On-line Education, More Than One-way Education?

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Abstract— The aim of the evaluation research described is by critically examining an in-service education course, to give 25 university teachers a foundation for developing and improving their activities with a focus on flexible learning and ICT-supported education. In the final examination task the participants performed an educational activity with the aim of increasing their own understanding of the area and simultaneously spread the interest in and knowledge of ICT-supported education to colleagues and students. The results show that the degree of freedom offered in the course was not appreciated by all. Too great a freedom of choice may lead to negative consequences for interaction and throughput. This conflicting interest between a desire to maximize flexibility and avoidance of dropouts is problematized. A necessary reconceptualisation in faculty development, from organizing teacher-centred learning situations towards student-centred, is made explicit. This suggests some concrete advice to organizers of flexible education, namely the value of: i) fast feedback; ii) holistic planning; iii) functioning technology; iv) relevant course literature and v) clear goals. The principle of making the participants immediately test their newly acquired knowledge by passing it on to their colleagues was positively received by everyone.

Index Terms— Distance learning; Flexible Learning, ICT, Mentorship, Pedagogics

I. INTRODUCTION

Transformation has in recent decades been in focus in university education in Europe and the USA. Several researchers in the West have described the development as 'mass education' [1, 2]. More and more students are supposed to be educated with the support of fewer and fewer resources. To reach 50 % of those who leave upper secondary school annually has long been the goal of Swedish universities. At the same time the parliament auditors have shown that the number of students who leave university without any results has increased [3]. One way of supporting and improving the throughput may be found within the tranformation of teaching and learning known as flexible learning[1]. Using flexible forms of learning supported by information and communication technology (ICT) to develop solutions facilitating and reinforcing student learning may be crucial to Sweden's welfare and competitive edge [4].

The information society enforces new learning strategies and the development of information technology will probably erase the boundary between teaching aids and other information [5].

Earlier on the Council for the Renewal of Higher Education has supported projects aiming at stimulating pedagogical development in Swedish universities [6]. Neither the Department of Foreign Affairs nor the National Agency for Higher Education has unambiguously defined and explained what is meant by pedagogical development, but it has been left to each university to set up its own appropriate goals and forms of activity. Flexible learning and teaching with the support of ICT have been given priority in the last few years, since there are a number of educators who lack experience in teaching distance courses or applying flexible learning on courses conducted on campus. For this reason it is especially important that a strategic campaign for promoting flexible learning should include support to the teachers of the universities [7].

A. University education in transformation

The role of ICT will become even more prominent in higher education. Traditional communication will be supplemented and often supplanted by new communication. The young generation is growing up with a new kind of learning, where sound, picture and text are conveyed via modern information technology, which will force universities to plan their education in accordance with the demands made by the new target group [8]. The Swedish government in its demands on universities has specified that they must be able to offer programmes to new groups of students, which means a pedagogical challenge for traditional academia [6]. Another influential factor contributing to the importance of flexible learning is the pedagogical insights into how different people receive information, process it and transform it into knowledge. Flexible education must be viewed in a larger context than distance courses alone. The question must be asked whether some flexible education elements can be integrated into traditional on-campus programmes in order to safeguard and increase their quality and contribute to the optimal use of resources [9]. The direction of tendencies affecting higher education throughout the western world, largely based on new communication technology, is summarized below.

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[1] The flexible learning concept is described in detail in Section 2.1.

The move is from
• 'passive learning for reproduction to active process-oriented learning
• teacher-centred education to student-centred education
• fixed knowledge content to flexible optional content
• focus on individual work to focus on teamwork
• strict discipline-oriented content to thematic interdisciplinary content
• traditional printed teaching aids to interactive dynamic teaching aids
• traditional academic subject blocks to professionally oriented education
• university computer laboratories to distributed web solutions
• local stationary learning resources to global learning resources
• classroom-based courses to network-based courses'. [10].

The movement could be summarized in that the focus moves away from the teacher towards the student. The student is no longer a passive receiver, but is in contrast expected to be an active and responsible learner.

B Aim

Against the background of the global changes taking place in higher education and the attendant demands for pedagogical renewal the aim of the evaluation research presented here is to use a critical formative and summative examination of an in-service course to provide university teachers with a foundation for developing and improving their work with the focus on flexible learning and ICT-supported education.

