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PANDEMIC AS CATALYST FOR NATIONAL DIGITAL TRANSFORMATION OF HIGHER EDUCATION – A SWEDISH CASE STUDY

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Abstract

The covid-19 emergency presented daunting challenges for all in higher education, in particular teachers and students who were forced to quickly pivot from the familiar setting of the campus to purely online education in a matter of days. Despite the enormity of this challenge the transition was negotiated successfully in terms of online teaching though issues such as social interaction, student isolation and digital divides remained largely unaddressed. In Sweden, the pandemic response has been a wake-up call to address the lack of national coordination of online and blended education as well as the need for more coordinated approaches to professional pedagogical development. This paper outlines the response of several national networks and stakeholder organisations, notably the Network for IT in Higher Education (ITHU), though the forming of a mutual support group on Facebook to coordinating workshops and sharing resources. A survey of ITHU members revealed a number of key focus areas for national coordination as well as the development of a culture of sharing between teaching staff and educational technicians that did not exist before the pandemic.

Introduction

Pre-Covid Swedish higher education had a relatively uncoordinated approach to online learning and there was a great variation in strategies between different higher education institutions (HEIs). Responsibility for the development of online and distance education was delegated to institutional level where it was largely driven by specialists and enthusiasts in projects and networks. There were of course many examples of good practice and many innovative institutional initiatives but there was no arena to share these and very little collaboration between institutions in terms of pedagogical development. Furthermore, there was no significant culture of sharing and most educational resources were locked behind institutional passwords. The production and use of open educational

resources (OER) have been centred around smaller projects and are still far from mainstream acceptance.

Sweden was an early leader in distance education in the 1990s and government coordination and funding led to a sharp growth in distance courses and even degree programmes until around 2008 when the authority responsible for networking and cooperation in higher education (NSHU – Myndigheten för nätverk och samarbete inom högre utbildning – Swedish Agency for Networks and Cooperation in Higher Education) was closed down and responsibility was then delegated to institutional level. Since then, the uncoordinated development described above has resulted in a reduction in the number of distance courses and a focus on campus courses and programmes. The rapid increase in the number of distance courses resulted in many university teachers teaching online courses without any experience or in-service training. The results of a national questionnaire in 2009, which 740 course coordinators teaching online courses answered, demonstrated that only about half of the respondents had participated in any training at all (Dafgård, 2020). About half of those who received training had only up to one week of training or equivalent (Dafgård, 2020).

The authorities questioned the quality of many distance courses due to low completion rates and this led to a reduction in numbers. Many distance and online courses have indeed suffered from lower completion rates, often largely due to an instrumental approach to online education and a lack of pedagogical course design. The Swedish decision on *the dual mode model*, which means that both distance education and campus courses are offered by the same institution, has made it more difficult to allocate funds to develop distance pedagogy, new technology, and production of media materials in the way *the single mode model* institutions did, which specialised in distance education (Moore & Kearsley, 2005). A key factor in the discussion of distance education quality is that of the “transactional distance”, a feature of most course forms (Moore, 1997). “Transactional distance” originates from Dewey and is further developed into the Theory of Transactional Distance” by Moore (Moore, 1997). There is a risk of a higher degree of “transactional distance” in online courses as it refers to the psychological distance, i.e., changed behaviour of students and teachers and the pedagogical effects, which can cause problems in understanding and communication. “Transactional distance” can be reduced by student-teacher interaction (Payne, 1999).

Since the demise of the responsible government authority, NSHU, a voluntary network was formed, ITHU (Swedish Network for IT in Higher Education – <http://ithu.se>). ITHU is a professional development network that aims to promote and enhance the pedagogical application of IT in teaching and learning. The network also aims to be a forum for the exchange of experience and knowledge in the field in terms of practice, research and

development. ITHU consists mostly of educational developers, educational technologists, teachers and librarians. The network has representatives in almost all Swedish higher education institutions.

ITHU's main objectives are to:

- develop the competence of university teachers and other staff in the use of digital media in teaching and learning;
- initiate and coordinate activities, projects and working groups in the field of educational technology;
- act as a pedagogical support for other networks in higher education;
- monitor developments in the field of educational technology;
- cooperate with authorities and other organisations in the field.

Since its inception the network has been an important meeting place for all involved in educational technology and in particular its pedagogical application in teaching and learning. ITHU has established a good collaboration with the relevant government authorities and associations in Swedish higher education, namely UKÄ (Universitetskanslersämbetet – Swedish Higher Education Authority), UHR (Universitets- och högskolerådet – Swedish Council for Higher Education) and SUHF (Sveriges universitets- & högskoleförbund –The Association of Swedish Higher Education Institutions). In recent years there has been a growing awareness among the authorities that there was a need for action in the field of digital online education and the pandemic has acted as a catalyst for a major reassessment of national policies, strategies and actions. One notable joint activity was a national online conference on pedagogical development in September 2019 that attracted over 500 participants, the first major online conference in Swedish higher education.

