
Revenue	$ 17 600	$ 18 100	$ 16 400	$ 14 200	$ 15 300
Surplus	$ 8 500	$ 11 100	$ 9 000	$ 5 100	$ 8 300

Both in the Spring and Fall terms two sections were taught, one by Hülsmann and one by Beaudoin. In the shorter more intense Summer term Bernath taught one section.

The tables above allows the following observations:

(i) Costs per section stabilize at about US$ 9 000 per section. The average remaining revenue per section is about US$ 16 000, suggesting an expected surplus of US$ 7 000.

[25] Cf. Table 3-3

(ii) Out-contracting teaching appears to be more cost-efficient as compared to doing it in-house, especially if technical and faculty support requirements diminish. This might, however, be a superficial consideration since it neglects the implicit capacity building when teaching is done in-house.

3.3.1.2. OMDE 605 *New and Emerging Media in Distance Education*

During the time under consideration this course was one of the *Certificate Foundations in Distance Education's* core courses. It was developed and taught by Hasebrook, a former member of the Bank Academy in Frankfurt. He became CEO of efiport AG, which offers eLearning solutions for the banking and financial services industry. It is mainly due to his lack of time that Hasebrook was not able to continue teaching OMDE 605. However, the course did not vanish without traces. Based on a slightly modified syllabus the course will return as OMDE 620, an elective course, under the title *Learning and Training with Multimedia* in Spring 2003.

Cost of development

The figures of development costs need some interpretation. The course is organized around a costly WBT, which had been developed for a different purpose. This again illustrates that development costs are to some extent historically accidental. Hasebrook was able to bring the WBT to the course without having to recover the development costs. Hence we can treat these costs as 'sunk costs'. Only the adaptation costs for a new (e.g. English language) environment were charged to the project[26].

Table 3-7: Cost of Development of OMDE 605

Development costs	**Summer 2000**
Development (Hasebrook)	$ 5 100
WebTycho course-room development	$ 1 500[a]
Total fixed	**$ 6 600**

a: Zawacki worked 20% of his time for four months on this.

The reason why the Bank Academy was quite interested in cooperation is complex, related to public-private partnership and issues of capacity building. Reasons may include that cooperation at university level, especially with a major distance teaching university, conveys some prestige to both the institution and the staff involved and whose leading member in this case was given faculty status at UMUC.

Cost of presentation

The Table below describes the presentation costs. The course was taught by Hasebrook and his team.

[26] The WBT, which was costly to develop and adapt will be used in OMDE 620, the elective course which replaces OMDE 605.

Table 3-8: Cost of Presentation of OMDE 605

Presentation costs	**Fall 2000**	**Spring 2001**	**Fall 2001**	**Spring 2002**
Name of lead faculty	Hasebrook and team [a]	Hasebrook and team [a]	Hasebrook and team [a]	Hasebrook and team [a]
Number of sections	2	1	1	1
Faculty + team	$ 8 900	$ 4 500	$ 4 600	$ 4 600
Technical and faculty support [b]	$ 3 400	$ 2 300	$ 2 300	$ 1 500
Total cost of presentation	**$ 12 300**	**$ 6 800**	**$ 6 900**	**$ 6 100**
Number of students	53	13	23	28
Average income per student	$ 568	$ 575	$ 580	$ 590
Revenue	$ 30 100	$ 7 400	$ 13 300	$ 16 500
Surplus	$ 17 800	$ 600	$ 6 400	$ 10 400

a: The lead faculty was Hasebrook . He employed teaching assistants to deal with routine issues. b: The figures for technical support are based on Table 3-3, column 3. Note that Zawacki earns only 50% of his salary within the MDE.

The teaching of OMDE 605 is outsourced and clearly visible in the cash flow. The payment was made to Hasebrook on behalf of the Bank Academy, who employed and paid his team.

Technical and faculty support was done in-house and is determined by ABC approach. Table 3-3 (column 3) indicates how the need for support decreases when, over time, experience is gained. Need for technical and faculty support dropped from 45% in Fall 2000 to 20% in Spring 2002.

Table 3-8 shows that costs of presentation are rather constant. This is to be expected because the only varying cost element impacting costs incurred by ZEF/UNIOL are the decreasing support requirements. Surplus clearly depends on course enrollments. In Spring 2001 course enrollment was low (13 students only) thus bringing surplus down. The slump in student enrollment reflects problems in the pilot run of the course in the fall semester 2000. After spring 2001 enrollment and consequently revenue picked up.

3.3.1.3. OMDE 606 *Economics of Distance Education*

The course *Economics of Distance Education*[27] is a core course within the MDE program and part of both certificates offered by ZEF/UNIOL, the *Certificate Foundations of Distance Education* and the *Certificate Distance Education in Developing Countries.*

Cost of development

The course OMDE 606 was developed by Hülsmann. In hindsight we clearly distinguish three periods of development: (i) the three months between October and December 1999; (ii) the months before the Summer term 2000; and (iii) the Summer term.

(i) During October to the end of 1999 Hülsmann, still working from the UK, was employed at half of a BAT IIa position (at that time 110 000 DM per annum, or US$

[27] For several reasons the course has been renamed “Management of Distance Education: Cost-analysis”. Although there is an element of general economics (e.g. a discussion of Human Capital Theory) the focus is on costing distance education institutions and technologies.

56 700). His main task during this period was developing a syllabus for OMDE 606. Half of monthly salary for three months amounts to: US$ 7 000[28].

(ii) As of January 2000 Hülsmann was fully employed by ZEF. During the 4.5 months of the Spring term an ABC breakdown of Hülsmann's tasks gives the following picture: Hülsmann takes the UMUC WebTycho tutoring course to prepare for teaching within the MDE (10% of time); he acquaints himself with the content and teaching processes of OMDE 601 (10% of time); he is involved in general management tasks related to the MDE within ZEF (10% of time). In the remaining 70% of his time he continues the development of OMDE 606. We calculate: [($60 200/12)* 70% * 4.5]= $15 800.

(iii) The third development effort was undertaken in the Summer term while teaching the OMDE 606 pilot version. The boundaries between course development and teaching are blurred. We try to arrive at a reasonable estimate by triangulating an ABC estimate of the time with an analysis of the work during the Summer term. Teaching the two courses OMDE 601 and 606 occupied 90% of Hülsmann's time; it was distributed over teaching two sections OMDE 601, one section OMDE 606 and further development of OMDE 606. (General management support did not exceed 10%.) The break down of the time for the various tasks can be illustrated by dividing a 40 hour week into the different tasks. If we subtract the 10% for general management we have 36 hours. From this we assign 16 (or 2 x 8 hours) to teaching OMDE 601. The remaining 20 hours we divide evenly between OMDE 606 course development and course teaching. In this case we calculate as contributing to course development in this term: [(U$ 60 200/12)* 25% * 3]= US$3 800[29].

Table 3-9 draws the development costs together.

Table 3-9: Cost of Development of OMDE 606

Costs of development	**1999**	**2000**
Development (Hülsmann)	$ 7 000[a]	$ 19 600[b]
WebTycho course-room (Zawacki, Hülsmann)		$ 400[c]
Total costs of development		**$ 25 700**

a: cf. (i) b: cf. (ii) and (iii): $15 800 + $3 800 = $19 600; c: cf. Table 3-3

Cost of presentation

Table 3-10 describes in some detail the costs of presentation. As in OMDE 601 an attractive feature of OMDE 606 was the 'visiting expert'. As in the *Foundations* course the authors of the key textbooks (Rumble, 1997; Bates, 1995) participated as visiting experts in one of the modules. Since the outset, Rumble, a leading expert in the field of costing distance education, participated and became quite popular with students due to his swift, elaborate responses, which reflected his experience in the field. For Bates, whose name is connected with costing educational technologies, it was not always possible to participate, but during those times students were able to benefit substantially from his experience.

[28] [(US$ 56 700/2) / 12)]*3= US$ 7 000

[29] If we triangulate this attribution of costs with the costs on the business plan, where Hülsmann teaching a section costs one sixth of 70% of his annual salary, teaching costs would be severely underestimated at $3 800.

Table 3-10: Cost of Presentation of OMDE 606

Costs of presentation	Summer 2000	Spring 2001	Summer 2001	Fall 2001	Spring 2002	Summer 2002
Name of lead faculty	Hülsmann [a]	Hülsmann	Hülsmann	Hülsmann	Hülsmann	Hülsmann
Number of sections	1	1	1	1	1	1
Lead faculty (Hülsmann [a])	$ 7 300	$ 7 300	$ 7 300	$ 7 300	$ 7 300	$ 7 300
Visiting expert (Rumble [b])	$ 730	$ 690	$ 660	$ 680	$ 700	$ 770
Visiting expert (Bates [c])		$ 670			$ 700	
Technical and faculty support (Zawacki)	$ 400	$ 400	$ 400			
Total cost of presentation	**$ 8 430**	**$ 9 060**	**$ 8 360**	**$ 7 980**	**$ 8 700**	**$ 8 070**
Number of students	12	26	10	14	9	15
Average income per student	$ 498	$ 575	$ 580	$ 590	$ 567	$ 567
Revenue	$ 5 900	$ 14 900	$ 5 700	$ 8 200	$ 5 100	$ 8 500
Surplus	- $ 2 530	$ 5 840	- $ 2 660	$ 220	- $ 3 600	$ 430

a: Hülsmann was lead faculty in this course over the period under consideration; b: Rumble did participate in all course presentations; c: Bates participated in Spring 2001 and in Summer 2002.

So far OMDE 606, although a core course of the program, has not attracted too many students. Given that the course generally received quite good ratings it has been conjectured that the low level of enrollment may be due to the element of mathematics required for this course, and often poses a barrier for students. However, because this is a core course students will eventually have to enroll, and it is expected that participation will be above the break-even point for the courses to come.

3.3.1.4. OMDE 624 *Student Support in Distance Education*

This course moved into the position of a core course in 2002[30], which reflects the strong emphasis given to student support and has its roots in the history of ZEF.

Cost of development

Bernath first asked Tait to write a syllabus for a student support course, hoping that he would eventually also be won over to teach the course. It was Tait who brought Brindley, a Canadian distance educator and clinical psychologist, to the team. Together they developed the syllabus, however, Tait had to refuse to teach the course, not least due to time constraints, while Brindley eventually agreed to teach it.

[30] It replaces OMDE 605, which is no longer offered in its original form because Hasebrook and his team are no longer available. This is a telling point as far as scalability is concerned: In the context of the Foundations certificate, changing the lead faculty has always induced some major changes. This indicates that for the time being the course design is not geared to full scalability. Changes in lead faculty in OMDE 601 proved straightforward as long as the faculty involved operated at arm's length (e.g. when shifting from Bernath to Hülsmann), whereas changes proved to be more profound when teaching was outsourced and/or new visiting experts had to be integrated (e.g. Beaudoin with Moore as visiting expert). This suggests that for the time being lead faculty in these courses are more than instructors who tutor a largely pre-prepared course.

Table 3 -11: Cost of Development of OMDE 624

Costs of development	Summer 2000
Development (Brindley and Tait)	$ 5 172
WebTycho course-room (Zawacki [a])	$ 1 520
Total fixed	**$ 6 695**

a: Zawacki worked about four months at 10% of his time.

The development costs in Table 3-12 are partly based on cash flow evidence, partly on ABC estimates. Brindley and Tait were paid a lump sum of US$ 5 172 for the development of the syllabus, the draft of the introductory text for the modules, and an elaborated reading list.

The costs attributed to Zawacki's role in the development of OMDE 624 is based on the assumption that he worked for about four months at 10% of his time for this course (US$ 1 520 = 4*US$ 3 800 * 10%; cf. Table 3-1). Part of this task included putting the material provided by the subject experts into the appropriate format for the WebTycho learning platform, editing the syllabus, and making the readings electronically available[31].

Cost of presentation

As is the case for most faculty the learning platform WebTycho and, indeed online teaching in general, are a new experience. Brindley received substantial technical as well as faculty support on two levels: While Zawacki helped with the technical issues, Walti helped with issues more directly related to the course.

Table 3 -12: Cost of Presentation of OMDE 624

Costs of presentation	Fall 2000	Spring 2001	Fall 2001	Spring 2002	Fall 2002
Lead faculty (Brindley [a])	$ 4 481	$ 5 110	$ 4 567	$ 4 656	$ 5 150
Faculty support (Walti)		$ 500	$ 600	$ 600	$ 600
Technical support (Zawacki)	$ 1 520	$ 1 520	$ 1 520	$ 1 520	$ 1 520
Total cost of presentation	**$ 6 001**	**$ 7 130**	**$ 6 687**	**$ 6 776**	**$ 7 270**
Number of students	23	12	11	9	21
Average income per student	$ 568	$ 575	$ 590	$ 567	$ 567
Revenue	$ 13 064	$ 6 900	$ 6 490	$ 5 103	$ 11 907
Surplus	$ 7 063	- $ 230	- $ 197	-$ 1 673	$ 4 637

a: the fluctuating costs for Brindley's teaching is largely due to currency fluctuation.

The course presentation costs in Table 3-12 are partly based on cash flow evidence, partly on ABC estimates, as is the case with the development costs. Brindley (as lead faculty) and Walti (as teaching assistant) were paid a lump sum. The costs for Zawacki are based on ABC estimates assuming an investment of four months at 10% of his time.

3.3.1.5. OMDE 625 *National and International Policies for Distance Education in Developing Countries*

The development of a further certificate program reflected the interests of Hülsmann, who had worked over a decade in developing countries and earned a Master's degree in

[31] Copyright clearance was done by UMUC.

Education and International Development (with a specialization in Distance Education). From the outset of his work with ZEF he signaled his interest to develop such a certificate. Given the increasingly global reach of distance education, its role in development cooperation, and the profile of MDE students as future program managers, it was assumed that such courses could be an attractive option within the MDE program.

It was then decided to develop the *Certificate Distance Education in Developing Countries*. The certificate would, like all the graduate certificate programs be offered within the MDE program, consist of four courses: two general courses considered relevant to the issue and two specialized courses.

(1) *Foundations of Distance Education* (OMDE 601),
(2) *Economics of Distance Education* (OMDE 606),
(3) *National and International Policies for Distance Education in Developing Countries* (OMDE 625), and
(4) *Technologies for Distance Education in Developing Countries* (OMDE 626).

On the ZEF web site you find the following description of the program:

> While OMDE 601 (*Foundations*) and OMDE 606 (*Economics*) lay the foundations for the certificate program, OMDE 625 (*Policies*) and OMDE 626 (*Technologies*) specifically address the respective issues of distance education in developing countries.
>
> The certificate program is intended for students with a specific interest in development issues. Especially the two specialized courses on distance education in developing countries may attract students from development organizations, including international institutions, national agencies, and non-governmental organizations working in the context of education and training. They may also be of interest of educators and/or educational planners who themselves work in developing countries in the field of education or educational planning, and wish to explore what distance education has to offer.
>
> The two courses specialized on developing countries (OMDE 625 and OMDE 626) complement each other. While OMDE 625 is primarily intended as an exercise in stocktaking of distance education in developing countries. (What was it used for? Which audiences were reached? Did it work?) OMDE 626 is more explorative in nature and examines the potential and impact of information and communication technologies (ICT) on distance education in the context of developing countries.[32]

In the following we cost the two specialized courses and thus complete our cost-analysis of the courses developed and managed by ZEF/UNIOL.

Cost of development

The first steps to develop the *Certificate Distance Education in Developing Countries* took place in Fall 2000. It had to be decided how many courses should be newly developed and which existing courses, if any, should be included in such a certificate program. We felt that the *Foundations* and the *Economics* course would serve as a good

[32] This quotation of the Website is slightly edited.

underpinning for the two newly developed courses. The one looks at evidence on how distance education was being used in developing countries and how cost-effective it had proven to be, the other focuses on ICT and its impact on the changing distance education landscape in developing countries.

We have already mentioned that course development within the MDE program is not developing new material from the scratch (i.e. a completely new series of study guides). It means writing a syllabus, deciding on the readings, and drafting the introductory main topics for the various modules/sections of the course. The overall concept of the two courses was discussed between Hülsmann and Perraton, a renowned expert in the field and Director of the International Research Foundation for Open Learning (IRFOL) in Cambridge.

The costs of the various contributions are determined by different methods. Perraton received a honorarium of about US$ 2 400, the costing of Hülsmann's contribution relies on a ABC approach and the ZEF business plan. According to this Hülsmann spent at about 10% on developing the certificate program and OMDE 625. Hence we can determine the development cost attributable to Hülsmann with 12 months x 10% x US$ 5 200 = US$ 6 240.

Table 3 -13: Development Costs of OMDE 625

Cost drivers	2001	US$
Development	Hülsmann	$ 6 240
Development	Perraton	$ 2 431
Total		**$ 8 671**

Due to the large amount of material that had to be looked at and classified accordingly, the development work for OMDE 625 and OMDE 626 cannot be neatly separated. Moreover, as a spin-off from this course development work Hülsmann developed a short (six week) course *Professional Seminar Distance Education in Developing Countries*, which was taught September/October 2002.

Cost of presentation

As in almost all courses in the *Certificate Foundations of Distance Education* the new certificate program made use of the idea to invite the author(s) of the key textbook(s) as visiting expert(s) into the course. Perraton (2000) was selected as the textbook for this course such that the author's presence was an element of quality well appreciated by the students.

Table 3 -14: Cost of Presentation of OMDE 625

Costs of presentation	Spring 2002
Lead faculty (Hülsmann)	$ 7 300
Visiting expert (Perraton)	$ 728
Total cost of presentation	**$ 8 028**
Number of students	5
Average income per student	$ 567
Revenue	$ 2 835
Surplus	- $ 5 187

The course only attracted a few students, which meant a completely different type of situation than in courses such as OMDE 601. The larger number of learners means that the dialogue among peers sustains communication even if the lead faculty temporarily might have to take the back seat. For courses with less than ten students a different teaching and learning design needs to be developed. The core part of this design is the idea of a project. Each participant negotiates his/her project (which could be compared to a learning contract) and develops it through different steps: an annotated bibliography, a project conference, developed by the 'project owner' and for which introductory topics are drafted, and thereafter discussed at a set time with faculty and peers. The provided feedback is then integrated into the final project paper.

The example of a project as a core element of the course illustrates that much development work might still have to be done during the pilot run of the course.

3.3.1.6. OMDE 626 *Technologies for Distance Education in Developing Countries*

OMDE 626 is the final course within the *Distance Education in Developing Countries Certificate*.

Cost of development

OMDE 626 was developed by Hülsmann and the main efforts took place in 2002. Development work continued until and during the pilot course in Fall 2002. Hence the whole time set aside for course development in 2002 Hülsmann worked to prepare OMDE 626. Hence we have again: 12 x 10% x US$ 5 200 = US$ 6 240.

Table 3-15: Development Costs of OMDE 626

Cost drivers	**2002**	**US$$**
Development	Hülsmann	$ 6 240
Total		**$ 6 240**

Cost of presentation

Though it is not required to take the courses of the *Certificate Distance in Developing Countries* in a specific sequence the inner logic of the program suggests to take them according to the sequence of the course numbers. We therefore could not expect to have many more students in OMDE 626 than in OMDE 625. Nevertheless, we decided to run the course although it was clear that the course would not break - even if we only calculated the direct course costs. For this reason we deviated from the inviting a visiting expert.

Table 3-16: Cost of Presentation of OMDE 626

Costs of presentation	**Spring 2002**
Lead faculty	$ 7 300
Total cost of presentation	**$ 7 300**
Number of students	5
Average income per student	$ 567
Revenue	$ 2 835
Surplus	- $ 4 465

Despite the low number of enrollments the courses of the *Certificate Distance Education in Developing Countries* have attracted so far, the program management is still convinced that in the context of borderless education, a growing demand for education in developing countries, and the role distance education can play in this context that the certificate program will eventually attract a larger audience.

If we review the costs of development and the costs of presentation we observe two things: (i) With the exceptions of OMDE 601, and OMDE 606 developing a course costs about US$ 7 000. (ii) Presenting one section costs about the same as developing a course: US$ 7 000. The higher development costs of OMDE 601 can be explained by the fact that to a certain degree program development and course development activities merged. The higher costs of course development of OMDE 606 can be explained by pointing out that capacity building merged with course development: Developing OMDE 606, getting initiated to online teaching and acquainted with the specific learning platform were processes not neatly separable.

The fact that the fixed capital costs of course development and the largely semi-variable costs of presentation are on the same level re-affirms our case that this model of distance education has a far lower potential for scale economies than 'traditional distance education' (e.g. OUUK type). This observation however, does not imply that the model is not profitably scalable.

3.3.2. Summary of Direct Committed Costs

Table 3-17 presents a synopsis of all direct committed costs. Although in our previous presentation we included the development and presentation costs of OMDE 625 and OMDE 626 for reasons of comparability, they are strictly speaking flexible or managed costs and hence ignored in this summary.

It has already been observed that presentation and development costs do not diverge to the extent that has been observed for some traditional multi-media distance education courses (e.g. OUUK, cf. Hülsmann 2000, p. 82 ff.). Tables in this section show that development costs vary by a factor of only one to three. This means that there is little scope for traditional scale economies.