II. Pedagogical development work

Pedagogical development work is multifaceted and requires a constant focus on and discussion of the field [11]. Pedagogical development is a similarly used term to staff development and professional development and refers to on-going professional learning for educators. Skills and knowledge attained during a learning programme promote both personal development and career advancement.

To actively direct resources by educating and influencing one's co-workers on the management level is becoming increasingly important in pedagogical innovation work [12]. To furthermore exert an influence on the policy level while carrying out pedagogical educational activities for university teachers may be an effective combination for the development of one's work [13, 14].

The teacher role may change when modern information technology is introduced into the education system. Reservations against this attitude are made by Holmberg [15], who is of the opinion that the role remains the same, that of tutoring for learning. It is the content of the teacher's duties that changes, not the role of helping students to acquire knowledge. What happens is that the focus on the content of education must now be shifted to the form of education. This requires comprehensive planning and close cooperation with other teachers, technicians and study administrators. Introducing IT-based tools into teaching is neither simple nor self-evident but can often be a complicated and time-consuming process [16]. One way of increasing the confidence in ICT is using technology in simple frequently occurring presentation exercises. A greater emphasis on introductory courses in technology may thus be a good idea [17]. If the university employs skilful course leaders and if the students are used to working with ICT resources there may be less danger of negative teaching experiences [18].

The in-service training course described in this article was inspired by ideas of learning organizations and the creation of a positive learning environment shared by everyone, a Community of practice [19]. The ambition is that every teacher should be able to formulate a three-year competence development plan, presented and updated annually. This is the context in which the University Pedagogics – Flexible Learning and Mentorship in ICT-supported Education course has been created to become one of the prioritized competence development activities.

A. Flexible learning and distance education

The flexible learning concept invites to discussion and in some degree to disagreement. In Australia and the Nordic countries the term is relatively firmly established [20]. A common interpretation is that flexible learning 'should make use of technical support, offer the possibility of choosing the direction and the material for one's studies, make room for various methods of studying and allow it to be carried out independently of time and space' (ibid. p. 315). Thus, flexible learning can be characterized by various factors such as an adaptable course schedule, study forms, study tempo, examination forms, various learning styles, geographical independence and variation in the form of communication between student – teacher and student – student. Flexible learning may be viewed from the student's or the teacher's point of view. One definition of flexible education reads as follows:

'Flexible distance education enables students to choose place, time, tempo and work method for their studies' [21].

Flexible distance courses consequently represent various ways of organizing education. It is essential that the teacher is available during study hours for guiding students, supporting processing and communication and providing an administrative study structure. Flexible education programmes must be viewed in a wider perspective than as distance education per se. The distinction between distance and more conventional

education, sometimes referred to as on-campus or neighbourhood education, is today on its way out studies' [22, 9]. Flexible learning may contain several dimensions requiring several competencies such as subject knowledge, pedagogics, web design and layout. This means that developing a course is done in cooperation with more colleagues than traditionally.

B. Pedagogical attitudes

The pedagogical structure of distance education varies. There are models which are dominated by mediation pedagogics, where the teaching is based on lecture packages and pre-framed questions for students to react to. There are also models where students frame their own questions and where the teacher rather acts as a tutor [23]. A great many programmes put greater emphasis on their availability than on personal contacts between teacher and student. To compensate for the absence of the teacher in person a well structured and often easy-to-read self-instructive study material is produced. This structure allows the teacher to formulate the student's problems and questions, which are often anticipated and answered [24]. Through such an attitude the teacher is in focus and is the person who initiates interaction with the student, which consequently takes place on the teacher's terms. This is a static and linear structure, including explicit overarching and partial goals

If, however, learning is viewed as a non-linear process with the student's own issues in focus, the teacher is given another, though very important, function. The point is to be sensitive to the student's method of learning. Learning which emanates from the student's own experience is, according to a great many researchers, a prerequisite for higher studies [25, 26]. In the approach described here the non-linear process is very much in focus. In distance courses dropping out is far more frequent than in traditional on-campus education. Since this usually occurs soon after the start of the course it is essential that student support is introduced early on [27]. There may be a number of reasons why students interrupt their studies. Summing up, Thorpe [28] attributes the reasons to five different categories, namely course contents, institutional factors, the learning environment, the study approach and motivational factors.