Covid

As in most countries, the sudden transition to emergency remote teaching resulted in an over-reliance on synchronous video meetings that tried to recreate traditional classroom practice in a digital space. Institutions produced at short notice guides, videos, resources, workshops and webinars to help teachers adapt to the new situation. The vital role of educational technologists cannot be overstated in this context since they were able to help teachers redesign courses and keep them going despite extreme pressure and lack of time. A clear result of the pandemic period has been a sharp rise in status for educational technologists and a recognition of the vital role they play in the institution's core activities.

In order to provide a digital space for sharing ideas, resources and mutual support, ITHU started a Facebook group, *Digital omställning i högre utbildning* (Digital transformation in higher education – <https://www.facebook.com/groups/ITHUsamverkan>) on 17 March

2021. The target group was all teaching staff, educational technologists, librarians and administrative staff at all Swedish universities. The group became extremely popular and within one week the number of members passed 2,000 with a very high level of activity that has continued since then. By 1 May 2021 the group had 4,008 members and around half of these had been active during the previous month. Membership has been carefully monitored and applicants must first answer questions to gain access. ITHU steering committee members have shared the responsibility of monitoring access as well as encouraging participation by commenting on posts and writing regular reviews of each week's activities in the group. Posts have been tagged by topic and the most popular topics have been (in order of frequency): Zoom, pedagogical discussion, digital tools, recording, examination, webinars, open educational resources, learning management systems (LMS), health/work environment and collaborative learning. The group has contributed to the growth of a sharing culture that did not exist in Sweden to any extent before the outbreak of the pandemic and continues to be a space for discussion and support. One notable success factor has been the mix of competences and disciplines so that teachers' questions about technology or pedagogy are promptly answered by specialists, though of course some questions lead to lively discussions. Another feature has been the international element with educators from Norway, Finland and Denmark actively participating.

Similarly, the Swedish university computer network, SUNET (<https://www.sunet.se>), played an important role by setting up a web page where webinars and online workshops from different institutions could be visible to all. This enabled educators to participate in relevant workshops arranged by other institutions and save unnecessary duplication of resources.

During the pandemic period several important national reports were published, all strongly recommending better national coordination of digitalisation in higher education with a focus on professional development for teachers and funding for research and development in the field. A report from the government Expert Group on Public Economics (ESO), (Nyman, 2020), examined the state of online and distance learning in Sweden and gave recommendations for a major investment in pedagogical development, development of validation and lifelong learning opportunities, investment in research into online education and an investigation into legal barriers to the development of open educational resources. A survey of opinions and responses to the digital transformation was carried out in early 2021 of ITHU members from all Swedish HEIs: teachers, educational developers, educational technologists, management. The Swedish Higher Education Authority (UKÄ, 2020) published an investigation into pedagogical development with recommendations for a national strategy for teaching and learning in Swedish higher education, a national strategy for digitalisation in higher education and

research and the coordination of such efforts by the Swedish Council for Higher Education (UHR). These initiatives were already under way at the start of the pandemic but their impact has been greater in the light of the sudden pivot to online education.

In addition, the Association of Swedish Higher Education Institutions (SUHF) has formed working groups on digitalisation and accessibility as well as digital examination to further strengthen institutional collaboration in these fields.

Results and discussion

The results of the survey of ITHU members will be presented here. The questionnaire was sent to the 300 members of ITHU and the response rate was about 30%, spread over most of the HEIs in Sweden.

Findings indicate that most of the respondents, 83%, had experience of distance education before Covid-19 and nearly 80% of those with experience assess that they have much experience or very much experience and 80% state that their experience of distance education is rather good or very good. This can be interpreted as the members of ITHU have a particular high competence as the respondents have a wide experience from several perspectives of distance education, e.g., as a teacher, as a student, and many had also theoretical studies in distance pedagogy.

For some questions a comparison regarding the results has been made between two groups of respondents: *teachers* and *staff working mainly with development and support* (henceforth, only staff is used for staff working mainly with development and support). The results demonstrate that teachers' biggest challenges (maximum three alternatives could be marked) when teaching online are *practical elements* (39%), *large groups of students* (34%), *adaptation of forms of examination* (34%), and *changing campus courses to distance courses* (30%). The result is similar for staff with the difference that they consider *big groups of students less challenging* (18%) compared to teachers (34%). Staff also regard *adaptation of forms of examination to distance* (48%) compared to 34% for teachers, and *not being able to have written examinations on campus* (33%) *hybrid teaching* (33%), as bigger challenges than teachers do (18%) (hybrid teaching means that students are at a distance and on campus at the same time). The teachers' most important pedagogical opportunities (maximum three alternatives could be marked) in the transition to distance education are *development of technology usage* (50%), *that more people realise that technologies can support pedagogy* (48%), *the development of teaching* (46%), and *a higher degree of flexibility for students* (41%). In comparison to the teachers, nearly twice as many of the staff think that *more people realise that technology can support pedagogy* (85%). However, compared to teachers (50%), less than half of the staff (20%), think that *the development of technology usage is one of the most important pedagogical challenges* (maximum three alternatives

could be marked). Staff see *an increased interest in pedagogical issues* (42%) to a higher degree compared to the teachers (25%).