Moreover, there is a question of depreciating the development costs. In this case we have decided to depreciate over the three years under consideration. This introduces an element of arbitrariness since there is no definitive shelf life for a course. Courses are continuously updated and improved - a process greatly facilitated by the electronic text-based format. In the Table below we have calculated the subtotal of presentation costs and the surplus, ignoring the development costs which, after some time, can be treated as 'sunk costs', i.e. costs no longer relevant for management decisions.

Table 3-17 : Costs and Revenue: Synopsis

		2000	2001	2002	Total
Development	OMDE 601	$ 5 233	$ 5 233	$ 5 233	$ 15 699
	OMDE 605	$ 2 200	$ 2 200	$ 2 200	$ 6 600
	OMDE 606	$ 8 633	$ 8 633	$ 8 633	$ 25 899
	OMDE 624	$ 2 225	$ 2 225	$ 2 225	$ 6 675
Subtotal development costs		$ 18 291	$ 18 291	$ 18 291	$ 54 873
Presentation					
OMDE 601	Cost	$ 60 500	$ 60 600	$ 39 600	$ 160 700
	Revenue	$ 98 200	$ 107 400	$ 81 600	$ 287 200
	Surplus	$ 37 700	$ 46 800	$ 42 000	$ 126 500
OMDE 605	Cost	$ 12 300	$ 13 700	$ 6 100	$ 32 100
	Revenue	$ 30 100	$ 20 700	$ 16 500	$ 67 300
	Surplus	$ 17 800	$ 7 000	$ 10 400	$ 35 200
OMDE 606	Cost	$ 8 430	$ 25 400	$ 16 770	$ 50 600
	Revenue	$ 5 900	$ 28 800	$ 13 600	$ 48 300
	Surplus	- $ 2 530	$ 3 400	- $ 3 170	- $ 2 300
OMDE 624	Cost	$ 5 985	$ 13 783	$ 19 768	$ 39 536
	Revenue	$ 13 068	$ 13 385	$ 26 453	$ 52 906
	Surplus	$ 7 083	- $ 398	$ 6 685	$ 13 370
Subtotal presentation costs		$ 87 215	$ 113 483	$ 82 238	$ 282 936
Total direct costs		**$ 105 506**	**$ 131 774**	**$ 100 529**	**$ 337 809**
Total revenue		**$ 147 268**	**$ 170 285**	**$ 138 153**	**$ 455 706**
Surplus ignoring development costs		$ 60 053	$ 56 802	$ 55 915	$ 172 770
Surplus including development costs		$ 41 762	$ 38 511	$ 37 624	$ 117 897

a: The figure represents the development costs depreciated over the three years under consideration. Since the courses have no definitive shelf-live to depreciate over only three years is slightly arbitrary and may represent an overestimation of the development cost factor.

The following Table summarizes the costs per section. There is an observable difference in cost per section between OMDE 601 and OMDE 606 on the one hand and OMDE 605 and OMDE 624 on the other. The latter courses are outsourced to a greater extent. The findings suggest that outsourcing is less costly, however, as already stated, this must be weighed against capacity building effects which developing and teaching courses have within the providing institution.

Table 3-18: Costs per Section

		2000	2001	2002	Total	Average costs per course
OMDE 601	Number of sections	6	7	5	18	
	Cost per section	$ 10 083	$ 8 657	$ 7 920	$ 26 660	$ 8 887
OMDE 605	Number of sections	2	2	2	6	
	Cost per section	$ 6 150	$ 6 850	$ 3 050	$ 16 050	$ 5 350
OMDE 606	Number of sections	1	3	2	6	
	Cost per section	$ 8 430	$ 8 467	$ 8 385	$ 25 282	$ 8 427
OMDE 624	Number of sections	1	2	2	5	
	Cost per section	$ 5 985	$ 6 892	$ 9 884	$ 22 761	$ 7 587
Average cost per section per year		**$ 7 662**	**$ 7 716**	**$ 7 310**	**$ 7 563**	

3.3.3. Indirect Committed Costs

Course development and course presentation are core activities and belong to the committed costs, i.e. costs incurred if the contractual obligations are to be satisfied[33]. However, these core activities are embedded in an institutional context where they are managed, where facilities (premises, equipment) are provided, and expenses are incurred - all of which are not attributable to one specific course.

3.3.3.1. ZEF Management Overheads

To measure the management costs attributable to the MDE we measure the overall management costs of the Center for Distance Education (ZEF) and weigh the management requirements of the different cost centers (one of them being the MDE program) according to their percentage in the budget and multiply the overall management costs by the MDE's budget percentage.

The ZEF business plan identifies three major cost centers.

(1) Supporting the FernUniversiät Hagen's distance education students , Germany's only dedicated distance teaching university. Due to Germany's federal structure the FernUniversität cannot simply run regional centers in other states; education is an enviously guarded state responsibility. In order to cater for students in other states the FernUniversität has liaised with several state universities to care for their students in the respective state. To do this state universities create centers of distance education, which have a double function: to cater for students of the FernUniversität and to promote distance teaching within the university and the region. This second part of the mission allows the center to initiate all sorts of projects and includes co-operations like the one with UMUC. While this has been the main cost center its

[33] There is, however, an element of elasticity even here. *Sensu strictu*, it might not be necessary to have visiting experts at all (or one could allow only one visiting expert per course). The visiting expert is a feature not all MDE courses share. Hence ZEF could meet its obligations without having visiting experts.

weight has decreased to 32% and continues to slowly decline. (For further details cf. Bernath, Kleinschmidt, Walti & Zawacki., 2003)

(2) There have been a number of minor activities where ZEF became active to promote distance education and cater for various groups. However, with the UMUC cooperation ZEF's center of gravity began to shift. The inflow of revenue generated from the cooperation with UMUC allowed employment of additional personnel working solely or to a large percentage for the MDE. The weight of the MDE within the Center's overall budget has risen to 32% with an increasing tendency.

(3) Parallel to the cooperation with UMUC ZEF/UNIOL tried to diversify its student support by shifting some of the student support into an online environment, catering especially to those living too far away from Oldenburg to make extensive use of the support available at the center[34]. In order to do this in a cost-effective way ZEF teamed up with two other similar distance education centers at other universities in Lower Saxony and set up an Online Learning Infrastructure. The most recent off-shots in Oldenburg of this line of development are OLI (Online Learning Infrastructure) and LDA (Lotus Domino Applications). With this infrastructure and the developed expertise in Lotus Domino applications (especially Lotus Learning Space), the OLI/LDA cost center already accounts for 17 % of the budget despite being a rather recent development.

The budget percentages also include activity based costing estimates of staff involved in the general administration of the center. Unlike many other university departments ZEF not only has a business plan, but also a quite transparent one. Given that the business plan shows US$ 55 000 as general ZEF overheads we can attribute 32 %, i.e. US$ 17 600, as overheads to be charged to the MDE program. This applies by and large to each of the years under consideration.

3.3.3.2. MDE Management Overheads

In addition to this percentage of general administrative and management overheads incurred by ZEF and charged to the MDE there are specific MDE-related management costs including visits at UMUC (about three times per year) and time for internal meetings. Together these amount to US$ 18 000 per annum during the years under consideration.

3.3.3.3. Expenses

This includes consumables, copying, some marketing (i.e. placing some ads in relevant newspapers e.g. Die ZEIT, e-learning), and some costs to represent the MDE at conferences, which amounts to US$ 20 000.

Most of these costs can be regarded as committed costs. The amount of paper and office consumables have an element of flexibility, but are essentially committed costs. Part of the expectations in an international cooperation are market share. Evidently the American partners expect the MDE to be visible to European clients and that some marketing can be implied in the contractual obligations. However, given that the test for flexible costs is the possibility to scale down in case of decreasing revenues, such costs can also be

[34] The initiative was referred to as MBI (Mentorielle Betreuung im Internet).

classified as flexible costs. The borderline between the committed and managed costs is to some extent arbitrary. We decide here to include office consumables, basic marketing, and the program director's traveling costs as committed costs, but classify travelling and other MDE faculty member's conference participation as flexible or managed costs.

Table 3-19: Indirect Committed Costs: Expenses

	2000	2001	2002
Expenses	$20 000	$ 20 000	$ 20 000
- Bernath conference	$ 500	$ 1 500	$ 3 500
- Hülsmann conference	$ 500	$ 1 150	$ 1 000
- Zawacki conference	$1 500	$ 950	$ 1 500
Expenses committed [a]	$17 500	$ 16 400	$ 14 000
Faculty meetings	$3 500	$ 4 100	$ 3 000
Total	**$21 000**	**$ 20 500**	**$ 17 000**

a: Expenses committed = Expenses - Sum of conferences

A major item within this category is faculty meetings. To which extent such meetings are necessary for the operation of the program is a moot point once the program is well up and running. The faculty meetings convened in the last three years, however, were part of the development process.

In the time under consideration each year a faculty meeting was convened. The initial meeting in 2000 in Frankfurt included the *Foundation's Certificate* core faculty. The meeting was an integral part of the development process and should be classified as part of the committed costs. The meeting's costs amounted to US$ 3 500.

A further meeting in 2001 was held March 2001 in Oldenburg as part of the Pre-Conference Events leading to the ICDE World Conference in Düsseldorf. This meeting was funded through various sources. MDE resources allocated amounted to US$ 4 100.

The 2002 meeting was held in Oldenburg early in the year and convened, other than faculty teaching in the *Foundation's Certificate* UMUC, core course faculty from the entire program. This meeting was of highly important for the consistency of the program. The costs of the meeting amounted to US$ 3 000. (The difference of costs are explained by the number of staff attending and the modalities of compensation.)

A further meeting held in Orlando in November 2002 took place during the phase when the MDE program was well established. It took place within the context of the ALN conference, related to the nomination for the Sloan ALN Award, and can be seen as a quality insurance investment rather than as necessary for fulfilling contractual terms.

3.3.3.4. Equipment

The equipment consists of eight computers (Pentium III or IV), a laptop to be used when at conferences, and three laser printers. The Table shows to which extent the items are used for MDE. Depreciated over five years the annual equipment costs are about US$ 2 000.

Table 3-20: Indirect Committed Costs: Equipment

Items	Specification	Cost	% of use	% of cost	Depreciated (5 years)
Computer Bernath 1	Pentium IV, LDC	$ 1 500	37%	$ 555	$ 111
Computer Bernath 1	Pentium III	$ 1 200	37%	$ 444	$ 89
Computer Hülsmann 1	Pentium IV, LDC	$ 1 500	100%	$ 1 500	$ 300
Computer Hülsmann 1	Pentium III	$ 1 200	100%	$ 1 200	$ 240
Computer Zawacki	Pentium IV, LDC	$ 1 500	50%	$ 750	$ 150
Computer Vondrlik	Pentium III	$ 1 200	100%	$ 1 200	$ 240
Computer Walti	Pentium III	$ 1 200	100%	$ 1 200	$ 240
Laptop			2500	$ 1	$ 250
Printer Bernath	Laser	$ 760	27%	$ 205	$ 41
Printer Hülsmann	Laser	$ 760	100%	$ 760	$ 152
Printer Zawacki/ Vondrlik	Laser	$ 760	75%	$ 570	$ 114
Total				**$ 9 634**	**$ 1 927**

3.3.3.5. Premises

The MDE team is partly housed in university premises and partly in rented office space. For the purpose of this study we cost only the rented space, which consists of two offices costing US$ 120 per month or US$ 1 440 per annum. These additional rented premises of 24 square meters amount to a monthly cost of US$ 5 per square meter. The costs of the offices cannot be exclusively attributed to the MDE, but to about 80%, resulting in annual cost for premises of about US$ 1 150.

[We do not want to open Pandora's box of costing premises (or equipment), which are not at all reflected in ZEF's cash flow. The above figure however allows to cost the premises serving the MDE by shadow pricing. In addition to the above mentioned two offices, one smaller office (15 square meters) is used exclusively for the MDE, while the directors office with 25 square meters is only partly used for managing the MDE. Calculated at US$ 5 per square meter we would get US$ 75 plus US$ 45 amounting to a further US$ 1 320 per annum in premises.]

3.3.3.6. Indirect Committed Costs: Summary

If we draw the various indirect committed costs together ZEF incurs US$ 70 000 of per annum indirect costs and considered necessary to fulfill its contractual obligation within the UMUC cooperation.

Table 3-21: Indirect Committed Costs: Summary

	2000	2001	2002
ZEF general management	$ 17 600	$ 17 600	$ 17 600
MDE specific management	$ 18 000	$ 18 000	$ 18 000
Expenses	$ 21 000	$ 20 500	$ 17 000
Equipment	$ 1 927	$ 1 927	$ 1 927
Premises	$ 1 150	$ 1 150	$ 1 150
Total	**$ 59 677**	**$ 59 177**	**$ 55 677**

3.4. Managed Costs

We distinguish between committed costs and managed costs. Committed costs are those necessary to sustain the capacity for rendering ZEF's obliged services. In Rumble's (1997) words: "Committed costs are those which cannot be eliminated or cut back without a major effect on the enterprise's objectives and profits" (p. 30). Managed costs are those "… which can be reduced fairly easily without any immediate major disruption to the objectives or profits of the organization " (p. 30).

Managed costs relate to two main categories of activities: program expansion and quality enhancement. If there is sufficient surplus it is possible to expand the program beyond what originally had been agreed to. New courses and possible spin-offs could be developed. The investment into quality would include faculty development, course maintenance, and research and evaluation of practice.

It has, however, already been noted that the distinction between committed and flexible costs is based on aspects of process rather than structure and is inherently 'fuzzy' when it comes to details. We will come to that.

3.4.1. Expansion

Under expansion we look at the development of new courses not included in the initial contract. The Memorandum of Understanding (MOD) between UMUC and Oldenburg University initially only covered the *Certificate Foundations of Distance Education*. The surplus (the difference between incoming revenue and committed costs, including additional funds) allowed ZEF to expand the program, and develop (i) additional courses within the existing program, (ii) spin-offs from the expertise gained beyond the programs.

3.4.1.1. Development of New Courses

Two new courses were developed: OMDE 625, *National and International Policies for Distance Education in Developing Countries* and OMDE 626, *Technologies for Distance Education in Developing Countries*. The development and presentation costs of these two courses are presented above under committed costs for systematic reasons (i.e. to compare the development and presentation of these courses with other courses offered by ZEF within the UMUC cooperation[35]). However, they are not included in the summary of (direct) committed costs. They must be considered flexible costs, albeit, once launched the flexibility to discard these newly introduced program components is limited. If students have chosen OMDE 625 with the intention to complete the *Certificate Distance Education in Developing Countries*, there is a certain obligation to respond to these expectations and offer OMDE 626, even if student numbers for this course are below the break-even point. With regard to program expansion planners need to be aware of a certain asymmetry in flexibility, because it is easier to expand a program than to discard some of its (new) components. This easily produces an upward drift of costs.

Moreover, from an economic point of view, expanding the program's offering is a double edged weapon. It dilutes the remaining scale economies even further (already

[35] For this reason of structure, and readability, we leave the presentation of development as well as presentation costs of OMDE 625 and OMDE 626 under the chapter of committed costs. In terms of process, however, these costs are obviously managed costs.

reduced due to the lower difference between fixed and variable costs per student in the virtual seminar model), however it may increase the general attractiveness of the program (economies of scope).

3.4.1.2. Spin-Offs

The experience built up in online teaching and training, not least through the expertise gained within the MDE program, led to several spin-offs. They include the online seminar 'The Essentials of Online Learning' for Nokia human recourse development (Naidu & Bernath, 2002); the 'Professional Seminar *Distance Education in Developing Countries*' offered through the Global Development Learning Network (GDLN) of the World Bank in Ghana, Tanzania and Uganda; and TOL (*Training in Online Learning*), a one-day workshop for educators or trainers who need to consider different options of online learning.

Some of these spin-off activities were cost recovering, some are seen as strategic investments. The *'Professional Seminar Distance Education in Developing Countries*' attracted two other departments of the university. The joint forces, under the organizational umbrella of ZEF, developed and offered further courses (such as urban development and renewable energy) and led to the university-wide Task Force Distance Education for Sustainable Development (DESDe).

Table 3-22: Costs and Benefits of Spin-Offs

	Costs	**Benefits and revenue**
The Essentials of Online Learning (for Nokia)	Medium [a]	High, both in kudos and dollars
Professional Seminar Distance Education in Developing Countries (a GDLN seminar)	Medium (difficult to separate from other development activities)	High in kudos, negative in dollars
Training in Online Learning	Low	High in kudos, medium in dollars

a: Costs here are classified as medium (or low) since we do not cost the manifold activities contributing to the development and presentation of the seminar rather than additional costs incurred mainly through outsourcing some of the related activities. Spin-offs are mainly created through exploiting synergies, providing high value at marginal costs to the institution.

The mentioned spin-offs generally generated more benefits, albeit often in kudos rather than dollars, than costs. It is difficult to separate the preparation for the above mentioned GDLN seminar from the preparation of OMDE 625 and OMDE 626. Much of the development of the above mentioned online seminar 'The essentials of online teaching and learning' derived from experiences of the *Certificate Foundations in Distance Education*. However, it would be interesting to attempt to balance costs and effects of spin-off activities.

3.4.2. Quality Investment

Expanding the range of activities is one way of investing surplus, the other is to enhance program quality. In the case of the MDE quality investment consisted of: (i) course maintenance; (ii) convening meetings with the distributed[36] MDE faculty and visiting

[36] The term 'distributed' unfortunately connotes the concept of 'distributed learning' often used in contrast to distance education. Here it is used merely to indicate that MDE faculty work from different locations. Brindley et al. in this volume emphasize that it is not easy to organize a 'distributed team of faculty'.

experts contracted by ZEF/UNIOL; (iii) conference visits, and (iv) publications. In some cases it is a moot point whether an activity is to be considered a managed or a committed cost. The test is always: Would a particular activity take place even if no surplus were available?

3.4.2.1. Course Maintenance

Course maintenance to some extent is an ongoing process. The online format allows ongoing piecemeal improvements and updates. One of the difficulties in costing online courses is that they generally do not have a definitive shelf life as traditional open universities courses do. Course presentation always includes some editing and adding. However, at times efforts have to be made for more substantial maintenance. In case of the *Certificate Foundations in Distance Education* such a moment arose when an additional third section had to be added and new faculty and visiting experts were invited. During 2001 Walti was charged to analyze and compare the different versions of the *Foundations* course, in order to improve course quality and ascertain that the different variants of the courses complied with the single common syllabus. These maintenance costs amounted to US$ 5 000[37].

3.4.2.2. Faculty Development

To which extent a faculty meeting is considered a committed rather than a managed cost is a arguable. We argued above that in the course development phase such meetings are operationally necessary and have to be considered committed costs. However, with the program in the mean time being well established, the faculty meeting held in Orlando in November 2002 can be considered of lesser operational importance. It took place within the context of the ALN conference and can be seen as a quality insurance investment rather than as necessary to fulfill contract terms.

3.4.2.3. Conference Visits

A program of this profile needs to confront public discussion and present evaluation results. In this sense conference visits go beyond human resource management and public relations aspects (enhance program visibility within the relevant professional community). However, conference visits are largely considered to be flexible costs and it is quite clear that the frequency of conference visits, their geographic locations, and costs depend on available revenues.

Table 3-23: Managed Costs: Conferences

Conferences	2000	2001	2002
Bernath	$ 490	$ 1 480	$ 3 440
Hülsmann	$ 490	$ 1 130	$ 980
Zawacki	$ 1 480	$ 940	$ 1 480
Total costs	**$ 2 460**	**$ 3 540**	**$ 5 900**

The conferences visited include all major European and many major international conferences in distance education, including OnlineEduca in Berlin, EADTU, EADL,

[37] An intended secondary effect of the remit was to integrate Walti as one of Oldenburg's lead faculty responsible for teaching a large part of OMDE 601.

EDEN conferences, LEARNTEC in Karlsruhe, the Cambridge International Conference on Open and Distance Learning, the World Education Market in Vancouver, ALN in Orlando, USA and others more.

3.4.2.4. Publications

A part of quality investment is research (in the sense of reflection on practice) and publication. A number of MDE related studies are published in the 'Studien und Berichte der Arbeitsstelle Fernstudienforschung der Carl von Ossietzky Universität Oldenburg' (Studies and reports of the unit for research in distance education (ASF Series) at the Carl von Ossietzky University Oldenburg). They (will) include:

- Hülsmann, T. (2000). *The costs of open learning: A handbook* (Vol. 2). Oldenburg: BIS.
- Holmberg, B. (2001). *Distance education in essence: An overview of theory and practice in the early twenty-first century* (Vol. 4). Oldenburg: BIS.
- Peters, O. (2002). *Distance education in transition: New trends and challenges* (Vol. 5). Oldenburg: BIS.
- Bernath, U., & Rubin, E. (Ed.). (2003*). Reflections on teaching and learning in an online master program - A case study.* (Vol. 6). Oldenburg: BIS.
- Rumble. G (2003 forthcoming) *Papers and debates on the economics and costs of distance education and e-learning* (Vol. 7). Oldenburg: BIS.
- Beaudoin, M. (2003 forthcoming). *Critical issues in distance education leadership.* (Vol. 8). Oldenburg: BIS.
- Brindley, J. (2004 forthcoming). *Learner support in distance education and online learning.* (Vol. 9). Oldenburg: BIS.
- Hülsmann. T. (2004 forthcoming). *Distance education in developing countries.* (Vol. 10). Oldenburg: BIS.