C. In-service training for teachers

In order to strengthen university teacher competence in flexible learning and the use of ICT a course was planned with the aim of providing teachers with in-depth knowledge of:
- the theories on which flexible learning is founded,
- individual and group learning processes and what technology can offer to support these,
- mentorship and tutoring,

as well as further developing:
- the competence and knowledge for planning and implementing flexible education,

- proficiency in using some communication tools appropriate for flexible learning.

In sum, the knowledge target aimed at focuses on qualitative action and understanding, in other words on increasing the awareness of what will and what will not work.

D. Course structure

On the basis of pedagogical theory a need analysis was conducted among the course participants, i.e. teachers in higher education plus a few teachers responsible for the in-school training in upper and lower secondary schools for teacher students. The 25 who enrolled were divided into three groups and obtained the support of six instructors throughout the course. After this they planned, implemented and evaluated a minor education activity. This meant that they had two roles to play in their in-service training, one role associated with their own learning and the other to apply their newly acquired knowledge in training colleagues in their pedagogical practice.

The course contents were shaped by the participants' need of in-service training and by their choices. The following contents were included:

- pedagogics and methodology in flexible learning,
- needs and target-group analysis,
- tools for course planning,
- the planning and implementation of flexible education,
- problem-based learning, portfolio and other pedagogical methods,
- work involving discussion conferences,
- IT support and pedagogical software,
- technical support in video conferences and web meetings,
- synchronic and asynchronic learning,
- success factors for flexible learning, and
- tutoring and mentorship.

The structure and implementation of the course was characterized by the large space given to individual educational needs. All participants formulated and planned for their individual requests within the field. From an extensive smorgasbord of lectures, seminars and workshops, synchronic as well as asynchronic ones, the contents and the hours of participation were individually chosen. As for the choice of literature and examination task there was great leeway for individual requests. Clear demands were made on everybody with regard to continuous presentation, discussion and reflection based on the literature, on lectures and on the contributions of the others. A continuous discussion went on about the structure and quality of the course, which made up an essential part of the contents. Quite a few considered these discussions as the most important for the future use of ICT in their teaching. The course management met regularly to discuss the progress and suggestions for

improvement were continuously broached with the participants.

Only e-based literature was used and the course could be followed on the Internet. However, hands-on tutoring and workshops were also offered. It started and ended with meeting physically, but in between most of the studying was done via the Internet. Permanent teacher resources in the form of recorded lectures from earlier conferences, for example, were frequently used. Active participation was required in discussions and the examination task consisted of a written documentation and oral presentation of the educational activities the participants had conducted among their colleagues. The participants' previous knowledge and experience were of great importance and were complemented by the recruitment of resource persons with experience of flexible education. In addition to the obligatory course literature the choice of pedagogical and didactic literature was made in consultation with the course management. On the joint course website suggestions for articles and other literature on flexible learning were presented.

The assignments examined in the course comprised:

• an individual plan of the need for competence development in flexible education (How do you conduct your own teaching today? What would you like to change? What skills/training/material will be required? Formulate your learning needs. Draw up in conjunction with your course leader a plan for your own competence development),

• planning education measures among colleagues (What is the digital competence among the colleagues? The idea of a digital native [29] constitutes a powerful metaphor aimed to transform our perspectives. A digital native is someone born into a world where IT is a natural part, meaning that she will not need to compare this technology to something else in order to understand it. Digital immigrant is Prensky's [29] name of those born before IT became everyday technology. What do they wish to learn? Describe the target group. Draw up a training programme. How would you like to act as a mentor?),

• implementing the training (What went well? What turned out badly? Present and discuss your experiences for the future).

In addition to the three tasks above the course participants were also expected to attend five lectures of their own choice followed by discussions and reflections in the joint electronic forum set up for the course. They were also expected to relate their contributions to the course literature, which was their way of presenting the course literature.

III. EVALUATION AS METHOD AND RESEARCH

There are a number of various models and strategies used in the evaluation field, with certain models, for instance, evaluating products and others evaluating processes [30.] The type of evaluation model used affects the chances of various groups of interested parties of getting their needs and interests elucidated and noticed [31]. It is not uncommon for evaluations to focus on models and methods instead of on questions and analyses concerning fundamental values [32]. A research survey made of studies on how the use of ICT affects learning environments shows that such studies often lack both a theoretical foundation and a stable research methodology [33].