The biggest technical challenges (maximum three alternatives could be marked) that the transition to distance education has entailed are to a high degree similar for the teachers and staff. Both groups have answered that the biggest challenge is *lack of time to learn about new technology* (about 50%). However, there are some differences regarding two of the alternatives. Teachers consider it as a bigger technical challenge *to find the most suitable technology* (about 50%) compared to staff, only about 30%. The alternative *to understand how technology is used in the best way* has about the same result for both groups (about 30%). More of the staff think that *teachers do not have the necessary knowledge about the technology* (about 32%) while it was only about half of the markings from teachers (14%). Both groups see it as a big technical challenge (about 28%), *that more focus is on technology instead of pedagogy*. About 23% of the teachers consider it as one of the biggest technical challenges that they *cannot use the technology they need* (due to lack of licences or that the servers are outside the EU etc.) and staff see this as an even bigger challenge (28%).

According to both groups of respondents, the two most important technical possibilities with the transition to distance education (maximum three alternatives could be marked) are *possibilities to have course meetings at a distance (Zoom)* (66-73%) and that *teachers have become more skilled at using technology* (about 50%). Another important possibility for teachers is that they *use more media in their teaching* (28%). Staff consider the third and fourth most important possibilities are that *teachers' have an increased interest in technology* (51%) and that *teachers have been "forced" to use technology in their teaching* (49%).

Regarding the "new normal" during the spring 2020, nearly 90% of the respondents claimed that *Zoom and other tools for e-meetings were used more than before*. Many respondents also reported that *teaching developed* and that *it was more adapted to distance education*. *The number of recordings increased* and *LMS were used more* than before the pandemic. Only about 10% have answered that the teaching continued as before the transition.

What do respondents think will be permanent changes after the pandemic? The most ticked alternatives are (in order of frequency); *more flexible teaching forms will be offered*, *more employees will work from home*, *the importance of staff's pedagogical digital competence will be strengthened*, and *attitudes to the use of technology will be more positive*. The alternatives *more distance courses will be offered* and *there will be a changed need for rooms for teaching* are less marked, but still have got about 30% of the markings. What that the respondents think will disappear after the pandemic are *teachers' scepticism of using technology*, (nearly 40%), *hybrid teaching*, (23%), and 21% answered that they *did not know*.

The rapid transition to online education, which made it difficult or even impossible to have written exams on campus, made it obvious that it is important to develop *other and alternative forms of examination* and that questions in examinations can be formulated in new ways. Teachers have become more interested in developing creative methods to assess students' knowledge and problematize how these methods can influence student learning. There has been an increased interest in and focus on *course design* to strategically adapt teaching and learning in campus courses to online courses. Teachers, who have not previously taught online courses, have to a higher degree realised their need for professional development in distance education and pedagogical digital competence. There have been more *incentives* and *funding for development projects* and how to develop the possibilities of teaching and learning *practical elements* in courses, which has turned out to be one of the most difficult issues to solve, particularly in professional education and training.

With the fast transition to online courses teachers' teaching environment changed dramatically and made it necessary to work with new methods which required support of technologies. However, the number of tools and platforms they could use were limited due to uncertainty around the interpretation of European regulations on data security, namely GDPR (General Data Protection Regulation) and the 2020 Schrems II judgement on the use of USA-based cloud services. Therefore, a national coordination is required regarding which platforms and tools may be used by government authorities such as HEIs.

The student perspective was presented by Sweden's United Student Unions (SFS) in an overview of the results from surveys of student experience of the pandemic period with results from 12 surveys from 10 institutions (SFS, 2020). The students were in general positive to how their institutions had handled the transition to online education and recognised the challenges involved. However, there were many signs that students' motivation suffered as the pandemic developed and many reported feelings of isolation and stress-related issues. The difficulties of establishing and maintaining social contacts and getting support from colleagues were reported at several institutions.

Recommendations and conclusions

The government authority, UKÄ, compiled a report (UKÄ, 2021) on the effects of the pandemic on Swedish higher education. This was based on contributions from all the relevant university and student organisations as well as a number of networks like ITHU and Swednet (Swedish Network for Educational Development in Higher Education). The cooperation between all the relevant organisations in the field was a significant coordinated response to the crisis.

The main recommendations from this report were:

- National coordination of digitalisation of higher education, especially in terms of digital infrastructure, tools and platforms, professional development and new forms of examination and assessment.
- Greater collaboration between institutions, sharing of resources and the funding of joint initiatives in line with the goals of EUA's vision document *Universities without walls – a vision for 2030* (EUA, 2021).
- Development of digital pedagogical competence and coordinated support for pedagogical development initiatives at all HEIs.
- Strategies and coordinated initiatives for development of cloud-based services and technologies which can be used without violating GDPR and Schrems II.
- Collaboration and dialogue between pedagogical and legal perspectives and development of pedagogical-legal competence.
- Special attention to student accessibility issues.

In summary, the covid-19 pandemic has been an unexpected catalyst for national mobilisation in the digitalisation of higher education in Sweden. There is now a higher level of awareness and greater cooperation between HEIs, authorities and stakeholder organisations and the foundations are being laid for a more coordinated approach to digitalisation in the future.

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