Volumes 4 and 5 serve as readings for the *Foundations of Distance Education* course, while this volume (Vol. 6) comprises reflective research on the ongoing practical experience. Obviously such publications are a good quality investment, but require careful editing and proof reading. The editing work, beginning in 2001 incurred costs of about US$ 6 150 per volume, which is equivalent to 25% (of 30 hours) of a BAT VIII position. The costs for printing, marketing, and shipping are recovered through sales. Thus, volumes 1, 3, 4, and 5 cost US$ 24 600. Volume 2 was paid for by the International Research Foundation for Open Learning (IRFOL) because it comprises the author's research at IRFOL in Cambridge. Including honoraria to the external authors publishing costs, excluding printing and marketing, amounts to US$ 30 000. It makes sense to charge US$ 15 000 to each of the years 2001 and 2002.

3.4.2.5. Managed Costs: Summary

The following synopsis summarizes the managed costs. In this summary we do not include all the costs of spin-off activities[38], nor the full costs of all the publication related activities. Hence, the total managed costs of about US$ 93 000 are a conservative estimate. It shows, however, that a considerable amount of resources was invested by ZEF/UNIOL that are over and above what was contractually determined.

[38] It should, however, be added that we neither include all the benefits from the mentioned activities. While they are still small with respect to publications spin-offs at times have generated substantial additional revenues.

Table 3 - 24: Managed Costs: Synopsis

	2000	2001	2002
Expansion			
OMDE 625 Development		$ 8 671	
OMDE 625 Presentation			$ 8 028
Expansion			
OMDE 626 Development			$ 6 240
OMDE 626 Presentation			$ 7 300
Spin-offs: GDLN		$ 6 200	$ 6 200
Maintenance OMDE 601		$ 5 000	
Faculty meetings			$ 4 000
Conferences	$ 2 460	$ 3 540	$ 5 900
Publications		$ 15 000	$ 15 000
Total	**$ 2 460**	**$ 38 411**	**$ 52 668**

4. Findings and Conclusions

In this section we summarize the findings on costs and draw conclusions with respect to questions and issues relevant to the field. The summary on costs will show that the program part offered by ZEF/UNIOL is not self-financing, but receives some open and some covered subsidies. We will look at the reason why the program attracts these subsidies. This will make us revisit the concept of managed and committed costs and examine what would happen if we eliminated a number of quality features. We will find that it is possible to run the courses on a cost recovery basis, but with some likely loss in student and faculty satisfaction.

We then re-examine the issue of scale economies in order to demonstrate with the now available figures that the potential for scale economies is limited. The *prima facie* impression of limited potential for scale economies, as implied in the relatively low differential between development costs and presentation costs, is confirmed.

As a last finding we apply the concepts of Bates (1995) and Hülsmann (2000) for cost per student learning hour. It turns out that these figures depend heavily on the underlying mode of calculation. Bates' mode of calculation is more context dependent, while Hülsmann's approach separates cost per development for a student learning hour and the communication costs of teaching or tutoring. Both authors support the idea that media costs must be compared with respect to learning time.

Finally, we attempt to contribute from the background of our experiences to some relevant issues of the field, which resonate as FAQ in many of the professional conferences on distance learning. Our answers are drawn either directly or indirectly from the experiences reflected in this paper.

4.1. Summary of Findings on Costs and Revenues

Table 4-1 draws all the relevant cost information together and allows us to say something about the composition of costs. We basically distinguished four categories[39]: (i) cost of

[39] Note that the classification is a compromise between various types and levels of distinction. While committed and flexible costs relate to process, development, presentation and indirect costs relate to structure. Moreover, the level of abstraction is also not consistent: Development and presentation costs together are the direct costs to be compared with the indirect costs indicated in the diagram.

course development; (ii) cost of course presentation or delivery; (iii) indirect costs, and (iv) managed or flexible costs. The first three categories comprise the committed costs, the last category belongs to flexible or managed costs.

Table 4-1: Costs and Revenue: Synopsis

	2000	2001	2002	Total
Total committed costs	$ 165 183	$ 190 951	$ 156 206	$ 512 340
- Direct committed costs	$ 105 506	$ 131 774	$ 100 529	$ 337 809
- Indirect committed costs	$ 59 677	$ 59 177	$ 55 677	$ 174 531
Total managed costs	$ 2 460	$ 38 411	$ 52 668	$ 93 539
Total costs	**$ 167 643**	**$ 229 362**	**$ 208 874**	**$ 605 879**
Revenue	$ 147 268	$ 170 285	$ 138 153	$ 455 706
Surplus	-$ 20 375	-$ 59 077	-$ 70 721	-$ 150 173
No of students	278	294	241	813
Cost per student	$ 603	$ 780	$ 867	$ 750

It is interesting to note that the total of committed costs changes with the number of students, i.e. the level of activity. Managed costs, however, seem to rise rapidly and rather unperturbed by student numbers. This confirms the observed asymmetry of flexibility: It is easier to expand a program and enhance its quality than to discard components or row back on what has come to be seen as the standard of quality. This may signal that the program is in danger of being trapped in an upward drift of costs unrelated to core activities. However, it may also signal forward investment in that it enhances program quality and/or provides opportunities for spin-off activities, which may generate additional revenue flows.

Figure 4-1: Decomposition of Costs

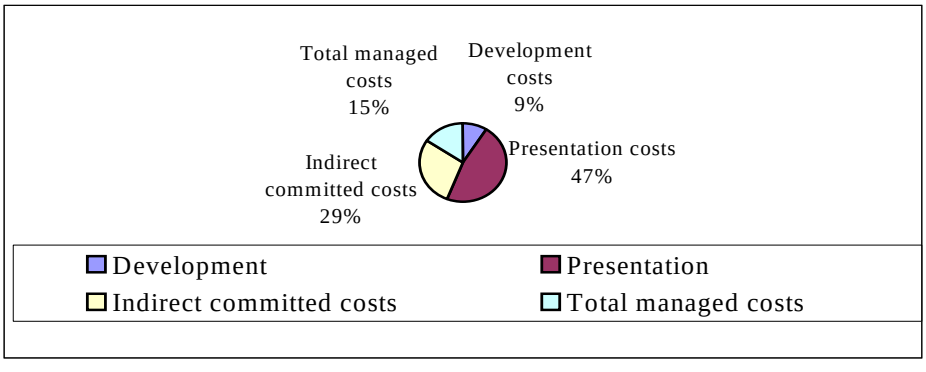

Figure 4-1 shows that 47 % of all the costs are incurred through course presentation. The development costs are a comparatively small item (9 %). One of the major cost components is overhead costs (i.e. the indirect committed costs of 29 %). The managed costs amount to 15 %.

The findings confirm that online education is not a 'money maker' in that it generates profits far beyond the costs incurred (cf. Morgan, 2000). In fact, the figures show that revenues only cover about 75% of the costs (total revenue as a percentage of total costs = 75 %), with 25 % directly or indirectly subsidized by Oldenburg University. Given the earlier remark that the program basically has to be self-sustaining (i.e. that in the long run costs cannot be bigger than revenues), we need to remind ourselves of the nature of these subsidies.

4.1.1. The Issue of Subsidies Revisited

The subsidies basically stem from three sources: the HSP III funds provided by the State of Lower Saxony (referred to earlier on in this paper) amounting to about US$ 120 000; special funds contributed by Oldenburg University amounting to US$ 60 000; and an indirect subsidy in terms of the program director's, who has and continues to be heavily involved in the program. While the two former funds were one-offs, the indirect subsidy in terms of time is of specific importance, since it is ongoing (although decreasing in scale). This means that more cash is left in the kitty than the above figures suggest. Over the years under consideration the indirect subsidies amount to about roughly US$ 100 000[40]. If these subsidies are set against the negative surplus, the program looks much healthier than it would otherwise. However, the figures suggest that there is little room for complacency, especially if student numbers stall or fall.

Why did the program, from the start, attract funding from both the state (Lower Saxony) and the university? The reasons may be inferred from the HSP III proposal, which, because granted, implies that the reasons stated in the application were convincing. They include the following: The reasons may be inferred from the HSP III proposal, which because granted implies that the program design as described in the application was convincing. It included the following elements: (i) type of degree: many German universities are experimenting with this Anglo Saxon model of certification; (ii) delivery format and language: the online format and the language in which the program is conducted allow, in principal, a global reach; (iii) international cooperation: this refers both to the prestigious cooperation with a major distance teaching university as well as to the experience to run a program with an internationally distributed faculty; (iv) innovative funding regime: the program once developed is largely sef-financing (HSP III, 1999).

Similarly, the reasons for Oldenburg university's interest in this cooperative program can be inferred by citing from the President of Oldenburg University's letter from August 2002. It was written in conjunction with the program's bid for the Sloan Award nomination. This included the following:

> The MDE is the first online master's program in which Oldenburg University has been involved. The online format provides Oldenburg with the opportunity to reach out to students from all over the world in new and unique ways. Our partnership with UMUC allows us to experience a new kind of collaboration by fully integrating two of our graduate certificate programs into the MDE. Both of our institutions benefit from gaining each other's contributions to the program, and our

[40] The figure is estimated by adding all costs attributed to Bernath (including course development, course presentation, and management related to the program). While they are included they are not paid for out of the revenue generated from the UMUC cooperation.

> students benefit by participating in an international program with faculty and visiting experts from the United States, Germany, Sweden, Canada, Australia, Israel, and the United Kingdom. (Grubitzsch, personal communication, August 2001)

These quotes indicate that there are basically three testing grounds on which the university wants to gain experiences: (i) increasing the university's reach to international audiences; (ii) experimenting with revenue generating teaching activities; and (iii) experimenting with new forms of online teaching and learning[41]. Because all these criteria forcefully apply to the MDE program cooperation, it was possible to attract the subsidies provided.

4.1.2. The Issue of Managed Costs Revisited

The questions 'Why is the cost per student so high', 'Why are the costs of course presentation so high', and 'Could costs be reduced and still fulfill contractual obligations' may be asked. This means re-visiting the distinctions between committed and managed costs. Are all committed costs in course development and course presentation necessary, or is there some flexibility, such that costs could be further reduced while at the same time fully meeting the terms of the 'memorandum of understanding' (MOU)?

There are three main differences between UMUC and ZEF/UNIOL: (i) ZEF's faculty support is organized on a more individual and personal basis; (ii) the feature of the 'visiting expert' is largely absent from UMUC courses; (iii) ZEF/UNIOL remuneration to its adjunct faculty members is higher. The following Table evaluates the effect on cost per student if these extras were brought down. Underlying assumptions here are (i) faculty support is reduced to a level of US$ 400 per course; (ii) no visiting experts; and (iii) external faculty employed by ZEF/UNIOL are paid UMUC rates. Other costs are taken as provided in Table 4-1.

Table 4-2: Costs and Revenue: Lean Version I

		2000	2001	2002	Total
Revenue		$ 147 268	$ 162 085	$ 134 380	$ 443 733
Costs	Development	$ 18 292	$ 18 292	$ 18 292	$ 54 876
	Presentation	$ 58 400	$ 61 300	$ 67 500	$ 187 200
	Indirect committed	$ 59 677	$ 59 177	$ 55 677	$ 174 531
	Managed	$ 2 460	$ 29 740	$ 31 100	$ 63 300
Total costs		**$ 138 829**	**$ 168 509**	**$ 172 569**	**$ 479 907**
Total surplus	Cost-revenue	$ 8 439	-$ 6 424	-$ 38 189	-$ 36 174
No of students		278	294	241	813
Average cost per student		$ 499	$ 573	$ 716	$ 590[a]
Average revenue per student		$ 530	$ 551	$ 558	$ 546[a]

Notes: a: Average cost or revenue per student over the three years under consideration.

The Table demonstrates that ZEF/UNIOL could run its courses in a way that costs would almost be covered by the generated revenue. If we were to combine this lean

[41] These points are also emphasized by the enquête commission of the German Parliament (Deutscher Bundestag (Ed.), 2002), which includes a chapter on the global knowledge society within which the impact of globalization on Higher Education is discussed. The aspect of internationalization of higher education, e-learning, and the need for structural reforms (cf. 5.4.1.2; 5.4.1.3; 5.4.1.34) are emphasized.

version with completely scaling down the costs classified as managed or flexible costs, ZEF/UNIOL would even have a marginal profit (Table 4-3).

Table 4-3: Costs and Revenue: Lean Version II

		2000	2001	2002	Total
Revenue		$ 147 268	$ 162 085	$ 134 380	$ 443 733
Costs	Development	$ 18 292	$ 18 292	$ 18 292	$ 54 876
	Presentation	$ 58 400	$ 61 300	$ 67 500	$ 187 200
	Indirect committed	$ 59 677	$ 59 177	$ 55 677	$ 174 531
	Managed	$ 0	$ 0	$ 0	$ 0
Total cost		**$ 136 369**	**$ 138 769**	**$ 141 469**	**$ 416 607**
Total surplus	Cost minus revenue	**$ 10 899**	**$ 23 316**	**-$ 7 089**	**$ 27 126**
No of students		278	294	241	813
Average cost per student		$ 491	$ 472	$ 587	$ 512
Average revenue per student		$ 530	$ 551	$ 558	$ 546

The model calculations suggest that ZEF/UNIOL could have operated at a lower cost level and thus on a cost recovery basis. But at what price? Bernath's analysis of student satisfaction (based on the 100 points questionnaire, cf. p. 35 in this volume) suggests that the visiting experts are a feature of the ZEF/UNIOL courses highly valued by students. It may well be assumed that the slight edge Oldenburg's courses have compared with UMUC's in the MDE program (cf. Bernath & Rubin in this volume) are attributable to this feature.

Aside from student satisfaction faculty satisfaction is a central element of success. There is plenty of evidence (albeit anecdotal) of the impact Oldenburg's faculty support has on faculty satisfaction. It would be difficult to introduce external faculty to a new teaching environment so smoothly without this extra investment in faculty support. It goes without saying that the higher remuneration ZEF/UNIOL pays to its external faculty also contributes considerably to their satisfaction. This ensures, among other things, a certain continuity, which otherwise might be difficult to sustain.

4.1.3. Comparing with UMUC

It is difficult to compare incurred costs between ZEF/UNIOL and UMUC since UMUC's costs are not publicly available. However, some figures are. Table 4-4 is based on a UMUC information page available under the University System of Maryland web site (UMUC, 1999).

It can be assumed that the figure referring to number of students 'counts heads' rather than enrollments. These 34 783 students would each take an average of 9.6[42] credit hours annually which means credit hours 333 917 leading to a cost per credit hour of $507 or of $1 521 for a three credit hour course.

[42] The figure 9.6 is based on the assumption that on average UMUC students take 1.2 courses in spring/fall and 0.8 in summer (twice, spring and fall, 1.2 x3 credits = 7.2 credits; once (in summer) 0..8 x 3 credits = 2.4 credits which amounts to an average of 9.6 credits taken in one academic year).

Table 4-4: UMUC: Cost per Student Benchmark

	Numbers/dollars
Undergraduate Students:	29 617
Graduate Students:	5 166
Total no of students	34 783
Faculty:	1 373
Operating Budget:	$ 169 300 000
Total number of credits hours	*333 917*
Cost per credit hour	*$ 507*
Cost per three credit hour course	*$ 1 521*

Figures in italics are our calculations; the rest of the figures are found in UMUC (1999).

Table 5 of Bernath & Rubin in this volume suggests a similarity between the cost drivers in UMUC and ZEF/UNIOL program components. They both include two full time faculty members, eight adjunct faculty and suggests that costs are comparable. The costs derived in Table 4-4 mix costs per graduate and costs per undergraduate students. Tuition fees for a credit in undergraduate, non-resident status was $385 in Fall 2002; for graduate students tuition was $521 or $1 052 or $1 563 respectively for a 3 credit course. This basically demonstrates that UMUC operates as we have explained it for ZEF/UNIOL. Essentially, the generated revenue flow from student tuition has to cover the budgeted operating costs. The revenue of app. $550 per student, which is forwarded to Oldenburg is about one third of the generated revenue per student. This would suggest that UMUC may estimate costs for teaching as about $550. This is largely consistent with our previous observations, which suggest that if ZEF discarded some of its additional features such as visiting experts and comfortable arrangements for faculty support, the costs per student could be scaled down to this level.

4.1.4. Scale Economies

This section shortly examines the scale economy potential in a program course. The potential of scale economies can be gauged by analyzing the total cost formula, which is also commonly used to analyze the costs of distance education (cf. Perraton, 1982; Orivel, 1987; Rumble, 1997).

The total cost formula reads as follows

TC=F+VN

Total costs = Fixed costs + (Variable costs per student x Number of students)

From the 'Total cost' formula average costs per students are inferred by dividing the total costs by the number of students the program has served so far, i.e. as AC=TC/N or

AC=(F/N)+V

Average costs = Fixed costs divided by Number of students + Variable cost per student .

In our case the formula requires some modification since the MDE represents distance education where students are taught in classes and not individually[43]. Variable costs per student therefore behave as a step function and adding an additional student does not

[43] According to Holmberg (1995) distance education is traditionally 'individualized study'.

increase costs until the class reaches the maximum acceptable group size, and an additional class has to be opened. For the MDE program we can write the direct course costs as:

Total costs = Fixed costs of development + Semi-variable costs of presentation x Number of presentations

The number of presentations depends on the number of students divided by the maximal accepted group size[44]. Or formally:

Number of presentations = [number of students/maximal group size][45]

Total costs = Fixed costs of development + Semi-variable costs of presentation x [number of students/maximal group size]

If we write for 'semi-variable costs' SV and for 'maximal group size' G, we get:

TC=F+SV*[N/G]

Again the Total Cost formula allows us to derive the average cost formula by dividing total costs by student numbers which leads to:

AC=TC/N or AC=(F/N) + SV*[N/G]/N and finally
AC=(F/N) + SV/G.

For the MDE the maximal group size is fixed at around thirty[46], hence the above formulas lead to:

TC(N) = F+SV*[N/30] and
AC(N) = (F/N) + SV/30

Below we determine average costs per students for all the courses in the *Foundations Certificate*. As the semi-variable cost of presentation (SV) we take the average cost of presentation in the years under discussion.

Table 4-5: Average Cost per Student

Course	Fixed costs of development	Average cost of presentation per group max. group size	Average cost of presentation per student	Number of students	Average cost per student
OMDE 601	F= $ 15 700	SV= $ 8 773	$292	519	AC=($ 15 700/519) + $ 8 773/30 = $ 323
OMDE 605	F= $ 6 600	SV=$ 5 190	$173	117	AC=($ 6 600/117) + $ 5 190/30 = $ 229
OMDE 606	F= $ 25 700	SV= $ 8 433	$281	86	AC=($ 25 700/86) + $ 8 433/30 = $ 580
OMDE 624	F= $ 6 695	SV= $ 6 773	$226	76	AC=($ 6 695/76) + $ 6 773/30 = $ 314

The average cost per student as calculated here assumes full classes; the difference between the fourth and the last column then indicates the potential for scale economies.

[44] Practically, things are a little more complicated than this. There is a difference between opening a new section because course enrollments exceed maximal acceptable group size, and scheduling new courses because they are offered in the program even though enrollment does not reach the break-even point.

[45] The square brackets indicate rounding to the next integer.

[46] The so called maximal group size is a 'fuzzy concept'. In fact you find 31 and 32 as group size in OMDE 601 without this having lead to the opening of a new group. In practice a number of factors have to be considered including the practicalities of re-grouping the already enrolled students.

The following figure depicts the actual development of average cost per student for the OMDE 601 course against a model calculation. In this it was assumed that the presentation costs of each presentation are equal to the average presentation costs we have identified for the three years under consideration, and that classes are full (30 students each). The latter assumption would distort figures if we were to discuss revenues, but does not severely distort costs. This because most OMDE 601 courses are near to 30 students per section, and student numbers only impact the first component (F/N). The impact on average costs increasingly diminishes the larger the number of students is over which fixed costs are spread.

