Scandinavian Journal of Educational Research

ISSN: (Print) (Online) Journal homepage: https://www.tandfonline.com/loi/csje20

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To cite this article: Mika Hietanen & Annika M. Svedholm-Häkkinen (2022): Transition to Distance Education in 2020 – Challenges among University Faculty in Sweden, Scandinavian Journal of Educational Research, DOI: 10.1080/00313831.2021.2021444

To link to this article: https://doi.org/10.1080/00313831.2021.2021444

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Published online: 18 Jan 2022.

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SCANDINAVIAN JOURNAL OF EDUCATIONAL RESEARCH
https://doi.org/10.1080/00313831.2021.2021444

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Transition to Distance Education in 2020 – Challenges among University Faculty in Sweden

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ABSTRACT

This study aims to describe the challenges that faculty faced in the transition to distance education in higher education during the COVID-19 pandemic in spring 2020. The study presents the results from a nationwide questionnaire, answered by 1,963 individuals, concerning the transition among university faculty in Sweden. The results highlight the main obstacles and describe the practices in teaching, supervision, and examination. Educators faced challenges regarding technology, pedagogy, and working conditions. According to them, distance education was lacking in several ways, including best practices for distance education and online teaching and IT support and employer support. Simultaneously, the crisis resulted in a huge leap forward in distance education. Three months after onset, about half of the respondents had tried some new pedagogical ideas and were more positive towards distance education than they were in the past.

ARTICLE HISTORY
Received 31 December 2020
Accepted 27 November 2021

KEYWORDS
Distance education; online teaching; video-pedagogy; LMS (Learning management system); Zoom; higher education faculty; COVID-19; distance work

On 11 March 2020, the World Health Organization (2020) declared the COVID-19 outbreak as a pandemic caused by the novel coronavirus, SARS-CoV-2. On 17 March, the Swedish government directed that all teaching from secondary education upwards should be given in distance mode, beginning the next day (Regeringskansliet, 2020; SVT, 2020). Decision makers and administrators were unprepared for this (Kniivilä, 2020; Norman, 2020). This period represents a unique educational crisis in teaching because most faculty members lacked both formal training (Coswatte Mohr & Shelton, 2017; Kyei-Blankson et al., 2020) and practical experience with distance education (Hechinger & Lorin, 2020; McMurtrie, 2020; Yates, 2017).

Since the turn of the millennium, most universities offer courses online, with many providing entire programmes, and the number has been growing rapidly (Bouchrika, 2020). It could even be said that the spring of 2020 represented the biggest leap forward in distance education since the unveiling of the World Wide Web in 1991. Before the pandemic, most faculty members were reluctant to accept the validity of distance education, as a U.S. survey in 2019 showed (Lederman, 2020). However, as Hrastinski in a Swedish handbook for distance education noted (2018, p. 13, our trans.), "the digitalisation of higher education has developed from an area that is relevant to some, to an area that is relevant to everyone in higher education." In a 2017 report, the Association of Swedish Higher Education Institutions (SUHF) recommended that the compulsory

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pedagogical course for university faculty should, for example, enable them to "be able to use and contribute to the development of physical and digital learning environments" (SUHF, 2017, p. 5, our trans.). This need is noted in research, also (Gülbahar & Adnan, 2020).

Distance education has always been dependent on modes of delivery. In Sweden, online availability of services ranks high internationally (92%, above the EU average of 86.8%; the European Commission, 2020), which is reflected in the education field as well.

Two fundamental technologies were already well established in Swedish universities: video conferencing systems and learning management systems (LMS). Twenty years ago, a variety of LMSs were widely used in Nordic higher education (Paulsen, 2002). Technical concerns at that time were mainly related to user friendliness and integration with other necessary systems. In addition, LMSs were not used much for course content creation (Paulsen, 2002). The situation has changed significantly. The new generation of LMSs includes several tools for course content creation and is more user-friendly (Correia, 2018, Chapter 5). Since the national purchase of Instructure's *Canvas* in 2017 by Sunet (Swedish University Computer Network; Sunet, n.d.a), this modern system now dominates higher education in Sweden (used by 28 universities; Sunet, n.d.b).