There are several different links between evaluation and research [34]. One essential overarching similarity is that researchers and evaluators use the same methods for data gathering and analysis. This is why we have chosen in our article to regard evaluation and research as two closely related activities. Consequently, we are positive to the concept of evaluation research as a description of the use of scientific research methods in evaluation contexts.

However, there exist differences between evaluation and research. One is that evaluation takes place within a task frame that is often narrower than the theory frame used by researchers. This means that the evaluator usually works under stricter control than the researcher. Another difference is that the evaluation task includes making an evaluation, whereas no such demands are made on research.

The aim of the evaluation research presented here is to use the critical formative and summative examination of an in-service course in order to supply university teachers with a foundation for developing and improving their work with the focus on flexible learning and ICT-supported education. In other words, it is a matter of paving the way for a broader knowledge of the internal and external conditions guiding educational activities.

A. Evaluation model – an action-oriented interest evaluation

To avoid giving the impression that the results presented in this article are partial the ideas and perspectives presented in Karlsson [34] have formed the theoretical framework and the main thread in our work. We have tried as objectively and systematically as possible to test and represent various views on this competence development course. The evaluation may be regarded as both vertical and horizontal. It can be seen as vertical (top-down), because the two of us performing the evaluation were both part of management of the course (as examiners) and responsible for its planning and implementation. The evaluation may also be considered horizontal in the sense that we as evaluators gave lectures, took part in web discussions and that together we 'owned' the results. As leaders of the course we were well acquainted with its aims, but we also have a

responsibility not to disregard its failures or overemphasize its successes.

'But the evaluator may also be seen as a party involved in what is being evaluated, representing, despite the personal involvement, a critically examining perspective' [34 p. 62].

In conclusion, it can be said that we have used a form of interest evaluation oriented towards action research where the course participants work together with researchers [35], usually with the object of increasing critical thinking and framing new questions [36, 37]. They have, for instance, had the chance of suggesting their own evaluation questions and making priorities among these.

What knowledge was then sought after and what questions were to be answered in the evaluation?

B. Formative-supportive evaluation

The continuous examination of how the course was implemented was based on the views expressed by the course management and the changes they made. Relevant extracts from participant contributions to the joint electronic forum are also included here.

- What views were expressed by the course participants during the course and in the formative evaluation?
- What measures did the course management take?

This is mainly a question of learning about processes, how they come about and how they may develop. Relevant questions include, for instance, 'How does the course function generally? What are the problems? How can the course be made more efficient?'

C. Summative-evaluative evaluation

The summative evaluation, based on questionnaires and interviews, included finding out whether and how the course participants coped with their assignments, that is:

- What did the individual plans look like?
- What educational activities were planned?
- How were they implemented, (an example of an evaluation question: 'How did the educational activities work out and how could they be improved?')

The answers to the questions above were collected via a questionnaire given out to everyone taking part in the course. In addition to examining these the six course leaders were interviewed (after the course) about their views of the participants' performances. The summative evaluation thus contained two perspectives, the participants' own evaluation of the degree of goal fulfilment, and that of the course management.

IV. RESULTS

A. Formative evaluation

After the course had gone on for two months it was noted that activities did not live up to the expectations of the management. In order to provide the opportunity for expressing their views anonymously an electronic questionnaire was sent out to all the 25 enrolled in the course, twelve of whom responded. What clearly emerged from the result of the questionnaire was that they all described their work situation as strenuous and that in many cases the department management had not made enough efforts to reduce the workload and facilitate the competence training of the employees. Furthermore, it was stated that the flexible structure and freedom of choice in the course were appreciated, while more structure and clearer examination tasks were requested. This may seem contradictory but the course management made the interpretation that the reins had been too loose. The conflict generated by the programme creators' desire to maximize flexibility in order to address such issues as customized learning to meet individual needs, apparently undermined the overall success of the programme. This conflict and its implications for in-service teacher training, is regarded as one of the most central results of this study.