Figure 4-2: Average Cost per Student OMDE 601

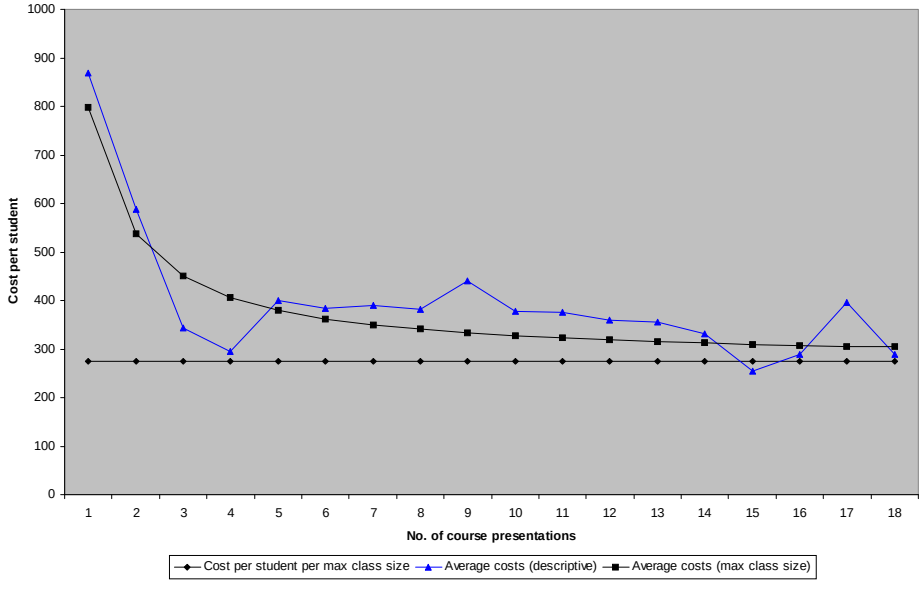

Figure 4-2 shows that the scale economies based on the differential between fixed costs of development and presentation costs are exhausted. The zigzag of the empirical graph, as opposed to the smooth model graph, is due to the homogenizing assumptions made for the model, especially that the average of presentation costs is the same cost for each presentation. The straight line represents the constant factor in the equation: average cost of presentation divided by maximal group size. The curve only could fall below this level (cf. presentation 15 in the graph) if costs of presentation are below average costs and/or the student number exceeds the notional maximal group size of 30.

This analysis shows that the scale economies for a course development model like the one characteristic for the MDE are exhausted within about two years. This does not mean that the model could not be profitably scaled up, only that average costs per unit of output are not likely to come down as an effect of program expansion. Scale economies means that profitability can be increased by program expansion since

revenues are constant per unit of output, but costs decrease. This avenue of profitability is characteristic for Fordist-type distance education[47]

4.1.5. Cost per Student Learning Hour

The role of cost per learning hour has been used especially to compare the cost-efficiency of media (Bates, 1995), however the concept remains controversial. In practice, professionally moderated and assessed learning hours become the currency with which to measure learning in the form of credit points. However, some analysts consider learning time an input variable rather than an output measure required for measuring the effectiveness of learning. Nonetheless, cost per learning hour remains an interesting and informative indicator as long as it is defined explicitly and accompanied by a sufficiently thick description of the context.

Bates states:

> "$\$ = \frac{t}{hxn}$
>
> where $ = the total cost per student contact hour
> t = the total costs of materials (text or programme, etc), including overheads, production and delivery
> h= the average number of hours spent studying those materials per student
> n= the number of students studying the material over the life of the course"

This means basically:

$$\text{cost per student contact hour} = \frac{\text{total cost of program}}{\text{average no. of student learning hours x no of students}}$$

In our case the costs per student contact hour in OMDE 601 in Bates' sense would require determining for the total cost of program: the fixed costs of development, plus the costs of delivery, plus the course related overheads. The latter requires the apportionment of overheads to OMDE 601. We most sensibly do this by calculating the proportion of students taught in OMDE 601 compared to all students taught in the program, i.e. 521 out of 791 enrollments, giving us 66%. Since all the MDE related overheads over the three years under consideration amount to $174 531, 66% of that is $115 190. Hence the total costs of OMDE 601 are composed of: $15 700 (fixed costs of development), $ 148 550 total costs of delivery or presentation over the three years of consideration, and $115 190 as apportioned overheads. The sum is $279 440.

[47] One may recall Peters contingency formula of distance education as the 'most industrialized form of teaching and learning'. However, Peters also sees distance education the most industrialized form of teaching and learning for the post-Fordist period of distance education. The problem is that post-Fordism is also often seen as post-industrialism. To hold up the characterization of distance education as the 'most industrialized mode of teaching and learning' for a post-industrialist era seems to be out of tune with mainstream terminology.

Hence the cost per student contact hour in OMDE 601 according to Bates' formula would lead to:

cost per student contact hour in OMDE 601 = $ 279 440/(150 x 519) =
$ 279 440/7 7850 = $3.59

The drawback of this formula is that it is quite sensitive to student numbers as a short algebraic analysis demonstrates. If we take Bates' total cost of the program as TC, as defined above, the average number of student learning hours (SLH) we get:

$$\text{cost per student contact hour} = \frac{\text{TC}}{\text{SLH x N}} \Rightarrow$$

$$\text{cost per student contact hour} = \frac{\text{F} + \text{VN}}{\text{SLHxN}} = \frac{(\text{F/N}) + \text{V}}{\text{SLH}} = \frac{\text{AC}}{\text{SLH}}$$

(The same applies if semi-variable costs are involved.) Since average costs per student depend very much on student numbers, the figure is quite context sensitive.)

Hülsmann (2000) therefore suggests to separately report the fixed cost of development per student learning hour and the cost of presentation per student learning hour. This means for OMDE 601 the following:

The fixed cost of development per student learning is $15 700/150 = $105. The average cost of presenting a course is $8 773. This generates a notional maximum number of 150 x 30 = 4 500 SLH. Hence the communication cost for one hour of student learning is $1.83. Hülsmann suggests to report separately the fixed costs of content development for one hour of student learning and the costs of presenting a course. Hence OMDE 601 is characterized by a pair of numbers: those relating to the fixed costs of developing a student learning hour ($105) and variable costs of the presentation of a student learning hour ($1.83).

4.2. Conclusions

If we step back and ask to which issues this case study may contribute, we find a number of questions, which are asked over and again when it comes to online learning. These questions include: (1) How much does it cost? (2) Why does it cost so much? (3) Is the program scalable? (4) What is the ideal class size? (5) What is the teacher time required to teach an online class? (6) What are the advantages of outsourcing activities? (7) What are the main avenues of quality investment?

The findings of the case study point into the following directions:

How much does it cost?
The paper offers a context description ('thick description') which allows the user to judge if (and to what extent) findings can be transferred[48]. The paper distinguishes between two direct costs, i.e. costs of course development and costs of course presentation. A benchmark figure for the course development costs of 150 SLH[49]

[48] The methodology borrows from the 'naturalistic inquiry' paradigm developed by Lincoln & Guba (1985).

[49] This is equivalent to three US American credit points.

(Student Learning Hours) can be as low as US$ 5 000; a benchmark figure for the costs of a presentation is about US$ 7 500.

The fact that development and presentation costs belong to the same order of magnitude reflects a cost structure with only a small potential for scale economies.

Why does it cost so much (or so little)?

The rather low costs of course development are due to a different model of course development as compared to that of traditional open universities. The OUUK, for instance, develops course material from scratch (which can be extremely costly and time consuming), whereas in the UMUC/Oldenburg cooperation existing textbooks are used, which reduces costs and time-to-market. Often the authors of the textbooks are invited as 'visiting experts' in the respective courses, which adds an element of quality.

Is the model scaleable?

While potential for scale economies is reduced, there is an observable decrease in presentation costs reflecting the diminishing dependency on technical and faculty support (‘economies of experience’). The model is scaleable if quality personnel can be found. Profits (‘surpluses’) can be made if course enrollment is above the break-even point, however the model does not follow the logic of scale economies.

What is the ideal class size?

The ideal class size lies at an interval where the lower and upper limits depend on economic as well as on pedagogical considerations. On the lower limit side economics requires the class size to be above the break-even point. If we only take the direct costs of development and presentation and an average income per student of about US$ 500 to US$ 600 into account the break-even point is about 15 students per class. If we consider that direct cost of presentation and development amount to about 60% of the total costs the break even point would be about 21 students. Generally a new section is opened when the class size passes the 25 student limit.

This class size is also recommendable from a pedagogical point of view. In our experience about 70% of a class is quite active (i.e. 17.5 students of a class of 25). This number of actively participating students generates enough messages for a self-sustaining level of communication.

Low class sizes require a different approach to communication management. In OMDE 625 and OMDE 626 the 'learning contract' model was applied, where participants work on a project during the course, which is developed in steps (preparing an annotated bibliography; preparing of a project conference; conducting a project conference; writing the final paper) while bringing them together without having to engage in intense discussions during the 15 weeks of the course.

What is the teacher time required to teach an online class?

The messages signed by the lead faculty can be classified following Sims, Dobbs and Hand (2002) as 'predetermined and presented', 'teacher contributed', and 'captured dialogue' contributed by the teacher. Predetermined content here refers to the main topics which can be imported from earlier courses. They form the skeleton of a course and can be imported mechanically from one term to the other, which requires only a few minutes to do. 'Teacher contributed' content includes modifications of the predetermined content as well as 'wrapping ups' and providing feedback to assignments. Modifications such as changing dates, responding to minor changes, while taking little time, requires

some attention to detail. A considerable amount of time is related to writing wrapping up messages and providing feedback for assignments. However, the largest time investment falls under the 'captured dialogue' category. This is a somewhat flexible category, since it depends on the faculty to which extent he or she drives the discussion.

The analysis of the allocation of teachers' time presented in this paper is the result of a triangulation of an activity based costing (ABC) approach and the time allocation implied in the job description. It leads us to estimate that the teaching faculty needs between 1 and 1.5 times the amount of the learning hours required from the students. This means about 15 to 22 hours per week per course.

Is it cheaper to outsource activities?

The cost-analysis suggests that outsourcing is less costly than using core faculty by a noticeable margin. The course development ranges from US$ 6 600 (outsourced) to US$ 26 000 (in-house), i.e. by a factor of 4. The course presentation varies between US$ 5 700 (outsourced) to US$ 7 300 (in-house). Nevertheless, using core faculty contributes more to capacity building in-house and in the case of expanding and vibrating programs a sizeable number of core faculty needs to be involved.

What are the main avenues of quality investment?

The line between committed costs and flexible costs is somewhat blurred when it comes to program management and other costs related to quality investment. In the long it is necessary to invest into the quality of the program in order to sustain it. However, resources for quality investment are flexible and depend to some extent on the surplus (incoming revenue minus committed costs). Avenues of quality investment are described and costed. They include: (i) faculty meetings; (ii) course maintenance; (iii) visiting of conferences (for reasons of raising the visibility of the program and marketing, as well as for staff development); (iv) research and evaluation (including publication costs); and (v) program expansion.

Over the three years under consideration managed costs amounted to 11% of the total costs. It should, however, be noted that ZEF course presentations generally included a visiting expert and a high level of faculty support. These elements could, with some reason, also be included in the quality investment category.

We started the paper with a remark on methodology saying that we aim at transferability rather than generalizability. We believe that what Lincoln and Guba (1985) say for social science in general *a fortiori* applies for a field as fast changing as technologies and their costs. Though we did not follow the full program of the 'naturalistic inquiry' approach (not least because the paper would become less readable) we tried to adhere to the main principles. One important principle is to aim at trustworthiness[50]. A necessary condition to increase trustworthiness is transparency, which brings us back to the title of the article 'Costs without camouflage'.

In this article we tried to deviate from what has been referred to as the 'secret service' approach to costing, meaning that one wants all available information about the competitor, but oneself does not contribute any information. If cost information is regarded as important for the development of our field, we all need to contribute.

[50] As opposed to independent verifiability, a practically impossible ideal.

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Unpublished Documentation Relevant for this Paper

DOCUMENT 1: MHEC Proposal for Master of Distance Education drafted by Rubin was submitted the first time March 30, 1999, modified and resubmitted April 19, 1999.

DOCUMENT 2: HSP III Förderantrag drafted by Bernath, submitted May 20, 1999 (9 pages)

DOCUMENT 3: Memorandum of Understanding between University of Maryland University College and Carl von Ossietzky University Oldenburg, 3 pages. The document was signed November 1st, 1999 by Hannah, Dean, UMUC Graduate School, Heeger, President of UMUC, Bernath, Director of the Center for Distance Education, and Garz, School of Education, Chairman Arbeitsstelle Fernstudienforschung.

CHRISTINE WALTI

Experiencing a New Paradigm - Elements, Aspects, and Structure of Selected Courses in the MDE Program

This article begins with a brief description of the author's background as a participant in the MDE[1] and the nature of work and experiences, which have provided her with additional insight and understanding to reflect on selected courses in the program[2]. It goes on to provide an overview of the various elements, aspects, structures of tools and spaces implemented in the selected courses and analyzes conference features, participation, study groups, assignments and feedback. Trends and approaches are described, observations and thoughts on arising issues are discussed, and suggestions for improvement are made. That continuous evaluation and development, as practiced in these courses and in this program, are important, is the key conclusion.

1. Introduction

The impressions and information in this exposition are based on the intertwining of various roles of this author in the MDE program. The primary and foremost perspective reflects the background as one of the first fifty students starting the program in January 2000 in which several of the described courses were experienced in their pioneer stages. Over the two years that have passed these courses have been continuously developed and refined. Since the spring semester 2001 this author has assisted in the OMDE 624 *Student Support in Distance Education* course (now OMDE 608 and a core course) and in September 2001 was also charged with several tasks regarding courses originating from the University of Oldenburg[3] (OMDE 601). At a faculty meeting in Oldenburg in January 2002, where program directors, instructors, and Oldenburg's instructional designer were present, the author presented an evaluation of OMDE 601. At this meeting course syllabi, required readings, and assignments of the courses described in this essay were introduced and made available to those present, and experiences in the program were exchanged. The presentations in this essay reflect these various settings.

2. Background

The programs history and other elements included in this analysis are described in more detail in other contributions to this monograph[4]. Being a 'pioneer' student for most of the program was an exiting and interesting experience. It offered hands-on involvement as a distance learner and insight into many of the managerial issues of a new and challenging program. The courses were carefully developed and designed with experts in the field of distance education prior to the start of the program. However, the constraints encountered were considerable. To develop a masters program in this field and in the online environment, which is still fairly new even in distance education, provided several

[1] MDE: Master of Distance Education
[2] Courses are: 601: Foundations of DE; 602: DE Systems; 603: Technology in DE; 604: Management of DE; 605: New and Emerging Media; 606: Economics of DE; 607: Instructional Design and Course Development in DE; 624: Student Support in DE. For details see: http://www.umuc.edu/mde/
[3] Carl von Ossietzky University of Oldenburg, Germany - UMUC's partner institution in the program.
[4] Cf. Bernath/Rubin in this volume.

challenges. There were no standards for the content and delivery of such a program (e.g. when compared to the much longer tradition of MBA's) and there are/were few existing examples. Competencies, expertise, readily available content, readings, and available experts are/were scarce and needed to be sought out on a point to point basis. Pilot phases could not be conducted due to the quick launch of the program and its first courses with their successful start. The first students – the pioneers - were exposed to some of the drawbacks of these circumstances and due to their one-time experience are often not aware of the efforts made to improve and further develop the courses. It can be said that in many cases students' suggestions and the common experiences in a course led to a number of changes and adaptations that improved following courses. These circumstances and this approach most likely depict the reality of these future distance education managers in a dynamic and evolving environment.

Other significant elements with regard to the MDE program context deserve mention. Admission requires the equivalent of a U.S. undergraduate degree; non-native English speakers must complete the TOEFL[5], but GMAT[6] and GRE[7] are not required. An open policy is followed by allowing provisional status during three graduate courses, thus providing more open access in other terms than only time and space.

WebTycho is the graduate school's educational portal and 'home' for the MDE program. This platform organizes and structures all courses in the same manner and provides a uniform appearance. It allows some degree of individuality for instructors while guaranteeing familiarity for the students. Support is provided 24/7 via email, telephone, and in form of online tutorials and guides. The interface also provides direct links to the UMUC library, a list of classes the participant is registered for, and a WebTycho 'help' feature.

3. Elements, Aspects and Structure of Spaces

3. 1. Collaborative Learning in the MDE Program

The courses have evolved and been modified over time, based on changes (or extension) of the faculty base, the WebTycho learning environment, experiences with and feedback from students, and practice and practicality. The time point of the author's participation[8], the documentation provided at the 2002 faculty meeting and the author's work related experiences in OMDE 601 & 624 form the basis for a comparative analysis.

The MDE program places a great deal of emphasis on collaborative and co-operative learning and the methods are grounded in a constructivist approach. A wide variety of learning theories, procedures, formats, and styles are exemplified. "One of the key elements of the constructivist approach to learning is the interdependence of the learners on each other in discussing, examining, interpreting and organizing information and experiences, as they are transferred into personal knowledge" (Sharan & Sharan 1992, as cited by Ewing, 2000, para. 22). This is particularly demonstrated in the conference areas, participation requirements, study groups, assignments and feedback. These diverse

[5] TOEFL: Test of English as a Foreign Language
[6] GMAT: Graduate Management Admission Test
[7] GRE: Graduate Records Examination
[8] Semester and year are provided in parentheses in the table.

elements and methods (as encountered during the author's participation in the courses) are displayed in the following overview. It is very likely that in several courses and areas the nature of these elements has been adapted and/or modified.

Overview of Elements in the MDE Courses:

MDE Courses	**601** (02/00)	**602** (02/01)	**603** (02/01)	**604** (09/01)	**605** (09/00)	**606** (06/00)	**607** (09/02)	**624** (09/00)
PreWeek & Café/Bar								
Available								
Instructor participation								
Structure								
Lessons								
Modules								
Units								
Visiting experts								
Conferences								
Study questions (a)								
Participation is part of the grade								
Extent of instructor/ student interaction (b)	b:2	b:2	1	b:2 & c)	b:3	b:2	b:2	b:1
Generalized summaries of contributions				c)				
Participation								
Required and part of grade								
Study Groups								
Monitoring of study groups				c)			d)	
Students choose groups								
Group work graded								
Provide work to the class								
Assignments								
Some choice in assignments topics								
Advance information on assignment process and content in the syllabus								
Provide work to the class				c)				
Extent of individual assignment feedback	b: 3	b:2	b:1	b:3	b:3	b:2	b:2	b:1

MDE Courses	**601** (02/00)	**602** (02/01)	**603** (02/01)	**604** (09/01)	**605** (09/00)	**606** (06/00)	**607** (09/02)	**624** (09/00)
Feedback								
To students' individual conference contributions								
Generalized feedback on assignments								
Use of additional elements								
Telephone conferences								
Chat								
Video/audio clips								
Other (Powerpoint, Excel, CBT etc.)								
Provision of online materials								

a) Study Questions reflects the idea of guiding questions on issues related to readings, introduced by the instructor(s) and made available at the beginning of a new lesson/module/unit.

b) This rough scale depicts the author's perception: 1: extensive (regarding various aspects such as grammar, APA style, approach, use of literature and depth and broadness of scope and/or use of a criteria scale; 2) one or two of the previously mentioned aspects; 3) only a short remark or comment.

c) This course uses a co-teaching model; the nature of instructor activity differed greatly.

d) In this course study groups were installed to proofread and give feedback on each members individual project.

Berge (1995) describes four categories of roles when instructors facilitate learning in the online environment:

- *Pedagogical*, which is intellectual and task related,
- *Social*, which means creating a friendly, social environment,
- *Managerial*, which includes organizational, procedural and administrative tasks,
- *Technical*, which makes participants comfortable with the system (p. 24).

These roles and associated activities build the basis from which the following elements, aspects, and structures in the courses will be reflected upon.

3.1.1. Conference Areas

The conference areas are the backbone of the virtual classrooms in this program. They are the space where communication, participation, exchange, and the learning processes take place and are prominently visible[9]. All courses use this space extensively. Berge (1995) notes that "... there are essentially two kinds of interaction with regard to learning. One is a student individually interacting with content. The other is a social activity: a student interacting with others about this content." (p. 22).

The MDE courses all 'open' one week prior to the official semester. This provides the students with ample time to become (re)acquainted with the technological features (and

[9] Cf. Hülsmann "Texts that talk back - Asynchronous conferencing: A possible form of academic discourse?" in this volume discusses the various aspects of asynchronous conferencing.

changes) involved in the virtual environment and each course's particular requirements and setup. A 'PreWeek' conference is available to facilitate this process, thus accommodating the needs of an anonymous and heterogeneous student population. Elements can include updates and new features in the WebTycho learning environment, set-up of the course structure, practice features, exercises, conventions, how to order the required textbooks, and a space to place biographical information or comments[10]. Employing this strategy is supported by research and depicts a form of scaffolding, which Bonk and Kim (1998) describe as " ... a teaching method that provides the learner with support or assistance to complete a task or solve a problem that would not have been mastered without help" (as cited in Ge, Yamashiro & Lee, 2000, para. 3). The extent of activities and details provided in the Pre-Week orientation varies. As more and more generic information is being designed for the program the trend towards a more homogenous approach in this area is emerging.

MDE Courses	**601** (02/00)	**602** (02/01)	**603** (02/01)	**604** (09/01)	**605** (09/00)	**606** (06/00)	**607** (09/02)	**624** (09/00)
PreWeek & Café/Bar								
Available								
Instructor participation								

A community space generally unrelated to the subject matter is a Café or Bar and provided in all courses. These areas are established to expedite a sense of community and provide room for the discussion of non-subject related topics (information on events, happenings, new literature, reports and current events, where concerns, absences, and questions are posted) in an amiable, friendly environment. By providing this space the actual content areas (conferences and threads) are less likely to become cluttered with off-topic issues. In most classes instructors monitor and/or take part in the discussions, comment, and/or answer questions.