Although they overlap, we find it useful to divide attitudes and experiences regarding distance education into technical and pedagogical. Regarding the technical aspects, Zharova et al. (2021) identified three problems among teachers: (1) reluctance to spend time on mastering a new system, (2) a general lack of motivation to work with LMSs (and other systems), and (3) the instability of such systems. They note that the first two stem from a lack of understanding of "the purpose and benefits" of using a system. The third is a lesser concern in Sweden because of its good broadband connections.

In terms of pedagogical concerns, the main critique of distance teaching is the lower quality of interaction, which is generally considered a necessary ingredient for a successful learning experience (McIsaac & Gunawardena, 2001; Moore, 1989). The faculty strongly believes in the higher efficiency of face-to-face teaching on campus (Anderson, 2003; Lederman, 2020), which causes a challenge in finding a course design in distance education that compensates for the loss of on-campus interaction. In fact, much of the Swedish handbook on distance education is devoted to didactics involving interaction (Hrastinski, 2018).

The pandemic also affected the faculty's working conditions, and working at home had an impact on health and wellbeing (UKÄ, 2021, p. 19). The situation is novel and needs to be studied to present a well-rounded description of the aspects that affected the faculty during the spring of 2020.

Aim and Research Questions

Our aim is to describe the challenges in the transition to distance education in higher education in spring 2020 during the COVID-19 pandemic from the perspective of the faculty. We obtained data from a questionnaire focusing on teaching, supervision, and examination from the perspectives of technology, pedagogy, and working conditions. The responses were grouped around the following three questions:

- How did the faculty depict their technological and pedagogical readiness, as well as attitudes towards distance education?
- What challenges did the faculty face during the transition and how were they met?
- What was the effect of the transition on working conditions?

In addition, we explored whether the transition involved varied challenges for different groups based on gender, age, and teaching experience. We also explored the role of attitudes towards distance education and concerns about becoming seriously ill with COVID-19, since these may have affected the experience.

Methods

Participants and Procedure

The target population was the faculty at universities in Sweden. In collaboration with the Swedish Association of University Teachers and Researchers (SULF), we sent an e-mail invitation and two reminders to 16,887 faculty members in SULF's database. The responses were anonymous. The questionnaire was in Swedish and was open from 2 to 17 June 2020; thus, we could obtain data from faculty after they had experienced teaching in the distance mode during the pandemic.

The final sample comprised 1,963 responses (response rate = 11.6%) from faculty who had taught during March–June 2020. Table 1 presents the demographic information about the sample and comparable information about the members of the SULF. Overall, the sample was representative. Only the proportion of doctoral students was somewhat smaller than the target population, probably explained by self-selection, as only few doctoral students are involved in teaching. There was also a slight overrepresentation of the respondents from large universities. On average, our respondents had 18.7 years of teaching experience (SD = 9.9 years, range 0–46 years).

For background information, we questioned the participants' concerns about falling ill with COVID-19. On a five-point scale (1 = not at all concerned and 5 = highly concerned), the respondents' mean rating for themselves was 2.78 (SD = 1.28). Their concern for close family members, friends, or others was higher, M (average) = 3.66 (SD = 1.18).

Questionnaire Overview

We used a mixed-methods online questionnaire with both quantitative and open questions, which were analysed qualitatively. The questionnaire comprised 57 questions (Q1–Q57) which covered everything from technical tools and examination to practices regarding lectures and seminars. Challenges, best practices, and IT as well as employer support were also covered. The questionnaire is provided as supplementary material (Appendix S1).

Table 1. Sample and target population demographics.

	Sample (N = 1,963)	Population (N = 16,887)[a]
Gender[b]		
Female	53%	51%
Male	45%	49%
Other or NA	2%	
Age	M = 52.2 (SD = 9.4), range 25–73	M = 50
Position		
University lecturer, researcher, postdoctoral researcher	53.9%	45%
Professor	19.7%	7.7%
Adjunct university lecturer	17.0%	12.7%
Doctoral student	4.1%	15.7%
Other or information missing	2.6%	18.7%
RESEARCH area (OECD, 2015, p. 59)		
Social sciences	34%	NA
Humanities and arts	22%	NA
Medicine and health sciences	19%	NA
Natural sciences	14%	NA
Engineering and technology	11%	NA
Agricultural and veterinary sciences	< 1%	NA
Size of university where employed		
Large (> 15,000 students)	60%	55%
Medium (5,000 < 15,000)	33%	35%
Small (⩽5,000 students)	7%	10%
NA	2%	1%

Notes. NA = data not available. [a]Number of persons who received an invitation to participate in the survey. Population characteristics as of May 2021 (except for size of university where employed, which are from May 2020).
[b]Gender for the population was registered as binary.