These findings suggests that if flexible learning is presented in a global context that values innovation and a new press on graduating life-long learners, the importance for promoting models that foster students' renewed responsibility for learning turns out to be central. The focus thus moves away from the teacher towards the student. This shift is not just about flexible learning, but a transformation in the entire higher education. A comparison of categories of conceptions of teaching, characterised under two broad orientations as teacher centred/content-oriented and student-centred/learning-oriented, are in detail documented by Kember [38].

For university teachers it seems necessary to develop sensitivity for students' unique approaches and purposes to learning in order to counteract dropouts. According to Trowler [2] there is not only a shift from teaching to learning, but also from one-size-fits all teaching to customizability. As good as it sounds it may be less valuable than it would seem. Firstly, in the post-modern era, it is a demanding and hazardous teacher undertaking to establish what sort of knowledge that will be vital to students in the future. Secondly, increased and renewed student responsibility will necessarily have implications for the pedagogical preparations of students' life-long learning. One such implication, not only in flexible learning but in all educational settings, is the need for metacognitive training, i.e. learn-how to-learn. Metacognitive training through monitoring and regulating one's cognitive processes, does improve the quality of learning, given certain conditions [39]. As a result of our findings in our course, it is apparent that participants in flexible learning, as well as other learning situations, need systematic metacognitive training. Students should be helped to become aware of their learning strategies,

self regulation skills, and the relationship of theses strategies and skills to learning goals [40]. However, it is not enough to prepare students' metacognitive skills only. The learning needs of faculty should include enhancing teachers' metacognition about teaching. This finding is well in line with earlier research by Tallent-Runnels [7] who claims that that both faculty members and students want and need training and course development assistance and technological support.

Requests were also made to increase participant and management activity in the various discussion fora set up. The overwhelming number of the respondents would prefer the course management to be more active in the conference than the participants. Some asked to receive quicker and clearer confirmation of when they were considered as having passed the various course elements. A majority were dissatisfied with using e-books as course literature, which meant that they had to sit at the computer reading the literature on line.

At this point the course management decided to take a number of steps. To achieve greater activity all those partaking in the course were gathered into one group so as to increase the critical mass, in hopes to increase their involvement in the discussion fora. The reporting of completed course elements was also made clearer and the course literature which was supposed to be integrated in all assignments was separated and reported as independent reflections on the literature. On account of the great workload the course period was extended by three months. The structure of the learning platform changed radically and became slightly more like courses based on a unidirectional educational structure with set assignments. Since a great many participants were critical of the e-literature the course material was distributed in paper form to those who wished. To make the examination task clearer the examiner made his own recording where he illustrated the task with the help of pictures, sound and examples. No new assignments were added in the recording, but obviously a great deal of the insecurity prevailing about the courses was sorted out, which won approval. Another important measure taken was that the inactive participants, after some respite, were struck off the list.
In connection with this relatively formal part evaluation the course management decided to send out newsletters every week. They contained notification of what would happen the following week as well as a summary of the preceding week. Individual comments and participant contributions were also included in order to reinforce the course feedback. In various degrees all of these measures increased the participants' activity.

B. Summative evaluation

Individual planning

For the individual planning there was a great need of getting acquainted with the pedagogical resources becoming available through digital technology. There was a strong wish to tie learning platform, video

conference, presentations and other elements to a pedagogical context. The course management aimed at interweaving technical training and pedagogical training, underlining the mutual importance of both these entities. As a consequence the participants' individual teaching philosophy was a central point of departure. Typically included in a teaching philosophy is someone's conception of knowledge, perception of learning, relationship between teacher and student and teaching goals. Some participants found it hard to choose among all the options, but in consultation with the course management they were given the chance of discussing and making priorities among the educational activities they considered themselves needing the most. They all presented their plans in the presence of their fellow students and attempts to coordinate the educational activities were made.

Planning and implementing an educational activity

In the part where the course participants were to perform a minor study of their colleagues' digital competence the approach varied greatly, but the majority made use of questionnaires as the method of gathering data. Some carried out individual or group interviews. One study was oriented towards understanding and using a particular ICT application and another mapped the general competence in the department. All told one might discern in the studies certain cautiousness in the colleagues' assessment of their digital competence. The needs that emerged were related to the teachers' current and future teaching situation and to the new requirements on ICT competence which had been formulated by the management on the basis of student demands. There were quite a few who wanted to acquaint themselves with the technology supporting picture and sound. The educational activities requested by the colleagues were of the same type as the ones which those attending the course had formulated for their own educational needs, albeit somewhat less comprehensive and advanced.