The main conference areas are structured by the faculty member(s) and are accessible to all rostered in the class. Students contribute by responding to topics and others' responses (asides) and, if given the option, by creating main topics. The conference areas organize the learning experience and take on the form of weekly sequences, modules, or units depending on course design and descriptions in the syllabi.

MDE Courses	**601** (02/00)	**602** (02/01)	**603** (02/01)	**604** (09/01)	**605** (09/00)	**606** (06/00)	**607** (09/02)	**624** (09/00)
Structure								
Lessons								
Modules								
Units								
Visiting experts								

Most courses use the 'module' covering several weeks in the course. The content details and length of the sequences are provided to different degrees. Modules may be released on a predetermined basis or provided all at once. The content may or may not be described in

[10]As of the spring semester 2002 WebTycho provides a biography feature in the students' portfolio. The information can be stored and retrieved for future classes.

the syllabus, sometimes the duration of a module is specified in the syllabus. Others not only specify the exact dates of the modules, but provide an overview of content information in a 'lesson guide', in which hyperlinks gives module details.[11] Lessons are generally provided on a weekly basis and thus depict a more structured approach. Units tend to be somewhat longer than modules and group larger content areas.

The instructors' role in this pedagogical environment is not only that of a SME,[12] but of a moderator and facilitator, who exposes threaded topics, opens seminars, announces agendas, asks questions, facilitates discussions, and solves technology issues and emergencies. Davie (1989) mentions several important techniques to manage group discussions that instructors use in the courses: summarizing conversations by drawing together main themes, providing a reference to the original comments made by students, pointing to other materials and comments on the topic or giving ongoing commentary to develop the topic.

MDE Courses	**601** (02/00)	**602** (02/01)	**603** (02/01)	**604** (09/01)	**605** (09/00)	**606** (06/00)	**607** (09/02)	**624** (09/00)
Conferences								
Study questions (a)								
Participation is part of the grade								
Extent of instructor/ student interaction (b)	b:2	b:2	b:1	b:2 c)	b:3	b:2	b:2	b:1
Generalized summaries of contributions				c)				

a) Study Questions reflects the idea of guiding questions on issues related to readings, introduced by the instructor(s) and made available at the beginning of a new lesson/module/unit.

b) This rough scale depicts the author's perception: 1: extensive (regarding various aspects such as grammar, APA style, approach, use of literature and depth and broadness of scope and/or use of a criteria scale; 2) one or two of the previously mentioned aspects; 3) only a short remark or comment.

c) This course uses a co-teaching model; the nature of instructor activity differed greatly. In this course study groups were installed to proofread and give feedback on each members individual project.

Other important elements are encouragement, showing connections and relationships, mediating between participants and suggesting ways "... the conversation might go deeper, and comment on group processes" (Davie, 1989, p. 81).

Asking specific questions of the students or providing 'study questions' that guide them through the readings and during the discussion in the conference areas are typical strategies in several of the courses. Commenting on each student's responses or accomplished tasks in a lesson, module, or unit generally or responding individually to students' comments both occur. Length and detail of these responses vary not only with regard to the topic or subject within a course, but also from instructor to instructor. Often a number of responses or questions will also be responded to collectively by providing a summary of the discussions and are often enhanced with additional

[11] Dates may be included if the syllabus is adapted for each semester and not generic.
[12] SME: Subject Matter Expert

information and reading resources. This is an element where the various instructional and educational philosophies are particularly prominent and it allows the learners to become acquainted and deal with a wide array of approaches that often have an immediate affect not only on their learning experiences but their satisfaction as well.

3.1.2. Participation

Participation is closely linked to CMC and the previously described conference areas and is understood as written contributions to the conferences and groups[13]. Eastmond (1992) describes " ... interactivity ... [as] the greatest asset of computer conferencing, often much greater than in the conventional classroom, particularly among learners" (p. 26).

MDE Courses	**601** (02/00)	**602** (02/01)	**603** (02/01)	**604** (09/01)	**605** (09/00)	**606** (06/00)	**607** (09/02)	**624** (09/00)
Participation								
Required and part of grade								

Participation is required in most courses and then constitutes part of the grade. The nature, degree, and facilitation of participation vary widely and encompass a broad scope of arrangements. This includes (but is not limited to) activities such as answering weekly questions (with or without a choice of questions), within a certain time frame (or not), in a particular fashion (or not) or a combination of all. The model, where no prescribed questions are raised and/or students are (only) asked to discuss the readings or make comments, is a further approach. The trend in the program seems to be to not only increasingly 'force' participation through grading, but to attach a higher value to it by increasing its percentage in the overall grade.

One of the instructors' most important roles in this setting is to facilitate this participation. Feenberg (1989) calls this "weaving": "… to summarize the state of the discussion and to find unifying threads in participants comments; it encourages these participants and implicitly prompts them to pursue their ideas" (p. 15).

3.1.3. Study Groups

Introducing study groups allows "... students to experience group interaction as a strategy for learning" (Moore & Kearsley, 1996, p. 131) and Harasim (1996) points out that "... online education shares certain fundamental characteristics with the face-to-face educational environment: interactive group communication …. [where] people can interact with one another in such formats as dyads, seminars, group projects, or role plays, take part in e-lectures, or contact the instructor, tutors, or subject experts all online" (p. 204).

In a number of courses study groups are used and collaboration on assigned tasks is required. The procedure is approached in a number of ways and differences lie in their design. The assigned tasks, the expected outcomes (as individually recognizable parts or one group document), presentation of the work to the class, and policies regarding grading of outcomes and participation are a few of the variables.

[13] In all courses only asynchronous participation is mandatory; the few courses that offered synchronous modes (such as chat or telephone conferences) were voluntary.

MDE Courses	601 (02/00)	602 (02/01)	603 (02/01)	604 (09/01)	605 (09/00)	606 (06/00)	607 (09/02)	624 (09/00)
Study Groups								
Monitoring of study groups				c)			d)	
Students choose groups								
Group work graded								
Provide work to the class								

c) This course uses a co-teaching model; the nature of instructor activity differed greatly.

d) In this course study groups were installed to proofread and give feedback on each members individual project.

Design of study group work areas has changed in several of the courses. Generally two variations occur: in most cases the products are graded with respect to outcomes and in a few cases, participation and process are also considered as part of the grade. In some instances group work is required, but does not immediately affect the grade (this may even vary within the same course). Generally a graded group project is a third or fourth assignment, thus giving the class members the opportunity to become acquainted with one another before joining in a collaborative task. Sometimes (especially if a first task) the instructors propose a group rapporteur or leader.

Study groups are also used as a forum for peer review of students' individual assignments. Participation is not required and the outcomes were neither specified nor assessed. Another approach is used where study group work is required but not graded, whereby the collaborative effort serves as a stepping stone for a next (individual) assignment. This implies participation and provides a 'safe' opportunity to experience and train in virtual teams. In one course study groups are possible, but not mandated. The outcomes are graded based on the decision to work jointly or individually. This approach provides choice and demonstrates a high regard for student autonomy, decision-making, and diversity of learning styles. The task is specified in advance thus providing a structure on which to base ones decision and saves time with regard to content issues. Only one course did not in any way use study groups.

If there was more than one study group task the group stayed in their original constellation throughout the course.[14] The instructors' roles in this environment vary. Generally they do not state their roles in advance, but do monitor the study group's activities and comment, answer questions, or intervene when necessary. It is always possible to contact the instructor for clarification and help either in the study group, in the main conference areas or via email.

3.1.4. Assignments

A large diversity in the courses emerges in the assignment area. There are variations not only within a course, but also between courses, and sections of the same course (if different instructors teach) and many of the courses have been adapted and modified over time.

[14] Exceptional circumstances occur in small classes where individuals must be reassigned due to an insufficient number of participants in the original group.

MDE Courses	**601** (02/00)	**602** (02/01)	**603** (02/01)	**604** (09/01)	**605** (09/00)	**606** (06/00)	**607** (09/02)	**624** (09/00)
Assignments								
Some choice in assignments topics								
Advance information on assignment process and content in the syllabus								
Provide work to the class				c)				
Extent of individual assignment feedback	b:3	b:2	b:1	b:3	b:3	b:2	b:2	b:1

b) This rough scale depicts the author's perception: 1: extensive (regarding various aspects such as grammar, APA style, approach, use of literature and depth and broadness of scope and/or use of a criteria scale; 2) one or two of the previously mentioned aspects; 3) only a short remark or comment.

c) This course uses a co-teaching model; the nature of instructor activity differed greatly. In this course study groups were installed to proofread and give feedback on each members individual project.

In several courses a choice in the topic for a particular assignment is possible. Frequently the assignment process and content are provided in the syllabus and specific information with regard to due dates is specified. Personal feedback is almost always provided, if to differing degrees (the observations in the table are based on the author's perceptions and time point of the course and do vary). In some cases general feedback (to the class) on assignments is also given. Grading frameworks or criteria (including attached values) are provided only in a few instances, but development in this area has increased. Several courses offer 'best practice' examples that are posted prior to or after the assignments. Sometimes students are either required or requested to share their individual work with the class. Both approaches exemplify another way of increasing and enhancing the learning experience. In one course students were able to take tests to assess their skills, and immediate the feedback provided yet another form of a learning adventure.

Generally three or four assignments are required in each course and essays are the predominant style. All provide a variety of topics and approaches, including individual or group work and in many cases research beyond the posted reading is necessary or even required. Some courses have stayed with their original assignment design, while others have made more or less significant modifications. The following are examples of some assignment activities:

- writing essays, annotated bibliographies, memos, job advertisements;
- researching and investigating a variety of topics in DE;
- compiling and defining best practice examples, a matrix of characteristics for managerial skills and strengths, a list of crucial contemporary issues, a glossary of terms, descriptions of various aspects of DE;

- analyzing conferences, content, achievement of goals, advantages and disadvantages of elements, tools, instruments in DE, concepts, theories, applications, methods;
- identifying and describing components of systems, elements, strengths and limitations, lessons learned;
- developing project proposals, roll-out plans, case studies, typologies, scenarios, comparisons, indicators, linkages;
- demonstrating and applying mastery in designing a prototype class, choosing appropriate technologies, integrating course materials;
- providing appraisals, rebuttals, classifications, rational for ideas, arguments, standpoints, contexts, modifications, guidelines and requirements in regard to various issues;
- critiquing websites, tools, use of technology, research sources;
- participating in role-plays and analytical exercises;
- keeping a learning journal, calculating costs, drawing graphs, taking a particular position on an issue, supporting arguments;
- assessment and evaluation of activities such as conference threads, and critiquing peers work.

Based on Osborn's and Parnes' work (as cited in Kearsley, 2001) the above-described assignments cover many important aspects that affect the learning process: fact-finding, problem-finding, idea-finding, solution-finding, and acceptance-finding. The assignments incorporate elements from a number of theories such as metacognition, mental models, mastery, attitude change, creativity, and sequencing. They also take into account the various levels and domains of knowledge thus providing diversity and accommodating different learning styles.

3.1.5. Feedback

Feedback is closely related to the above described aspects of conferencing, study groups, participation, and assignments and thus focuses on pedagogical as well as social aspects (Berge, 1995). "In distance education, … research tells us that timely feedback is very important to learning outcomes and to persistence" (J. Brindley, personal communication, April 29, 2002). Feedback can take on several forms: as questions, by providing other perspectives through controversial, opinionated, or debatable statements, and can be addressed to individual students or to a class as a whole. Summarizing and 'weaving' are two forms previously mentioned.

MDE Courses	**601** (02/00)	**602** (02/01)	**603** (02/01)	**604** (09/01)	**605** (09/00)	**606** (06/00)	**607** (09/02)	**624** (09/00)
Feedback								
To students' individual conference contributions								
Generalized feedback on assignments								

Brindley (2002) also notes that a particular aspect of feedback is that of interaction with peers, which she describes as "… a very important form of feedback." (Personal communication, April 29, 2002). Tagg (1994) however points out that the function of recognition through the instructor should not be underestimated and generally is more valued and effective when it comes from the academic staff rather than from students' peers. Both types of feedback are practiced and encouraged throughout the MDE's courses.

3.2. Other Features of Learning in the MDE Program

Harasim (1987) suggests that asynchronous delivery modes are particularly significant for graduate-level learning. In this program, where students participate from around the world, time zones place restraints on the use of synchronous technologies. Nonetheless additional applications are found in several courses and various forms of synchronous deliveries are offered to students throughout the program. Chats features are technically available in all classes and can be organized through the instructor or self organized by the participants themselves. The use of audio and video clips not only takes other learning preferences into consideration but also provides as sense of variety. Using or requiring other applications such as excel, powerpoint, and CBT enhance and/or reinforces skills, which is generally appreciated.

MDE Courses	**601** (02/00)	**602** (02/01)	**603** (02/01)	**604** (09/01)	**605** (09/00)	**606** (06/00)	**607** (09/02)	**624** (09/00)
Use of additional elements								
Telephone conferences								
Chat								
Video/ audio clips								
Other (Powerpoint, Excel, CBT etc.)								
Provision of online materials								

All courses make use of the webliography feature provided in WebTycho and in most courses some or all of the required or optional reading materials are provided online. This is an invaluable resource – especially to students outside the U.S. - and is highly regarded.

4. Observations and Thoughts

Harasim convincingly argues that "Collaboration is among the most effective approaches to cognitive and social learning …. Writing skills are improved, through writing to real audiences …. [and it] introduces multiple perspectives on an issue or topic" (1996, p. 207). The program's courses were developed within Moore & Kearsley's (1996) author-editor model or in the course team model. Content experts discussed what should be taught, the design to be implemented, the objectives, readings, and assignments as well as supplemental materials for a particular course. In the described areas - conferencing, participation, study groups, assignments and feedback - a variety of models regarding structure, requirements, types of facilitation, scaffolding, and support are analyzed. The

instructors are not only experts in their fields, but highly motivated and devoted to making students' learning experiences deep, rich, meaningful, and successful.

Distance education students are a diverse and heterogeneous group. Research by Diaz and Cartnal (1999) indicates that distance learning students are strongly independent and "… showed a negative relationship between the independent learning style and the collaborative and dependent styles…. In other words people who were more independent in their learning styles also tended to be less collaborative and dependent…." (p. 133). In the MDE program students must and do collaborate and participate to construct knowledge and negotiate meaning, and evaluation has shown that student satisfaction and reception are very high. This coincides with further findings from Diaz and Cartnal:

> Online students also displayed collaborative qualities related to their need for structure (dependence) and their willingness to participate as good class citizens (participant dimension). Thus, although online students prefer independent learning situations, they are willing and able to participate in collaborative work if they have the structure from the teacher to initiate it. (p. 134)

Given these circumstances some issues to be considered in upcoming faculty development events and evaluation procedures are discussed.

1. (Re)adjusting and/or juggling with different instructional styles can prove difficult for students. These various approaches accommodate different learning styles on a course to course level, but do not suit all individual learners within a course. Instructors' proactive communication with regard to philosophy, reasoning, expectations, and outcomes, advance information on participation, collaborative work, assignments (dates and content), and the provision of tools and support to deal with difficult situations are all important aspects of new roles for instructors in the online environment. Research confirms that "Announcing agendas and assignments at the beginning of the seminar not only helped students to work toward the instructional goals, but also helped instructors to organize and moderate the online activities" (Ge, Yamashiro, & Lee, 2000, para. 15). These learning opportunities should not be underestimated or left unused. Berge (1995) also reflects on this managerial role and emphasizes that "… setting the agenda for the conference, the objectives of the discussion, the timetable, procedural rules, and decision-making norms" (p.24) are important elements in facilitating learning. Concurrence in this area has improved but should stay a topic of continuous exchange and debate in the program.
2. Forced participation can – for internal or external reasons - be troublesome for a number of students[15]. Highly structured approaches often result in similar answers and a high volume of tedious and repetitious reading, which does not seem to significantly contribute to the knowledge base, and makes it difficult for 'late-comers' to contribute substantially. And, if specified activities or study questions are missing, a class often only thrives if a number of students (either familiar or comfortable with the topic and process) take on the role of the peer-instructor. Transparency on how participation is merited - by frequency, length, depth, sources

[15] Cf. Beaudoin in this volume.

used, broadness of research and others – is not provided in any course. More communication and information regarding these criteria and its effect on grades seems appropriate and must be discussed in the future.

3. Closely related to this issue is feedback. If instructors rarely or never interact, students' frustration with their absence becomes evident. Ewing (2000) reports that "If ICT applications in learning do not have a significant and visible interaction with the teacher, there is the real danger that the learner will feel that the learning environment will be significantly depersonalized" (para. 61) and goes on to say that "Although taking a large amount of tutor time, this aspect of ICT in learning was recognized as being a significant contributor to its success" (para. 63). When instructors comment on students' responses in the conference areas and/or provide extensive feedback on assignments they promote a sense of acknowledgment and recognition. Bonk and Kim (1998) (as cited in Ge, Yamashiro & Lee, 2000) stress that "Scaffolded instruction makes the task evident, promotes a feeling of ownership, is individually appropriate, promotes collaboration, and fosters internalization" (para. 4). In communicating their reasoning, expectations, and practices as recognized experts in the field, instructors provide an additional learning opportunity within the course.

   Questioning by instructors and asking to pick up on peers' remarks are techniques that can stimulate these activities. Instructors' responses to students' comments, which further the development of 'conversations' along a particular line of thought are important strategies and are effectively supported by instructors modeling this behavior. Harasim believes that such interaction "… enhances connectivity and socio-emotional engagement to the learning process, as well as creating an intellectual climate that encourages participation" (1990, p. 54). These procedures and experiences merit discussions among the instructors in the program.

4. Several instructors provide a document on how to proceed and organize group work efficiently. However, only one has proactively provided advice or offered support on how to deal with issues such as general anxiety, lack of participation or commitment, loss of a group member, sense of disorientation or disorganization, disruption, or feared negative impacts on grades. This situation is particularly difficult if group work is mandatory and the outcomes are graded. Lack of self-determination and seemingly arbitrary constellations (alphabetically) can further increase anxiety. Diaz and Cartnal (1999) found designing "… collaborative activities among students that required students to initiate peer contact, and to conduct the collaboration with a minimum of teacher-provided structure and support" (p. 134) prone to failure. Online students only respond well "… if sufficient structure and guidance is provided by the instructor. The mistake … was [the assumption] … that online students would be self-directed, and autonomous, regardless of the type of learning activity" (p. 134).

   It is argued that these situations replicate 'real life' circumstances and must also be dealt with in students' professional environments. However Schermerhorn and Chapell remind us that "… electronic team meetings can cause problems, … particularly when members' working relationships are depersonalized and some of the advantages of face-to-face interaction are lost" (2000, p. 227). While instructors may imply and/or wish to create learner-centered environments, where students

take on responsibility for their learning, the virtual environment increases not only the complexity of these processes, but the finding of resolutions. The paced environments, time constraints, and performance pressure are factors that hinder careful and effective strategies to overcome difficulties. These circumstances need closer consideration and should be examined.

Twigg (2000) argues that "… we need to think more creatively about how to develop course designs that respond to a greater variety of learning styles rather than concluding that online learning is more suitable for one type of student than another" (para. 23). All instructors are knowledgeable and aware of the issues discussed above. Accommodating student's learning styles, supporting the enhancement of necessary learning skills (writing, research, and critical thinking abilities) and maximizing learning experiences in a predominately cognitive and online learning environment is a considerable undertaking.

5. Conclusions

The selected courses were designed, developed, and/or modified for the MDE program. Faculty members are SMEs and knowledgeable and experienced in distance learning. As instructors they define learning outcomes, the applications of that learning, the content, and are sensitive to potential difficulties students may encounter. Learning, collaboration, co-operation and participation take place in a variety of areas and activities. The students are active and move beyond merely reading texts. They (learn to) interact and deal with each other, the instructors and with learning materials and styles individually, in groups, and under the tutorial guidance of the instructors.

In the elements, aspects and structure of the MDE courses described in this paper these circumstances, approaches and roles have been illustrated and outlined, and some suggestions for thought and improvement made. Substantial efforts have been undertaken to develop and implement courses and methods that take these factors into consideration. Establishing consistency and coherence is supported through continuous quality assessment and ongoing adaptation and improvement of the courses. Further important steps to build and widen the experience and knowledge base within the program were initiated and discussed at the 2002 faculty meeting in Oldenburg. Space and resources were provided that allowed instructors to:

- discuss various learning styles and reflect on appropriate learning strategies,
- exchange experiences with regard to the online learning environment, design elements and aspects,
- share course documents such as syllabi, course content and required and optional readings,
- discuss burning issues, and
- systematically incorporate this information in ones own teaching and learning process.

These are significant measures to 'set the stage', not only in the MDE program but in online learning in general. They contribute to enhancing the quality of the courses and the program as well as the learning and teaching experiences for students and instructors, while a new learning paradigm is being created and experienced.

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Experiences, Observations, and Applications: A Student's Personal Account of the MDE Program

The MDE program offers students an exciting, flexible, and unique educational opportunity for studies in all aspects of distance education. This paper begins by briefly describing the author and the factors that led to his enrollment in the program and then proceeds to outline his first-hand experiences and general observations, drawing upon relevant research as appropriate. The paper then goes on to explain how the program has provided the author with immediate applications in his career as well as guidance and suggestions for future endeavors. The paper concludes with a discussion of key issues for the program to consider.

"To change and to improve are two different things." - German proverb

Introduction

The Master of Distance Education (MDE) program, begun in Spring 2000, is a joint effort between the University of Maryland University College and the Carl von Ossietzky University of Oldenburg in Germany. This innovative program is offered exclusively at a distance via Web-based instruction and requires only that students possess a bachelor's degree (there are no testing requirements). As the program has now passed its two-year anniversary, a broad review of its accomplishments and status is in order. This paper will offer a general overview of the author's experiences and observations, and then conclude by illustrating how the program's instruction and experiences have directly and indirectly influenced his work environment and professional goals.

Why MDE?

I am presently serving as the Coordinator for the Business Programs department and as an adjunct instructor at Santa Fe Community College in Gainesville, Florida, a mid-sized institution (present enrollment is approximately 13,000) serving Alachua and Bradford Counties. Beginning in 1998 the college began developing its Open Campus program that offers Web-based versions of many of its courses, an effort that has seen steady and substantial growth (approximately 25% annually) in the ensuing years. As my department became more and more involved in this effort, my awareness and appreciation for distance education (DE) grew. Simultaneously, it became apparent to me that in order to advance or obtain increased teaching opportunities in higher education it would be necessary to complete a minimum of a master's degree (I had begun a traditional master's program in sociology several years earlier but was unable to complete it due to conflicts between course scheduling and my professional responsibilities).

After researching several possible graduate programs offered through traditional education providers (including my local alma mater, the University of Florida), I began investigating DE alternatives due to my dissatisfaction with the structure and curriculum of available traditional providers, a need for flexibility in my learning due to my varying work schedule (cf. Khan, 2001), and a growing professional curiosity regarding DE.

Although I had never personally engaged in distance education as a learner, I was quite comfortable with most forms of computer mediated communications (CMC) and felt that at this stage in my life I would be sufficiently disciplined and dedicated to complete a degree via DE, especially one offered through Web-based methods which would allow for greater and more immediate interaction between myself, the instructor, and my classmates (cf. Hülsmann and Peters in this volume; Latchem & Hanna, 2001). A quick reading of the available literature increased my feelings of confidence in this decision, at the same time encouraging me to seek out a fully accredited program from an institution with both name recognition and a strong reputation in order to increase my marketability as an administrator and as an educator in higher education. In my position I have served on numerous search committees and have witnessed first hand the prejudices many educators possess regarding credentials awarded by private for-profit institutions, especially those offered through DE (cf. Jones, 2001).

After extensive research through both print and Internet articles (demonstrating Rumble's (2001) observation that the Internet greatly facilitates comparative shopping between education providers), I discovered several articles that described UMUC in highly favorable terms. Although I would be required to pay out-of-state tuition and fees throughout my studies, I became thoroughly impressed by the description, objectives, faculty, and structure of the program, which promised both theoretical and applied orientations to its coursework and offered studies in a broad assortment of subject areas in DE. I was also attracted to the fact that the program was a joint effort between UMUC and Oldenburg University, promising a more international perspective to my studies. After corresponding with the director of the program, Dr. Eugene Rubin, who allayed my final concerns, I enrolled in the program and began my coursework in the summer of 2000.

Experiences

In the MDE program, class sizes to date have ranged from approximately fifteen students to no more than twenty-five, a situation generally comparable to many other Web-based programs (Rumble, 2001), including that of my college, and in accord with recommendations offered by Haughey and Anderson (1998). It is my opinion that these modest class sizes facilitate and encourage the guided didactic conversations (Holmberg, 1995) that have been common throughout my coursework. Levels of interaction with instructors have tended to be high, involving primarily asynchronous forms most commonly conducted through conference (discussion) boards and e-mail (cf. Hülsmann and Peters in this volume), though occasionally chat rooms and telephone conferencing have been utilized as well. It is my belief that the interaction between my instructors and myself has actually been higher on average than that experienced in my face-to-face classes at both the undergraduate and graduate level. Additionally, I would further argue that the feedback I have received on both my conference postings and on my papers has been more thorough, considered, and helpful as well. Responses to queries or postings have been timely overall, tending to be given within a day or two and demonstrating that instructors monitor their class conferences frequently; in those few cases when it has not been the rule, students have been quick to point this out to their instructors who have generally been receptive to criticism. The instructors and visiting experts in my classes have been a diverse lot, composed of well-respected academics from the U.S., Canada, England, Sweden, and Germany to date who have facilitated students' learning

from both theoretical and applications perspectives. This has directly and indirectly fostered a more international orientation to MDE studies, allowing non-U.S. students to feel more comfortable as well as broadening the awareness of U.S. students. Courses have been generally well organized, with instructors making extensive use of advance planners and providing clear guidance for the assignments given. When questions have arisen regarding requirements and expectations, most instructors have demonstrated a sincere effort to alleviate any confusion through sample problems, essays, and open discussion.

With regards to the structure of the courses, all are semester based, deadlines are given for completion of assignments, schedules have been created and maintained for the flow of curriculum, and all instructors have insisted to one degree or another on students' participation in class conferences (with some assigning a portion of the final grade awarded based upon it). In short, in many ways these courses are "virtual classrooms," resembling traditional instruction; with this said, however, there are many differences to be found (cf. Hülsmann in this volume). With few exceptions, instructors have demonstrated openness regarding paper and project assignments, allowing students to pursue interests more in line with their professional needs and goals (i.e. academic, government/non-profit, or commercial) (cf. Peters in this volume). To a large degree students have been encouraged to draw upon their personal and professional experiences in conference discussions, a practice that appears to increase the contextual understanding of subject matter. In addition, the program has a required set of core courses that make up a majority, but students are allowed a choice of electives to complete their program requirements that serves to focus their studies towards areas of greatest personal interest and need.

Students in my classes have tended to fit the general model of DE (Holmberg, 1995) in that they are to a large degree non-traditional and working; needing flexibility for their studies due to personal, family, and/or professional circumstances; and often simply possessing a preference for this mode of learning. Students have come from all walks of life: educational institutions (all levels), business, government, military, and some retirees pursuing learning for learning's sake. Although the majority of students are from North America (most from the U.S.), others have been from Asia, Europe, and Latin America. This diversity has added significant value to my learning experience, exposing me to the broad assortment of perspectives and experiences shared by my classmates (cf. Harasim, 1996; Mason, 1998).

Once again, interaction has been primarily through class conferencing boards although e-mail, chatrooms, and the telephone have been utilized as well. While it has been the rule in my courses that students are encouraged to discuss any subject they might deem appropriate and applicable to the course' subject matter, conference postings tend to be primarily curriculum driven overall. However, all classes have maintained a conference board for general use as well as for social messages to the class, humorous postings, and miscellaneous messages that are not directly related to official class discussions. These have proven to be popular, allowing students an informal space to address classmates as well as to lighten the mood through the sharing of humor or personal announcements (e.g. earning a certificate in the program, marriage, the birth of a child, etc.). It is my opinion that these practices have further served to create a greater sense of community between students, allowing them to see another dimension of their peers and foster the creation of a cohort group (cf. Harasim, 1996). Chat sessions, although not terribly

common to date, appear to also serve this function as well (cf. Day, Crump, & Rickly, 1996; Suguri et al., 2002).

With regards to access to literature, instructors with the assistance of the university's copyright clearing office, routinely upload reprinted texts from journals and books to make them available online. Additionally, the UMUC library has an effective inter-library loan system established as well as several databases providing access to a large number of abstract collections and entire articles. The study of DE itself benefits enormously from a robust community of scholars and practitioners who have made their research freely available online through Web-based journals and periodicals. Additionally, my fellow students have contributed greatly towards a broader understanding of DE in that they have frequently shared online and text references from their professional and academic experiences.

In terms of workload, my experience has been that it is roughly comparable in terms of total hours committed to that of traditional graduate level work. The reading load is perhaps a bit more, in that in addition to the course assignments one must include all conference postings, which even with practice through techniques such as "skimming and skipping" (cf. Hülsmann in this volume) can be time consuming to keep up with for active classes. As text-based replies by their nature require greater amounts of time to prepare, this too adds to students' workloads. On average, however, the program's general recommendation that students budget 10-15 hours per week per course appears to be sound. As an educator involved with the maintenance of my institution's accreditation, I am aware that the issues of appropriate levels of student achievement and equivalent quality of programs between face-to-face and online courses must always be kept in mind (Commission on Colleges of the Southern Association of Colleges and Schools, 2000).

Observations

In addition to the experiences described above, several observations might be offered regarding the program. First, online courses must be carefully constructed and instruction and directions extremely clear in order to avoid confusion and anxiety on the part of students. For example, something as simple as a deadline or appointment for an online chat must be carefully explained, taking into account time zone differences, Daylight Savings Time that may or may not be in effect, potential technical difficulties, etc. Instructors must take great care to reduce to a minimum discrepancies between course materials; in some cases, instructors would provide a syllabus and a general outline as well as an additional detailed course outline that were not in agreement with one another. Any possibility for confusion should be considered, as well as potentially vague or idiomatic language that might prove troublesome to students whose primary language is not English. In short, if anything can possibly cause confusion for students, it will; the goal should simply be to reduce this as much as possible.

Second, in response to criticisms by some, CMC in online courses is indeed capable of producing high quality, meaningful discourse between faculty and students (cf. Hülsmann and Peters in this volume). For example, Clifford Stoll (1995), a famous critic of DE, has argued that " ... superficial network interactions don't carry the same risks as face-to-face conversations do. At the same time, they lack depth, commitment, and ordinary etiquette" (pp. 23-24). He further argues that as computers transmit data at higher and

higher rates of speed, people have come to feel a sense of urgency to respond as quickly as possible, constructing their posts/e-mails with little reflection and proofreading. People online, he argues, feel freed from many of the social constraints on behavior found in face-to-face communications, and they are more likely to respond emotionally, i.e. callously or rudely. One might challenge this argument with the observation that social context appears to be an influence online just as it is off-line, a situation that apparently was demonstrated by research conducted by Nipper (1989) that revealed different modes of communication between "home-based" and "company-based" learners.

This student has not experienced to any significant degree Stoll's criticisms. Instructors have provided clear instruction and expectations for students in terms of their postings (writing in a scholarly manner, often requiring references, with courtesy being the rule) (cf. Harasim, 1996); at the same time, the majority of students do not appear to even need these reminders. Politeness is the norm, perhaps even to an extreme; at times I have strongly suspected that some students are reluctant to challenge the statements and opinions of classmates for fear of appearing confrontational (cf. Hülsmann in this volume). Of course, this is certainly also a problem in face-to-face environments, but in comparison I would argue that overall this has been less so online, with "group think" probably being less frequent as well .

CMC offers several advantages in that it gives learners time to compose their responses, offers them control over when to respond, enhances valuable literacy skills, and does not penalize those for whom the text language is not their first language (Harasim, 1996; Haughey & Anderson, 1998). I have been impressed by the quality of student postings, which are very often thoughtful, carefully written and considered, and frequently insightful (cf. Harrison & Stephen, 1996). I have greatly enjoyed and benefited from synchronous and asynchronous CMC with my peers just as I have with my instructors and guest lecturers. Furthermore, it is abundantly clear that our classes are not simply "cookie cutter" courseware but that they are led quite visibly by individuals: students in the program have expressed on many occasions the very different experiences they have received from their instructors and guest lecturers, all of whom have exhibited a particular "style" in their feedback, oversight, and communications via CMC (cf. Beaudoin in this volume).

Stoll (1995) further argues that the computer itself is a barrier to close teaching relationships in that it reduces face-to-face communications which serve a variety of functions (academic socialization, mentor-mentee development, role modeling, etc.). Only time will tell as to whether or not his naysaying is born out, but this author can report that he has personally benefited from the role modeling of his instructors as well as their encouragement throughout my studies. Additionally, research and publication opportunities have been offered to students, and I can only predict that these will increase as the program matures and closer relationships form between instructors and students (and graduates).

A third observation that might be offered is directly related to the above two and my previously described experiences: if Moore's theory of transactional distance (Moore, 1993) is applied to the MDE program, it could be argued that overall the program offers a fairly moderate level of transactional distance. Moore's first constitutive concept, *dialogue*, was given priority in his list and is well represented in the program as I have described above. While traditional education neglects or often disdains dialogue in

favor of monological presentational methods (Peters, 1998), distance education must pedagogically embrace dialogue as a higher form of learning and teaching where students may learn to argue purposefully and in the language of their discipline; to support, analyze, or discard their own theoretical views; to evaluate critically and inquire into knowledge presented by other students; reflect critically and self-confidently on the knowledge they have gained and the methods used; as well as a host of other skills (Peters, 1998, pp. 36-37). These skills cannot be instilled in students merely through printed DE units (Peters, 1998, p. 37), a position many researchers (Chen & Willits, 1998; Holmberg, 1995; Peters, 1998) support.

The highly interactive nature of CMC facilitates the development of these skills, allowing for less *structure* to be imposed. As mentioned earlier, the program imposes a certain degree of structure upon its students while simultaneously allowing students to steer their studies towards personal objectives through the selection of projects and assignments, elective courses, and to a large degree their participation in the conferences (cf. Harasim, 1996; Harrison & Stephen, 1996), creating an environment that encourages the development of greater levels of *autonomy* in its students (cf. Peters in this volume; Haughey & Anderson, 1998). Saba (1990) discusses the concept of *virtual proximity*, which describes the high degree of closeness that might be simulated by the use of new integrated telecommunications technologies. He explains that both dialogue and structure may be optimized through the use of virtual proximity, and he sees a *cybernetic relationship* between the two concepts, where through a control loop both are continually adjusted. This has been demonstrated throughout the program, where feedback is aggressively sought and provided by instructors from and to students. It may be argued that the MDE program is demonstrating excellent progress towards becoming a model of virtual proximity in its learning environment.

Several observations may be made regarding students as well. Students in the program have tended to view other students as well as instructors in a very egalitarian manner (cf. Day, Crump, & Rickly, 1996; Harasim, 1996; Harrison & Stephen, 1996; Haughey & Anderson, 1998). It is very common for students to address instructors and (to a lesser degree) visiting experts by their first name, dispensing with titles on the whole (students are always addressed by their first names as well). Instructors have accepted if not encouraged this. This is to be expected, of course, in a program that is predominantly composed of non-traditional, professional students. The "sage on the stage" model has been largely replaced by the "guide on the side" model, a method which has proven very popular with students (and who have voiced dissent on those occasion when they felt it was not being demonstrated).

Of course, papers and projects are assigned and deadlines given as in traditional courses, and it has been this author's experience that students in general comply with these structures as is normally expected. Where dissent has arisen, however, is in the area of required conference participation. A vocal minority of students has periodically criticized these requirements, arguing for greater autonomy and/or the value of "witness learning" (cf. Beaudoin, Hülsmann and Peters in this volume; Rourke, Anderson, Garrison, & Archer, 2001). Although student learning certainly takes place outside of required papers, projects, and public participation, it can be argued that a moderate level of CMC participation substantially improves the overall quality of the DE learning experience, a position taken by many researchers (Harasim, 1996; Harrison & Stephen, 1996; Haughey & Anderson, 1998; Peters, 1998; cf. Beaudoin, Hülsmann, and Peters in this volume).

Applications

Throughout my coursework, many students have reported that the training they have received and the literature they have been exposed to have led to immediate applications in their professional lives. Harasim (1996) discusses this aspect of online learning, describing the linkages it creates between school and work and that online courses help to dissolve the dichotomy between theory and practice, increasing the continuity between learning and professional life. In reviewing my own situation, I can report that I have effectively utilized these experiences in student support, instruction, and administration at my educational institution.

With regards to student support and instruction, I have begun coordinating and developing online materials and services to support learning and advisement for my department in response to the desire from both faculty and students for more flexible learning and student services. We have converted all print advisement materials to Web-based versions, creating FAQ's, and all handbooks and forms are now available as downloadable PDF files. All instructors are now being encouraged (and supported) to make their syllabi, notes, and other handouts available online, as well as to incorporate CMC into their course structure. This has resulted in the growing use of conference boards, chat, and instant messaging, with a small but growing number of instructors blending their online and face-to-face classes in the use of these resources.

My chair has also tasked me to begin directly supporting our online instructional efforts by assisting instructors in the development of Web-based materials and reviewing student surveys in an attempt to identify and address potential problems. At my suggestion and following a growing business practice, our department has also implemented a Java chat service that allows visitors to our Web pages to chat with our student adviser as they view our online materials. This service has proven to be popular, allowing students (and the college) to save on long-distance phone calls as well as providing more inviting and timely support to our students (who have used the service to contact our office from as far away as Africa, Europe, and Asia). A further project I have taken on for myself is the creation of a directory of Web resources for our programs, collecting those already being used by our faculty and other sites of note to facilitate the incorporation of Web-based information and research into their lessons.

In terms of administration, I have been able to utilize resources and information obtained through my courses to advise my department chair regarding our participation in online credit courses in such areas as scheduling, cost-benefit analysis, and long-term planning. Furthermore, I have provided assistance to the college's Academic Technologies department, which supports and coordinates college-wide DE efforts, by offering DE resources on topics such as copyrights and intellectual property, economics of DE, ICT, etc. and was tasked by my chair to develop Web-based versions of our departmental handbook and to create a hypertext adjunct faculty handbook. Additionally, I have lobbied successfully for the requirement that all new faculty in our department possess a minimum level of skill in ICT to support the growing demand for Web-based and distributed learning.

Conclusions

The MDE program has provided both theoretical and applications-oriented approaches to the study of DE. Its creators and instructors have developed a supportive and challenging environment while also meeting the needs of students seeking greater levels of autonomy and flexibility in their studies. However, the exercise of periodically reviewing any endeavor provides opportunities for objective assessment of both its status and methodology, activities that of course are of benefit to a young program such as the MDE. Economic considerations are of obvious interest, perhaps more so in the current climate of ever-tightening budgets, anticipated and unanticipated revenue shortfalls, and rising costs and increasing enrollments. Educational objectives must be reviewed as well. Additionally, the program (and university) should review whether or not tuition and fee rates are too high or technical requirements prohibitive. It is generally the practice among dual mode institutions (those that provide both face-to-face instruction and DE) in the U.S. that out-state students pay triple the normal tuition and fees, with the rationale being that the student and/or his or her family have not paid any taxes required for the establishment and maintenance of the educational institution – in other words, they have not paid for their "fair share". This is the policy of UMUC as well. Many educators and some politicians, however, have begun challenging this, arguing that DE by its nature expends and requires fewer resources in terms of physical infrastructure as well, etc. As a result, the idea of an "e-rate" for online courses, where tuition would fall somewhere between in-state and out-of-state, is now being advocated by some (cf. Carneval, 2002). Michael Moore (Shin, 2000), worried that technology and money are driving the distance education movement (at least in the U.S.), states:

> It seems that this mission [of DE] to reduce inequality does not pre-occupy many of the newer providers – who regard on-line distance education as a consumer commodity. It can be bought, if one has the purchasing power, but is inaccessible otherwise. Not only is distance education no longer able to achieve its traditional goal of narrowing the gap between those with greater knowledge and those who have less, but in the on-line era may even contribute to widening it. (Shin, 2000)

Other questions should be asked as well. Is there sufficient diversity in its student body and faculty with regards to background, nationality, and ethnicity? Has the program achieved success in regards to retention and completion rates? Could the program benefit from the establishment of a system of TA's and/or mentors? Should testing (i. e. GRE) requirements be implemented? And additionally, has the program been successful in helping its graduates find positions and advancement in the field?

In the fast-changing discipline of DE, which is heavily influenced by the even more rapidly changing field of ICT, the temptation might be to incorporate or embrace innovations as they become available. Bates (2000), however, reminds us that "... technology is, by definition, a means to an end, not an end in itself" (p. 45), a sentiment echoed by Holmberg (2000) who adds, "It is not our task to propagate technology but to help students to learn." Bates' (2000) ACTIONS model provides a useful guide for researching and evaluating new technologies from all perspectives, including those of both the educational institution and its students. The administrators and instructors of the MDE program (and UMUC as a whole) have demonstrated restraint and careful consideration before implementing new modes of ICT, soliciting feedback from

students on many occasions. Generally speaking, many students have voiced concerns over the mandated use of synchronous communications (chat, instant messaging, phone conferencing), pointing out that time zone differences pose difficulties, overseas connection charges may be incurred for phone conferencing, and that the use of these technologies violates the ideal of "anytime/anywhere." As a result of these dialogues, to date synchronous communication has been utilized sparingly in my experience, although it remains an option open to students to use at their discretion, a compromise that appears to be acceptable to the majority. Regarding such issues, Moore and Kearsley (1996) offer the following sage advice: " ... what matters eventually is not so much what media are employed, but *how* they are actually used" (p. 98). Thus, while the MDE program offers much to students in the way of innovation, a certain degree of conservatism has served to avoid some potential pitfalls of online DE.