Most of the course participants did the study on their closest colleagues and only a few turned directly to students.

Examination

The final examination task, involving that the participants' newly acquired competencies were to be passed on to their colleagues, varied greatly. The educational activities differed in structure and implementation and the subject areas covered a wide span. In one of the last-mentioned projects the educational activities were directed at a representative of industry (the third mission). One of the participants staged a whole-day programme focusing on pedagogic fundamentals and the treatment of distance students. The problems of examining at a distance were also discussed. In the afternoon a workshop on digital learning tools was conducted. Another participant carried out together with an extra-mural business contact a thorough training programme in video conference technology. Two people produced educational material for an e-based booking

system, which was then tested on their colleagues and one did a seminar in the form of a discussion via tele pictures.

Everyone chose practical elements for the educational activities. Many of them preferred to combine different methods, inspired by the principles of learning based on different learning styles. Somewhat fewer than half of the presentations lacked a clear pedagogical standpoint. Nobody presented any follow-up activities, which in itself was not necessary for passing the course requirements. (Some of the members of the group are planning for similar activities for the next semester, that is outside the course framework.) In the evaluation discussions following on the examination all the participants asserted that they felt the task to be meaningful, as their own training and the educational models that were realized and discussed had been of direct use to the department. A reasonable interpretation of the high number of participants expressing great sympathy for the task as being meaningful is that of a chain reaction. To acquire new ICT-competencies and then pass these on to colleagues in practical workshops and so contribute to pedagogical progression in teaching and learning situations, supply university teachers with great satisfaction. Nonetheless, from a course management point of view, the low level of presenting a clear pedagogical standpoint was unsatisfactory.

Dropout views

As mentioned earlier it is not unusual that distance courses are characterized by people dropping out at an early stage [27, 28]. This was also verified in this project as ten out of the 25 enrolled left the course early on. A web questionnaire was sent out to these 'dropouts' where they were given the opportunity to describe their motives for interrupting their studies. All of them answered the questionnaire, stating that their main reason for dropping out was lack of time. Many of them had underestimated the work required in the course. One dropout added that nothing much was got out of the course and that the course instructions were vague.

Didn't find the time. I also thought the instructions were rather vague; I didn't quite understand what I was supposed to do. This mainly goes for the assignments.

Two of those who answered the questionnaire were cautiously critical of the design of the course, regarding the assignments unclear and the guidance in how to handle the learning platform insufficient. Someone thought that the response from the course management was unsatisfactory, while another found the lecture standard uneven and that too little space was given to pedagogics.

In previous research [41] Fox has discussed some common problems of teaching and learning interpreted in the light of the theories of teaching. Concerning the mismatch between teacher's theories and students'

theories, Fox mentions the importance of discussing and making obvious what expectations teachers and students have in order to avoid unwanted frustrating experiences. Thus the course management in the in-service training should have been even more explicit and precise about how the course was designed and intended. One or two respondents appreciated the first real get-together while others praised the novelty of the course approach. These are the words of one former participant:

Different novel approach in the course design. Possibilities to become acquainted with new technology that encourages new ways of thinking.

Four of those who had interrupted the course expressed their appreciation of the chance to view the recorded lectures on the web. Unfortunately, the viewing time had been moved to accommodate other meetings so that it lagged behind in the rather flexible time schedule of the course. These respondents claimed that the easy access made that they did not reserve time for the task and therefore concluded that it would be better with a fixed time set aside for lectures.

When the dropouts were asked to list five items of advice to organizers of distance education the following turned out to be the most essential:

1. Make sure to have a personal contact with the student. Give quick feedback and always acknowledge with a rapid answer.
2. The whole course should be 'planned' from beginning to end.
3. Make sure the technology works. Use good distance tools.
4. Use relevant course literature.
5. Present clear goals and deadlines.

Interestingly enough Hattie [42] confirms these findings in declaring that feedback (see also Tallent-Runnels [7] coupled with challenging, and appropriate goals are the most powerful moderators to enhance student achievement. On the question of what could be improved in the course one person who quit at an early stage answered:

I simply think that much more is required of the teachers. Distance courses don't turn out as good as real courses if you don't work very actively as a teacher. Student activity will automatically become lower through this way of working, and therefore the teachers must work harder to give the course a substantial content.

The above quotation may serve as an example of a comment from the dropouts in which the teacher's contributions are valued higher than those of the participants. It also clearly reveals the immense need for faculty development and in-service training, with a focus on the new teacher role in flexible learning and all the

implications for students e.g. in terms of enlarged and renewed responsibility for learning.

Participants completing the course

From those 15 who completed the course the evaluation taken as a whole was overwhelmingly positive. There were quite a few who appreciated the flexible course structure while still thinking the structure should be somewhat more homogeneous. Many of them were positive to web-based lectures and the forum discussions carried out. Some, however, were negative to the learning platform used. Here is one example of a comment:

Good lectures and course content. Engaged discussions coupled to lectures, etc. Got a lot out of many of these discussions. Have received many new experiences of different tools that can be used in teaching.

As with earlier university pedagogical programmes the interdisciplinary encounter between colleagues was appreciated. The picture stands clear in that the new global challenge, in the entire higher education sector, points to the need for broader collaboration. Course management in flexible learning is not a one-man-show. Flexible learning requires increased multidisciplinary collaboration between, subject matter experts, pedagogues and multimedia producers. Everyone agrees that taking part in a distance course provides the experience needed for anyone who is to plan and implement such education.

A useful experience to be a student in a flexible distance course. Have got many ideas of what to do and what to avoid as a teacher.

There is also great agreement that a higher degree of self-discipline is required to complete distance courses in comparison with traditional on-campus courses. When this group was made to list five important items of advice to distance educators they turned out to be practically the same as for those who dropped out.

1. A clear structure in the study guide with regard to assignments and examination.
2. Give continuous feedback. The student has to feel acknowledged.
3. Structure the assignments clearly and concretely. Give 'short/small' assignments.
4. Let the students discuss lectures/assignments first and then make their contributions.
5. Choose a suitable technology.

One important difference between the groups could be noticed in that more of those who completed the course emphasized the students' responsibility and activity, as shown in the example below.

Make the students discuss lectures/assignments first and then make their comments. If the course management introduces 'answers' into the discussion there's a great risk that it will die out pretty soon. On the other hand, the course management should preferably be 'seen' in the discussion, but rather as an engine/mentor and to give support if it goes off on the wrong track.

What then is needed in order to prevent resistance to flexible learning and it's implications among university teachers?

If university teachers are heavily burdened with increased administrative responsibilities in connection to flexible learning, teachers run the risk of being de-professionalized. On the other hand, if teachers as a replacement for administration are offered more time for research, content renewal and pedagogical innovations, flexible learning could give rise to motivated and active students. We could establish that flexible courses are more vulnerable to technology-related problems and requires teachers to have good competence in using ICT in educational settings.

The main point for university teachers is to arrange flexible learning in forms that do not primarily promote reproductive student skills, but instead holistic ones. Since few teachers are prepared to forgo this ideal it is a vital aspect to attend [43].

V. DISCUSSION AND CONCLUSIONS

Those who completed the course, many of whom with a good ICT competence, give high marks for the course as regards structure, implementation and educational effect. These participants have fewer problems with the high flexibility characterizing the course but suggest some tightening of the structure. Several of those who interrupted their studies were worried about the choices that had to be made. There is a difference in attitude among those who dropped out in comparison with those who finished the course. The dropouts put much greater emphasis on teacher responsibility and lay less responsibility on their own roles in the learning processes that are central to individual competence development. We have reason to assume that these participants expected greater conformity in the course approach. The management's intentions were to create a more dynamic course, something that obviously does not suit everybody.

Regarding renewed responsibility, there is a shift from what the faculty take responsibility for: from traditional quality instruction, i.e. paper hand-outs, lecturing, fixed schedule, organized and linear etc. to active student learning, i.e. flexible study hours, choice of literature, non-linear hypermedia learning etc. [44]. The central outcome of this study is that university teachers need to be prepared to support students who have difficulties in adapting themselves to more student-focused education.

Distance students are not a homogeneous group united in their attitude to technology and pedagogics. Some choose distance education because they feel confident with the structure commonly used for examining students

[45, 24]. In Fig. 1 below this type of education is defined in column A.