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LINDA J. SMITH

Assessing Student Needs in an Online Graduate Program

The online Master of Distance Education (MDE) program at the University of Maryland University College (UMUC) has an excellent Foundations Course and a variety of student support services; however, many new graduate students need additional assistance to prepare them for future courses and improve their prospects for being trained as managers and leaders for distance education. This paper outlines specific needs of students and recommends ways to identify and meet those needs. Students should be evaluated regarding their readiness for graduate work and assisted in developing an educational plan based on a holistic perspective. Direction for students who need assistance can motivate them and enhance the course experience for fellow students.

1. Introduction

Many students entering the online Master of Distance Education (MDE) program at the University of Maryland University College (UMUC) do so as new graduate students. Both new and more experienced students may be taking their first online course. Although this situation has been recognized and addressed with helpful support, such as the WebTycho tour, the online library course and the offer of a tutorial for improving writing skills, there are broader student needs for both new and experienced students. These needs relate to the ability of students to perform at the graduate level and to the ability of the program to fulfill its mission statement to create leaders and managers for distance education (DE).

This paper will examine the needs of MDE students both as individuals and as participants in the program, particularly with respect to the program's mission. It will suggest some ways to identify needs and present recommendations for options to consider in addressing them. Included in the discussion will be comments about resources required and ways they could be provided in a cost-beneficial manner. Although the focus is on the MDE program, many of the concepts discussed can apply to any online graduate program.

2. The Needs

From their observations of online classes, both instructors and students in the program can readily list many of the skills lacking in participants. These needs and those less obvious may require a comprehensive assessment strategy and a team approach to address them. Students are not always aware of their deficiencies, and those with the greatest needs may be the least able to utilize the existing tutorials, suggestions, and learning aids.

The first question that may arise is "Should the staff for a graduate program accept the responsibility for addressing personal needs and building skills that students should or could acquire elsewhere?". There are several inter-related points here. At the front door, a relatively open enrollment policy implies acceptance of students with varying skill levels, some of which should have been acquired at lower levels of education. At the back door, the mission statement describes a "student product" that has the combined skills necessary for leadership and management in DE. The investment of a reasonable effort

in the development of the whole student can pay significant dividends, particularly if ways can be found to accomplish that goal in a cost-effective manner. If the investment is not made, the problem of inadequately prepared professionals may be perpetuated in DE as it is in other fields.

Even for the student who comes into the program with good basic skills, there are needs that extend beyond those that are addressed in individual courses. Peters (1998) describes DE students as being different from campus-based students in significant ways, including that they are usually employed adults. This characteristic has implications beyond those discussed by Peters. The educational program for adult students may require a shift in perspective from that of campus-based students. The campus-based student leaves the educational institution to enter the job market at a basic level, even if it is in a "professional" capacity. The adult DE student may need to be qualified to compete for jobs at a higher level if current living standards are to be maintained. In the MDE program, this may mean finding ways to provide students opportunities to gain experience in applying concepts and exercising management and leadership abilities.

The "whole student/whole program" perspective is in concert with the systems approach advocated by Banathy (1995), Betts (1992), Reigeluth (1992) and others. While this perspective may exist in the development and ongoing enhancements of the MDE program, a sharper focus may be possible as the program evolves.

The list of student needs can be divided into personal and professional categories. While the list of personal needs can be extended to include things like financial aid, those discussed here pertain directly to participation in the MDE program. The list of professional needs includes communication skills, thinking skills, and organization skills. Not all students would achieve maxim levels in these areas, but general improvement would result in (a) an enriched learning experience for all students in the program; and (b) persons better prepared to take their DE knowledge into the workplace.

Student Needs

Need	**Comment**
Personal	
Feelings of competence and being connected	Burge and Roberts (1998) identify these two needs as key motivators for adult learners. While efforts can be made to meet these need for students in individual classes, it might be beneficial to address these needs at the program level.
Understanding of online class work	Students need to understand and be encouraged to commit to their responsibilities for online interaction and group participation. A more proactive approach may be required for dealing with the problem of students who do not contribute adequately to online discussions and group projects.
Understanding of graduate level performance	Students need a baseline of graduate level performance against which to assess their own preparedness and needs.
Setting of goals and objectives	Students may need assistance in exploring options for use of their MDE education, whether as degree holders, certificate holders, or individual course participants. In addition to understanding their options, they also need to understand what special requirements any of these options may have. Included in this analysis is their own assessment of learning style, personality type, past education and experience, etc.

Professional	
Communication Skills	The importance of communication skills has been emphasized in a variety of areas in the MDE literature and course materials. Perhaps the biggest challenge is that of helping students to understand the extent of their developmental needs in this area so that they will be motivated to take advantage of the assistance that is available.
Writing	The need for further development of writing skills is acknowledged not only for under-graduate students but graduate students as well.
Online discussion	Online discussion has its own techniques for effective communication in an environment where no visual cues are present.
Thinking Skills - Analysis/Synthesis	Although assignments within courses can be highly challenging and require a student to exercise advanced thinking skills, research papers and group projects are not likely to provide practice at the same level of critical thinking, creativity and problem solving that will be demanded in a professional position.
Critical thinking	There is a need to expand the development of critical thinking to encompass a broader context. Students can have a tendency to lose sight of relationships of subsystems to the larger entity. Another way to express this is to say that the macro level can be forgotten when examining the micro and vice versa.
Creativity and problem solving	Exercising creativity and developing problem solving skills requires an approach beyond the traditional assignments found in an online class.
Ability to stay focussed on the topic	A lack of ability to stay focussed on a topic in online discussions can translate into an inability to remain focussed on goals and objectives in a professional setting.
Learning how to get beyond the level of personal experience	Even after completing the introductory course, students can still have difficulty by generalizing too much from limited experience. There is a need to develop a much broader perspective and awareness of national and international practices, conditions and issues.
Team/Management/ Leadership Skills	Learning to work in study groups is an important feature of online course work; however, many students have little knowledge or practical experience regarding the formation of teams, group dynamics, or project management. These things are difficult in a face-to-face environment, and dealing with them online greatly exacerbates problems. The needed skills cannot be adequately developed merely by assigning students to work in study groups.
Group work	Students need assistance in learning how to form teams (when they are not pre-assigned). They also need to understand how to define tasks needed to complete a project, how to plot a timeline, and how to monitor progress and take corrective action. In addition to learning the roles in collaborative writing, they need to understand group dynamics and the various stages of team development.
Management	Group leaders may exercise management skills while working on class projects, but a different environment is needed for the development of the broader range of abilities that must be present in the professional DE manager of a department or an institution.
Leadership	In an online course environment, students who are already confident leaders tend to lead, while students who lack confidence may remain followers even though they have leadership potential. The development of leadership skills in a larger proportion of students requires an effort specifically designed for that outcome.

3. Assessment

Instructors of individual courses should not be assigned the primary responsibility for assessing student needs and addressing them. Although some instructors already provide assistance for basic skills, such as writing, the course environment is not always the most appropriate or most effective place to identify and deal with student needs. Nor should the faculty advisor bear all of the responsibility. The key member of the assessment team must be the student, who has the support of a group that includes a faculty advisor, instructors, and mentors (who may be more advanced students). In addition, the assessment team needs a strategy and a set of integrated tools.

3.1. Strategy

The effectiveness of an assessment strategy is likely to depend on the degree to which the institution takes an active role rather than waiting for students to request assistance. The strategy and its accompanying plan to address needs must not depend on a new student's ability to direct *all* aspects of her or his educational program. The delicate balance between the student's autonomy and the institution's responsibility to ensure that the student has every opportunity to succeed has been acknowledged as something of a dilemma. Holmberg (1995) discusses the two opposing questions. On one side we can ask whether responsible, adult students shouldn't be left to search out their own solutions and ask for support when they perceive it is needed. On the other side, the question to be asked is whether the special circumstances of adult learners merits special support. While respecting the student's right to choose, it can be helpful to provide an early realistic appraisal of strengths and weaknesses and a set of guidelines for maximizing the first and reducing the latter. Characteristics of an assessment strategy for an individual might include:

- determining the student's educational goals;
- assisting the student in performing a self-assessment of needs relative to goals;
- feedback by instructors in individual courses to the assessment team; and
- development of an educational plan that includes ongoing feedback about the student's progress (i.e., information beyond course grades).

3.2. Self-Assessment Tool

New graduate students may not have a clear picture of what they want to accomplish beyond taking courses for upgrading skills, acquiring a certificate or working towards a degree. Those who believe they have well defined goals may revise their thinking as they proceed through the program. More specific goals than those mentioned are based on a good understanding of one's interests, personality type, abilities, strengths, weaknesses and perception of self - all of which must be considered relative to the opportunities that may be available upon completion of the educational program. Providing a set of guidelines for performing this assessment would be a valuable service to students and a helpful resource for faculty to use in their advisory function.

A self-assessment tool can be a valuable "living document" that the student creates at the beginning of her or his education program and updates as experience and reflection dictate. It can be a focal point for the development of an educational plan that will be

designed to enable the student to reach her or his goals. The following is a list of some of the features a self-assessment tool might contain:

- statement of goals and objectives;
- student attitudes and expectations regarding graduate school, DE, team work, etc.;
- examination of personal learning style(s);
- analysis of personality type;
- self-perception concerning the student's ability to function as a leader or manager;
- review of educational history;
- review of job experience, particularly in leadership, management, and team-building; and
- student perception concerning the characteristics needed to serve in the professional capacity as described in her or his goals and objectives.

Many of the items on this list can be developed by the student's review of personal history and self-reflection. Others, such as the analysis of personality type and leadership style, may require the use of instruments created for this purpose. Students may already have the results from instruments such as the Meyers-Briggs test for personality types (available at http://meyers-briggs.com/) or the Hersey and Blanchard (1993) instruments for evaluating leadership style, perception of self, and adaptation of behavior to situations.

Students coming into the program may have no formal leadership or management experience. They may not have considered how the mindset of a leader differs from that of the traditional follower. For example, in a recent MDE class where students were asked to form their own teams for study groups, several students posted messages with their group interests and ended with the statement that they hoped they would be picked for a team. It was interesting that in the class environment, all were free to take whatever initiative they chose to form teams. No one was instructed to wait to be picked. The experienced leaders in the class immediately set about collecting team members.

Some of the material in the student's self-assessment document, such as a description of personal learning style, might be helpful information to include in the short descriptions students are asked to provide for themselves upon beginning a new class.

The exercise of self-assessment can be valuable on several levels. In addition to serving as the foundation for the student's educational plan, it can provide another opportunity to develop skills and experience in leadership and management. In conducting a self-assessment, preparing documentation and maintaining it throughout the educational program, the student is assuming the responsibility for managing her or his education. She or he is taking the lead in identifying needs in coursework and personal development. And finally, the student is creating a vision of her or his future.

3.3. Ongoing Assessment

Having course instructors provide feedback to the assessment team can reduce the current burden instructors face in trying to deal with student needs that do not relate directly to the course content. Sometimes this burden takes the form of extra tutorial work for basic skills that instructors voluntarily perform to help the student succeed in

the course. It may also take the form of the instructor having to resolve problems in class proceedings, such as study group collaborations. Finally, the instructor may observe needs in advanced skill areas that would be more appropriately addressed by the assessment team and the overall educational plan rather than in that particular course.

4. Suggestions and Recommendations

The following is a list of suggestions and recommendations that could be considered for assessing and addressing student needs in the MDE program. A number of these could also be generalized for any online graduate program. Each item contains a description and comments about ways in which resources could be provided to implement it. The items offered include:

1. MDE Program Manual
2. Tutorials
3. Program/Learning Matrix
4. Virtual Institution Project
5. Student Mentoring Program

Since the MDE program includes the concept of a student portfolio, a number of the items could be produced as portfolio projects that would be valuable to reference in resumes when graduates begin to look for a position in DE. Other items on the list describe activities that could be equally beneficial to include in a resume.

4.1. MDE Program Manual

Description

A learner's manual can be an indispensable tool for a student in a course. Holmberg (1995) discusses the concept of advance organizers and the circumstances under which they can be useful in helping the student move from what she or he knows to what she or he needs to know. The advance organizer is something more than a summary or overview. The concept can be adapted and raised up a fractal level (cf. Tiffin & Rajasingham, 1995) to extend to the student's entire graduate program, whether it is for a degree, certificate, or lesser amount of coursework.

Although there is considerable information available in various forms on the UMUC web site, the MDE web site, in tutorials, and from distribution within courses, it could be helpful to: (a) consolidate those materials (conceptually if not physically); (b) add features like the self-assessment tool and guidelines for an educational plan; and (c) organize them as a management guide for the student's education process. The manual might be produced in paper form, as a UMUC web site from which the student could download material, or a combination of both.

Providing such an aid could increase the student's feelings of competence in directing her or his education program and being connected with the institution.

The following might be included in an MDE Program Manual:

- table of contents and links/directives for locating all manual materials;
- introduction and guidelines for how to use the manual (with distinctions for degree, certificate and limited course study students);
- overview of the MDE program (existing);
- description of MDE courses (existing);
- description of employment options in DE and the course work, skills and experience related to each (partially existing);
- self-assessment tool;
- format for education plan;
- list of learning resources and opportunities to meet educational needs beyond the MDE courses (partially existing);
- tutorials (some existing) on individual writing, team development, group work, collaborative writing, project management, etc. (partially existing);
- description of mentoring program;
- directory of persons, services, resources (partially existing);
- bibliography; and
- glossary.

Resources

A considerable amount of useful material already exists. The UMUC MDE web site (http://www.umuc.edu/programs/grad/mde/) has many of the features in the above list. The program manual could be produced as a portfolio project for one or more students with input from UMUC staff.

4.2. Tutorials

Description

A series of tutorials on subjects such as team work, group dynamics, and project management could provide a good introduction to these areas and include bibliographies where students could do further reading to increase their general knowledge and help prepare them for online course work. In addition to printable materials, a short course with online practice in these areas during students' first terms could improve their performance as well as enhance the learning experience for students they will encounter in future courses. The course could be offered without an instructor or alternatively with an elder student mentor who could respond to questions.

Resources

Most tutorials could be produced as portfolio projects for one or more students with input from UMUC staff. Some projects might benefit from participation by graduate students in other subject areas, such as business administration. If the tutorial includes a short course online, a small fee from students could defray costs to support the course.

4.3. Program/Learning Matrix

Description

A program/learning matrix could be a useful resource for students in identifying their educational needs and determining where specific subject matter and skill development opportunities could be obtained in the program. The matrix would help to provide a systems approach for the student's educational planning. If a program manual is produced, the matrix would be included in that material; however, it could also be created as a stand-alone product if no program manual exists.

A participant in the MDE program needs to gain knowledge in specific subject matter that is presented in the various courses. In addition to that knowledge, the student needs to develop knowledge and skills that are more general and that must be acquired in order for the subject knowledge to be applied effectively. While some of the general knowledge can be developed within courses, a holistic view of the needs and learning opportunities would aid in determining how the student's objectives can be met.

The following table uses a few knowledge and skill areas and hypothetical learning resources to illustrate the matrix concept. The first column contains a partial list of knowledge and skills that the student may need for personal goals and objectives. The remaining columns present courses, tutorials, and other learning opportunities where the student can obtain knowledge and experience in the areas identified in the rows under the first column. Each cell in the matrix contains commentary about the nature of the learning and experience opportunity that the intersection provides. In order to use the matrix, the first step would be to highlight the knowledge and skills (first column) the student needs. Next, cells would be highlighted under courses that are required in the program. Finally, the remaining sections of the matrix would be reviewed to select the additional courses and learning opportunities that would provide the best overall profile for meeting the student's goals and objectives.

An expansion of the concept either within the matrix or as a companion piece would be a mapping of knowledge and skills to specific jobs for DE professionals.

Program /Learning matrix Concept					
Knowledge/ Skill	Course A	Course B	Team Work Tutorial	Virtual Institution Project	etc.
DE Pedagogical Theory	Primary subject			Practice projects	
Management in DE Institutions		Primary subject	Secondary subject	Practice projects	
Course Design	Primary subject 2 class projects	Secondary subject		Practice projects	
Leadership		Primary subject 1 class project	Secondary subject	Practice projects	
Team Work	1 class project	Primary subject 2 class projects	Primary subject	Practice projects	
etc.					

Resources

Much of the material that describes the MDE courses and tutorials already exists. The task to be completed involves analyzing the material to summarize and supplement it to create the matrix. The program/learning matrix could be produced as a portfolio project for one or more students with input from university staff.

4.4. Virtual Institution Project

Description

A student who has just completed an educational or training program is expected to "have room to grow" when hired into a job in her or his field. However, the lack of experience in practical application of the knowledge gained can be a hindrance both to the person's ability to get hired as well as to perform in a new job. Just as the acquisition of doctoral level knowledge in a subject does not automatically prepare one to be an expert teacher, neither does the study of distance education subjects necessarily create one who is ready to be an effective manager or leader in the field. The final project course for the program can add to the foundation of the student's knowledge but is not a comprehensive answer to the problem. Those who are studying towards certificates also may be limited by a lack of experience.

In some fields there are internships that offer practical experience that students can reference on job applications. It may be possible to create an environment in which MDE students can practice applying their knowledge and have additional experience to reference on their resumes.

The Concept:

The concept is a virtual distance education institution (VDEI) that has an organization and set of staff positions like those of a real institution. The imaginary institution would exist as an online environment with facilities for student interactions and project development. It would be staffed by students who are "hired" into various jobs for limited periods of time in order to experience the different types of realistic issues, projects, problems and team interactions that can be encountered in the professional world. Students would include course work and experience on their VDEI job applications to demonstrate that they have the proper prerequisites for participation. Students would move through as many different jobs as their time and interest permit.

Objectives:

- provide an opportunity for students to apply principles learned in courses;
- allow students more extensive development of team skills than is possible in classes; and
- give students practical experience with management and leadership functions that can be referenced on resumes.

Operation:

The VDEI would be an ongoing operation open for student participation in each school term. There could be two (or more) versions: One might be structured as an online, open university, another could be an online training center. The VDEI could be fully described by a design team prior to student participation, or it could be planned and designed by students as a practical learning experience. At some point, students would

apply for and be "hired" into the various positions in the VDEI: department heads, course designers, technological support managers, etc. Each position would be held for a limited amount of time and would require a tangible product by the end of the tenure. Products would be peer reviewed by other students who are in relevant VDEI positions to do so. VDEI products might be submitted as course assignments, also, where the two efforts coincide. The products could be included in student portfolios.

Examples of VDEI Projects and Student Products	
Managers	vision document, strategic plan, policy document, staffing plan, staff development plan
Faculty team	curriculum plan, new course proposal
Course design team	course development plan, course design
Student support team	student support program
Technology team	evaluation of new technology options, cost-benefit analysis for implementing a new technology, implementation plan

In the VDEI environment, students would experience interacting with other students in a setting that presents many of the same challenges they will experience as professionals.

Resources

Creating the Virtual Institution Project would require the efforts of university staff or contracted course developers to design and implement it, although it may not demand the same level of effort as a regular course. It is possible that it could be established within the WebTycho classroom environment. The project would need a faculty member to be available to respond to participants' questions.

4.5. Student Mentoring Program

Description

New graduate students could benefit from the knowledge and support of more experienced students. Since many other specific support services are already available, the mentoring effort would be along the lines of collegial sharing of experience, networking and general information discussion. Student-to-student contact could be made by any means convenient to both parties, but a bulletin board for this purpose might be a place for initial contacts and sharing of information of general interest.

Resources

A student mentoring program could be staffed by volunteer experienced graduate students. Documentation of the mentoring experience might be developed as a portfolio project.

5. Summary

The two key motivators Burge and Roberts (1998) cite for adult actions are the need to feel competent and the need to feel connected. The student needs in an online graduate program described in this paper and the recommendations and suggestions all relate to those two basic needs. By providing an assessment strategy with the student in a

leadership position in the assessment team, the student can gain a sense of independence and competence while feeling connected to a supportive environment. The student requires tools to aid in the assessment process and to provide a holistic view of the educational choices available for designing a plan to meet her or his goals and objectives. And finally, the student can benefit from opportunities to apply knowledge with other students in a simulated real-world setting in order to gain practical experience that is necessary for the development of the leadership and management skills that lead to the fulfillment of the MDE mission.

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SUSANNE OFFENBARTL

Distance Learning: Learning on Demand and Just in Time

"Learning on demand" and "just in time" are phrases used in the context of further education and in some ways they seem likely to be in conflict with one another. Restrictions on the learner's side with regard to time, place, and extended social environment and the interests and demands of the employer e.g. the teaching institution on the other side are not always compatible. Distance learning (DL) holds the opportunity to cope with these challenging interests, in that the DL process can be independent of time and place. Thus DL is a promising way to optimize the learner's response to these competing demands and restrictions.

The Master of Distance Education (MDE) Online Program is an example of a DL program where especially learners who work in the field of DL can find a rewarding environment to cope with competing demands and restrictions. The intensive use of information and communication technology (ICT), the supportive concept of the MDE Online Program, support by the employer, course management, as well as other learner skills ensure the learning success and thus benefit all involved parties.

1. Whose Demand and Whose Time?

Learning on demand and just in time is a phrase that meets the reality of further education only coincidentally, as in an individually constructed, perfect learning situation with the right teacher or learning material at the right place and at the right time (e.g. personal coaching).