A: 'Static and teacher-controlled education'	B: 'Dynamic and student-centred education'
The teacher actively controlling and giving feedback and support to the students	The students controlling and giving feedback and support to each other
A lower degree of dialogue between students	A higher degree of dialogue between students
A higher degree of dialogue between teacher and student	A lower degree of dialogue between teacher and student
Required joint and individual assignments	Assignments based on the students' own choices
Absolute deadlines	Flexible progress
Students with lower demands on initiative and responsibility	Students with higher demands on initiative and responsibility
Assignments and cases taken from fictive activities	Assignments and cases taken from practical student experiences
A restricted offer of obligatory lectures, workshops and literature	A larger offer and greater choice of lectures, workshops and literature

Figure 1.   Different approaches to distance education.

It goes without saying that those who expect a teacher-controlled course have difficulties in adapting themselves to more student-focused education. Consequently, a faculty development programme that targets a model of flexible learning requires including a clear description about how the course is structured (e.g. in a detailed study guide) and what is expected by the participants.

The participants who completed the course were used to encountering flexible assignments and appreciated such elements. The dropouts consisted of people who expected more guidance and who had greater expectations on course management activities than on their own activities. One example of pedagogical development and faculty support in this context would be to introduce and support a critical debate about the need for a more profound change in teaching and learning in general. A changed rhetoric about the qualifications, attitudes and perspectives needed in the digital age [46]. The Swedish government and the current policy [6] is quite straight forward concerning the necessity for pedagogical renewal including metacognitive training to stimulate life-long learning. Attaining pedagogical renewal and faculty development is a matter of compliance between university teachers, already existing guidelines and management.

Newsletters were a positive ingredient, but it would have been even better to give more responsibility to the students themselves. Allowing them to compose the weekly letters together, two students per week, for example, would be one way of making them more involved.

A. Increased flexibility jeopardizes interaction

Devoting more work to group assignments is a good way of increasing student interaction. Individualization made it harder to get the participants together into performing joint tasks. If the assignment choices differ too widely the discussion fora turn more into a collective monologue than an enriching discussion. The risk of losing student interest and commitment is greater in distance than in on-campus studies.

Experiences from the in-service training course demonstrate that you can certainly apply a relatively open planning which takes individual needs into consideration. This structure probably surprised many participants who had previously attended traditionally structured distance courses. Students are often divided into those who like and those who do not like distance education. Nothing can be more wrong. Maybe the students who appreciate distance education on the whole are used to a firm structure with study guides and fixed deadlines. Distance education with an unusually flexible structure, like the in-service course presented in this article, runs the risk of creating initial uncertainty and irritation resulting, for instance, in less interaction.

B. Conclusions

1. In an invitation to flexible education teachers must clearly describe how the course is structured and what is expected of the students.
2. Do not expect all course participants to be active in discussions, but make up pair assignments in which the participants are encouraged to discuss.
3. The platform is of central importance. Make sure the entire course team stands behind the system and that the platform fulfils the demands required by the course structure.
4. Formulate common assignments in which the students get together.
5. Give each student a mentor, so that every course leader clearly knows which students he or she is specially responsible for.
6. Use different methods to regularly confirm, involve and encourage the group as well as the individual, for example by emphasizing some activities in weekly summarizing letters (for which the students themselves may be responsible).

C. Feedback from the course management

In a dialogue with department leaders and those responsible for in-service training who continuously follow the educational activities directed to university teachers many people have expressed their approval of course structure and objectives. The fact that there are several examples that the course has made a positive impact on the competence of other colleagues and that it has in many ways developed work in the department has been appreciated. This 'multiplication' or distribution effect is something to aim at in all university pedagogical activities. There is no concrete or general solution to the problem of making time available for and actively supporting the competence development of the staff, even though many people realize the importance of this question. To raise the status of the problem those who run

the department need to be aware of and more concretely support competence development focusing on flexible learning and ICT support.

Another positive consequence that has emerged is that the ICT support staff of the university has become naturally involved in regular university pedagogical education. That the 'online distance education' directed to university teachers must necessarily become more than a 'one-way education' is something on which those who have the overarching responsibility for university teacher in-service training are in total agreement.

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