This article is about the learning situation of working adults who agree - with their employer and a teaching institution - to engage in some further education, with a particular content, and for a certain time. The article describes how distance learning (DL) using ICT as a delivery system can facilitate this kind of learning process and result in success. Moreover, the article is about the MDE Online Program and how learners, who work in the field of DL, as well as their employers can benefit from the synergies of this combination.

There is often an unwritten contract between the three parties mentioned above, whereby the investments and benefits for each party are fixed. Thus the person who at the same time learns and is employed needs to cope with three different interests concerning the learning process and success: the interests of the employer, those of the teaching institution, and her/his personal interests. Each of these has it's own demands and time requirements and thus they often compete with one another.

The employer

The employer invests time and/or money in the learning process and wants the employee to effectively learn for the benefit of the company/institution. The employer's goal is a return on the investment. The employer wants the learner to learn exactly what is required for the job, at just the right time.

The teaching institution

The teaching institution gets paid (public or private) for ”producing” graduates. Depending on who the client is (the employer, the learner, the public) the teaching institution serves either the one or the other's interest. The teaching institution’s goal is to recruit further students, and additionally, has teaching goals (a mission).

The learner

The employee invests time and/or money and wants to learn in her/his own interests. These can, but don’t have to, coincide with those of the company/institution. The employee’s goal is most likely to initiate some personal development or raise her/his employability on the job market.

Obviously, there can be conflicts between the interests described above. They relate to the content as well as learning time. As we will see, ICT-based DL is an option that facilitates balancing the different and possibly conflicting interests.

2. Distance Learning Supported by ICT

The use of ICT ensures ubiquitous access to DL; thus ”… the global network of computers … is a major revolutionary force that is reshaping the educational and training scenario” (Romiszowski, 1997, p. 99)

Many persons who would like to be involved in further education are not flexible in either time or place. Restrictions in personal circumstances (family, job requirements) may compel a very individual structure of learning time that does not fit with any traditional face-to-face offerings. Possible examples are: The only possible learning times may be: early morning, at night, only/no weekends, whole days, never more than x hours in one block; quick changes in the individual structure of learning times; circumstances such as family, costs, and job requirements, which may make it impossible to move to the university/department that is specialized in the intended content.

For these inflexible ”want-to-be-learners” DL is the only way to develop. DL brings the content to the learner instead of the learner to the content. It gives international access to the university/department/courses that are specialized in the necessary content without the learner having to move around in the world.

It is important to mention that this access pervades only as long as the delivery of the content is asynchronous. Individual structure of learning time and international time differences would otherwise diminish the accessibility of content if delivered synchronously. The intensive use of ICT not only makes the chosen content omnipresent, but also allows the integration of the learner into a supportive learning community. Using the communicative potentials of ICT allows for a significant development ”… from computers as teaching machines, to computers as tools to empower learners and teachers” (Bates, 1995, p. 181).

Example: Master of Distance Education (MDE) Online Program

The MDE Online Program is designed to ”produce” professionals that are employable in the field of DL with special skills in management, technology, teaching, training, and for developing countries. It broadly uses ICT to build learning communities and

individually supports the learners. All communicative activities and requirements are asynchronous. For a detailed description of the online MDE program see Bernath and Rubin in this volume.

Many students, like the author, in the online MDE program work in companies/ institutions that use or will use DL in the future. That means the students are moving towards professionalism in the field of DL. Employees and employers move into new business areas and use the content in the online MDE program to facilitate, improve, and reflect on this development, thus building a sound foundation for their job and/or business area activities.

The particular advantage of this online-learning situation is that the learners work with DL, study about DL, and study via DL while always using and reflecting on ICT. Studying via DL is an additional learning level that all three stakeholders - the learner, the employer, and the teaching institution - benefit from. It ensures practical experience with the learned theoretical content.

3. Content on Demand

The content to be learned is the core of the explicit or implicit contract between employee, employer, and teaching institution. The three parties have different demands regarding the content:

The employer demands content that is close to the job requirements. The content should be applicable to the job situation, or vice versa, and it should be possible to choose and/ or adapt content to job requirements. Negotiation between employer and employee/ student quantifies the benefits of the learning process and divides the costs (time and money) accordingly.

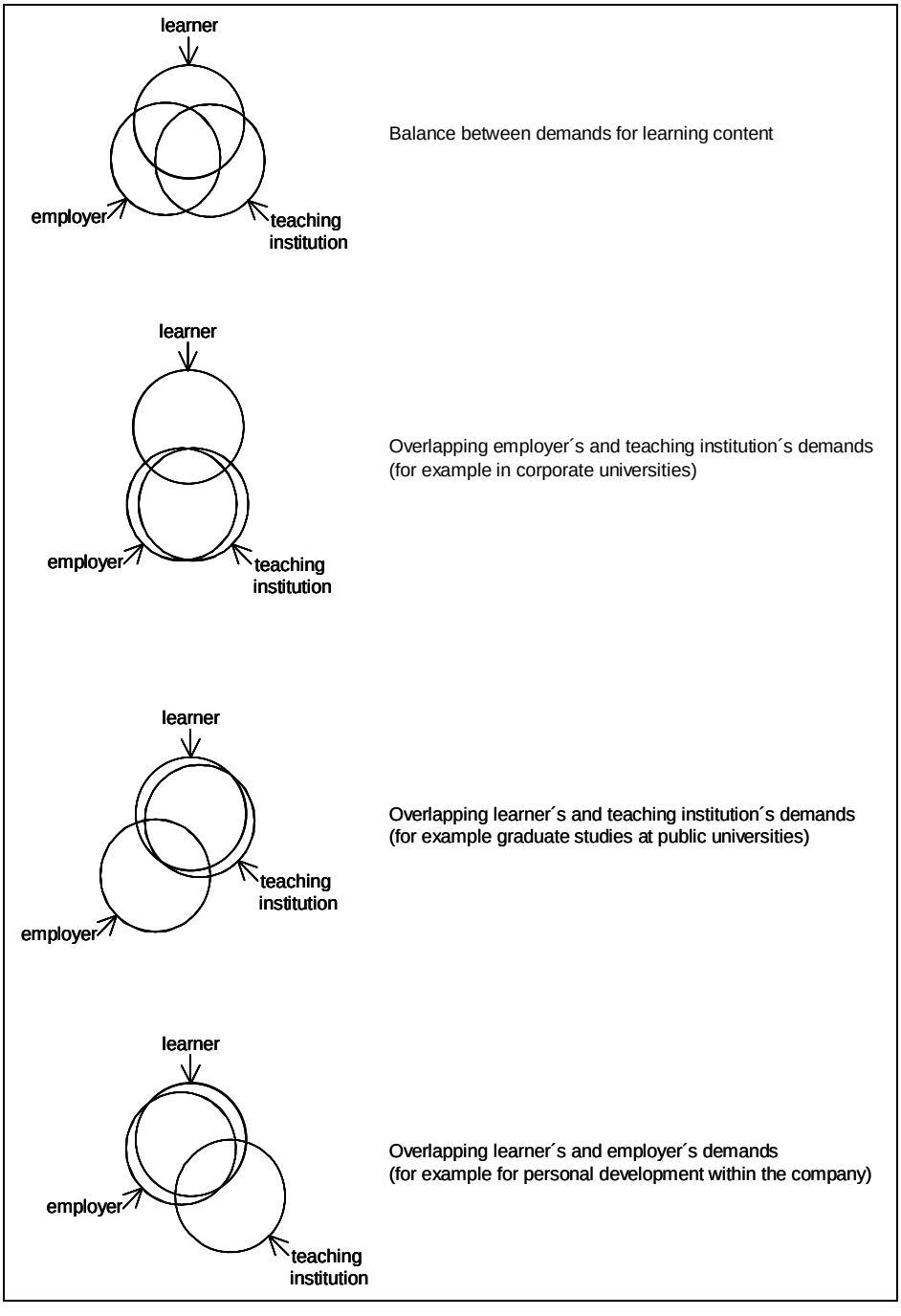
The teaching institution provides content that adheres to the requirements of graduation and has a value independent of one employer (corporate universities and corporate training are special cases and not considered here). The content should be more theoretical and independent and thus applicable to a number of job situations. For degree comparability it is necessary to more or less establish the contents with few options to choose. It would only be possible to adjust content within the fixed syllabi of the courses.

The learner demands content that raises her/his employability within the present company/institution or externally in the job market. This implies a strong emphasis on content that is more theoretical and independent, and thus applicable to more than the present job situation. In addition, for competitive reasons there is an interest in degrees that are comparable to one another.

It is beyond the bounds of probability that these demands will always be identical and more likely is that only one or two of the three parties share common interests. Generally the learning outcomes go beyond the required new knowledge for the job and are also important for graduation. These additional learning outcomes can have a direct impact on the work process that cannot always be foreseen.

The overlapping of the different content demands is usually not explicit, but is important with regard to the support given by the employer, the outcome of the teaching institution, and last but, not least, for the success of the learner/employee. The overlapping demands for content can be illustrated as follows:

Figure 1: Demands for Learning Content



Other figures are also possible, where e.g. two demand-circles do not overlap, but since this paper only examines *learning on demand and just in time*, the overlapping demands of learner, employer and teaching institution are the focus. The stability of the learning situation depends on how big or small the overlap is. This can vary from course to course, from job to job or within a job over time, and from learner to learner or within a learner over time.

For the continuing education to be successful at any given point in the learning process there must be a consensus between the parties involved. They not only have to share requirements, but, based on their own demands and targets, create a situation where all and everyone's needs are met and fulfilled to the highest possible degree. Otherwise the party that is put at a disadvantage will resign from the contract. Thus, the amount of overlap and the stability of the learning process depend on the parties' tolerance of the others' interests.

So far, these contemplations are independent of the type of delivery of the learning content and are true for face-to-face as well as for DL further education.

Example: Master of Distance Education (MDE) Online Program

In this fairly new MDE Online Program some content details are still being developed and change with feedback from learners. Thus the learner, on the one hand, has a kind of steering function and influences her/his own studies and the direction of the program, while on the other hand this can also be confusing for the learner.

As mentioned above, a specialty of the ICT-based online MDE program is that the delivery system is also a form of content application and can therefore be seen as part of the content.

For the students who work in the field of distance education and want to further develop in this area, the demands of their employer, the MDE program, and their own are to a certain degree in balance. There are different options, which the parties can (and do) use to enlarge the field of shared interests and demands, and thus stabilize the learning process and success:

Employer of MDE student:

Realistically, the employer does not know what the employee can or will learn. However, it is in the interest of the employer to utilize as many of the employee's learning outcomes as possible, and which the teaching institution requires. How can transparency in this environment be optimized?

- Insight by the employer into the employee's learning outcomes and regular reports on these from the employee.
- Companies/institutions in the field of DL are continually facing new tasks and demands. The employer must discuss, and where possible, allocate the studying employee's new skills to other business areas. Sometimes it is possible to reverse the process and adapt business tasks to these just learned skills.
- One important goal in the online MDE program is to reflect on different aspects of DL. The gained knowledge can easily be used for reflection on developments in the company/institution moving towards DL and could improve that process.

The online MDE program:

The online MDE program has to facilitate the overlap of employer's and employee's demands in order to satisfy the two clients, and at the same time ensure graduation. There are several structures within the online MDE program that allow the adaptation of content to the demands of employer and learner:

- Curricula*:* The online MDE program offers a variety of specific courses and certificates that meet the requirements of different business areas in the rapidly expanding world of DL. These certificates allow different foci: DL in developing countries, DL and technology, foundations of DL, library services in DL, teaching at a distance, and training at a distance. With seven core, four elective courses, and the final capstone project MDE students can either choose their own focus and/or study what best meets their employer's needs.
- Working with case studies: It is critical to integrate examples and case studies to ensure the transfer of the acquired knowledge into practice. The MDE Program encourages students to use examples from the learner's job environment and to apply course content and learned material in these case studies.
- Related work: MDE students are required to build a personal DL portfolio, which serves as an ongoing professional resource, as well as a useful job search tool. Students are encouraged to let the portfolio grow over the period of study, thus making a connection between job and studies. Job related work must be submitted to and accepted by MDE faculty and can be in any language MDE faculty can support.
- Project*:* MDE students can document a case study or develop a project in the area of DL and training, thus practicing and displaying a variety of skills and knowledge. They can use their own company or institution for this case study/project.

MDE student:

The differing demands between the employer and the online MDE program with regard to learning content means a larger workload for the learner, who has to balance this. In this case the learner has to enlarge the shared interest in the content. At best, the three circles of demands (see figure 1) are nearly identical: the larger the overlap, the smaller the workload for the student. Because of time restrictions the student will try to combine work and study whenever possible in order to achieve more efficiencies. This means the student will try to adapt the learning content to the employer's demands and vice versa. How can the learner optimize her/his learning process and workload?

- Where possible, he/she will recycle text and other products (calculations, illustrations, diagrams), and thus use the products more than once: for job requirements and the MDE online program.
- To some extent it is possible to select the content in accordance with job requirements, but within the fixed curricula. If e.g. during the next year the company/institution plans to discuss the organizational structure of the future business area "distance education", it would be appropriate to select the course "distance education systems".
- To some extent it is possible to concentrate on other/new job tasks after learning new skills. In an ever-changing business environment it may be feasible to tackle a new task that fits the just acquired knowledge. For example, after the student has

completed the course *Student Support in Distance Education* he/she could begin with the design of a student support system for a special situation.

- Every job related product (concepts, questionnaires, reports, reviews, publications, presentations at conferences etc.) can be reviewed to see whether it fits to any of the content offered in the online MDE program, and if so, enrich the personal portfolio.

The example of studying employees in the online MDE program demonstrates that program content can be well suited and tailored to the demands of all involved parties if they try to examine and understand each other's perspectives. Again, all this is independent of the content delivery system.

4. Learning Just in Time

Balancing the demands for content is a difficult task, but sounds quite easy when compared to the issue of time. The independence of time and place in DL does not mean there is no need for a time and place to learn. "Just in time" is often misunderstood: It means that learning success is available without delay. However, employers tend to delegate the time needed for learning to the employee's private time sphere. In this case, and without a financial contribution from the employer, the overlapping circles are out of balance.

So, what does "just in time" mean from the three perspectives involved in the further education process that this article deals with?

The employer

The employer's demands are learning outcomes that are available before the employee meets the qualification. A learning outcome that comes late(r) could be viewed as useless for the employer and a waste of investment (time or money) on his part. Other than that, it does not matter to the employer when learning content is delivered or when the learning process takes place – with the restriction, that the learning process does not interfere with the fulfillment of other work related tasks. The time for the learning process is fixed in the often unwritten "learning contract" between employer and employee.

The teaching institution

The teaching institution wants learning outcomes in accordance with a timetable that leads to graduation in a reasonable time. A timetable shows steps towards graduation and is marked by courses and assignments within the courses. The important questions here are: How long will/should the program last, and how are courses and assignments scheduled to make it comparable to the programs of other institutions. The course content and its objectives have to be delivered before the assignments, however the assignment timetable dictates the timetable for content delivery and other learning activities.

The learner

The learner/employee wants learning outcomes (tested in assignments) with ample time to learn in accordance with ones individual timetable, before it is needed for the job, and before graduation.

This leads to a complex hierarchy of more or less urgent learning needs where each involved party has different views of urgency – i.e. of what should be learned in just what time. We could illustrate this with a three dimensional graph: each axis is the time scale of one party and the learning tasks are located in the space between the axes nearer to or further away from point zero (which is the point ”do it at once”).

Realistically, the learner, who has to optimize the process, will step back to a reactive position, take the hierarchies of the employer and the teaching institution into consideration and just work on the next deadline. Continuing education is an additional time consuming commitment in the life of a normal working adult, time is always rare, and allows for only the absolute necessary. The frame of this optimization process is imposed through the student's individual time restrictions, and by the teaching institution's and the company/institution's time requirements. Part of a ”learning contract” between employer, employee, and teaching institution is an agreement on the time that can or should be reserved for learning. At best, one of the employer's contributions to the learning outcome is the dedication of work time (another contribution could be money).

At this point the content delivery system becomes important:

> Just-in-time training, in its implementation, implies a high level of individualization and self-direction in the training and education processes, so that each individual may learn just what he or she needs at the time when he or she needs it. Almost by definition, this implies a radical change in the training delivery system from place-based and time-fixed group instruction (characteristic of our conventional education in the past) to on-the-job distributed training that may be utilized, under learner-control, at any appropriate time or place. (Romiszowski, 1997, p. 92).

At the same time ICT ensures that the learner does not get lost and becomes a lonely learner, but is integrated in a learning community and individually supported by faculty. Nonetheless this integration in a learning community and support by faculty are time consuming and forces the learner to invest time and schedule shared activities. Yet it most often ensures a quick return on the learner's time investment and an improvement of the learning process.

Example: Master of Distance Education (MDE) Online Program

How can (and do) the MDE online program, the employer in the field of DL, and the learner optimize learning just in time with extensive use of ICT?

Employer of MDE student:

The employer benefits from the learning outcomes. An unwritten contract between learner and employer with regard to the employer’s contribution and its value is stipulated. This can be either time and/or money.

- The amount of work time the student can spend on studies depends on the time necessary for learning on a whole, and agreement on an allocated portion of time.
- Set study time: It is helpful if agreement on a predetermined time for studying, for example the first working hour in every day, can be reached. This allows continuity with regard to the communication requirements in the MDE online program, and anchors learning as a work task in both the employer’s and employee’s perspectives.

- Flexibility of work time: To fulfil the requirements of graduate studies learners need flexible work time, especially when the study load is higher, e.g. before assignments deadlines. Within reason the employer has to accept the learning task being the first priority at some times. At other times, i.e. during semester vacation, the study load will be lower.

MDE Program:

The MDE online program must balance, on the one hand, time requirements that are necessary to build studying communities and to graduate students, and on the other hand give students the necessary flexibility and structure to facilitate study.

- Flexibility with deadlines: MDE faculty show some flexibility in regard to deadlines if the learner is in a difficult personal or work situation.
- Asynchronous learning settings: All required communication between faculty and students, and between students is asynchronous (email, conferences, posting documents). This means in practice that courses are scheduled into 2- or 3-week partitions, within which students have time to complete the required tasks (reading, discussing, writing assignments). It is relevant for the grade *how* students complete their tasks, but it is not relevant *when* they work on them. How flexibly the learner can manage her/his learning time within the schedule of a course depends on the amount of required group work, because this can – to a certain extent - mean the synchronization of learning processes.
- The learning setting independent of place: No matter where the learners are, as long as they have internet access they can access their learning environment, content, classmates, tutors, and support.

MDE student:

Time management skills are essential for students in the MDE online program. In face-to-face further education programs/courses learning times are fixed and when the learner arrives in the classroom no one (not even the employer) disturbs the learning process. In distance education learners must decide between study and the importance and urgency of work. In DL time management is not a question of days or half days but of half hours, thus allowing the student to optimize the workflow and the learning process (and her/his private time). Of course it is more efficient to organize larger time spans. However, between various deadlines, meetings, group work, routines, train departure time, and emergencies … a half hour of reading time can be a gift, whereas when writing assignments less than a two hours does not seem to make much sense.

A student's time (and its management) is dictated by the time sensitive requirements of the employer, teaching institution, personal commitments, and their "hierarchy of importance". To facilitate the time management of learning the student can act on several levels:

- The independence of time and place makes it possible to work and study alternatingly. Therefore learning time has to be divided into small pieces (not less than 30 minutes) to facilitate the integration of all time requirements.
- In order to deal with unforeseeable time conflicts job and study products have to be planned ahead (for example two days). In most cases students need this time buffer.

- To reach a high degree of flexibility and avoid conflicts both the employer's and the teaching institution's schedules have to be known to all sides.
- If the workload in both work and in study are large, overtime is unavoidable.

The always-present decision of 'what is urgent and what is important' is another facet of the "… loneliness of the long-distance learner" (Bates, 1995, p. 52).

5. Summary

Further education at a distance has to take three different demands for content and three different time constraints into account. In part they compete and have to be brought together: those of the learner, the employer and the teaching institution. ICT-based DL provides the opportunity to optimize these competing needs because the learning process is more independent of time and place when compared to classical face-to-face further education. ICT-based DL combines the advantages of time and place independence with the supportive integration in a learning community.

ICT-based DL offers new opportunities, but all involved are confronted with a lack of experience and knowledge on how to use these opportunities. It will take some time until DL is anchored in the consciousness of both employers and employees as a rewarding experience in both the work and learning environments. Both sides have to build and internalize new skills, and a new work and learning culture: The employer has to realize that life-long learning is also a responsibility of employers and requires time and tools (e.g. learning material, courses). Garland (1995) describes the skills necessary to succeed in this new learning environment from the learner's perspective: "It involves not only having the ability to organize and manage their learning environment in terms of goals, resources and time, but also having the cognitive maturity to learn in a critical manner and to exercise higher order thinking skills" (Garland, 1995, p. 77).

The MDE online program is an example of these changes: Curricula and course development evolve as a result of the occurring conflicts, employers are still learning to take on their part in their employees' life-long learning endeavors, and learners are still working on managing their learning processes and the independence of time and place.

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