None of the questions were mandatory; that is, participants could answer as many as they wanted. The response rate to the quantitative questions was generally high (> 90%). Where the response rate was lower, this is indicated under the Measures and Results sections. In the quantitative analysis, missing responses were deleted using a pairwise deletion. With respect to the open-ended questions, where the participants could elaborate on their responses, the response rates were lower and are indicated under the two above-mentioned sections for each question separately.

Content Analysis of the Responses to Open-ended Questions

The questionnaire included 18 free-text boxes. Fourteen of these were the last option in a multiple-choice question and often labelled "Other, please specify" (hereafter "other"). Many of these contained a significant amount of information, often outside the intended scope of the question. Only four questions were presented as actual open-ended ones with space for longer answers. Overall, the 18 free-text answers comprised 9,270 comments and over 186,000 words. All the information was analysed. To obtain the general features and the details of the respondents' opinions and experiences, a qualitative analysis was conducted through a *close reading* (cf. De Castilla, 2018). All responses were read, and similar answers were classified as *topics* and further grouped under *themes*. In the free-text questions, the "other" category included answers ranging from unclear to comments about something other than what was asked and to topics with less than six respondents.

Analysis of Quantitative Measures

Unless stated otherwise, all quantitative measures were on a five-point scale, with the larger values denoting stronger agreement or satisfaction. To reveal whether the responses differed by gender, age, teaching experience, research area, attitudes towards distance education, or level of concern about COVID-19, we ran contingency tests and correlation analyses with these variables and all the quantitative measures included in the survey. Statistically significant relationships are given below. For brevity, analyses with non-significant results have not been mentioned. Due to their small number of respondents, agricultural and veterinary sciences were not included in the comparisons between research areas.

Measures and Results

Technological and Pedagogical Readiness and Attitudes

Sixty-four per cent of the respondents stated that they had completed the university's compulsory pedagogical course but did not get enough of the information they needed for distance education (Q8). Eighteen per cent had taken the course and felt it had given them the necessary skills, while 16% had not taken the course. Sixty-eight per cent reported that distance education was not covered in the course.

Before the pandemic (Q14), 33% of the faculty had no experience in distance education, 29% had some experience, 22% had substantial experience, and 16% had great experience. Ten weeks after the transition (Q15), 89% of the respondents had some or much more experience in distance

Table 2. Distance education experience after 31 May 2020 by gender (Q15).

	Experience		
Gender	Same as before	Greater than before	Much greater than before
Women	9%	40%	52%
Men	12%	46%	42%

Table 3. Attitudes towards distance education (Q17).

Statements (scale 1–5)	*M*	*SD*
Distance teaching has worked well for me.	4.02	0.96
Distance teaching is not as fun for me as teaching on campus.	3.94	1.21
Distance teaching makes me lose the connection with the students.	3.82	1.10
Distance teaching is more stressful than teaching on campus.	3.25	1.30
Distance teaching lowers the quality of the learning of the students.	3.22	1.17
I have saved time thanks to distance teaching.	2.18	1.32
Distance teaching is pedagogically better than teaching on campus.	2.17	0.98

education. As shown in Table 2, a larger proportion of women than men reported that the pandemic had increased their experience of distance education, $\chi^2(2) = 15.97$, $p < .001$.

Regarding faculty's opinion on distance teaching before the transition (Q16), half of them (51%) favoured blended learning that combined distance and campus teaching, 25% considered distance education to be a good option, and 23% believed that it should be avoided. These preferences differed among the sexes, $\chi^2 = 56$, $p < .001$, with a larger proportion of women (57%) than men (45%) favouring blended learning.

The respondents generally assessed that distance teaching worked well for them. Table 3 shows the mean ratings for seven statements. The overall average was high, especially when considering the challenges indicated elsewhere in the questionnaire. However, respondents' views on specific aspects of distance education were more negative. For further analyses, we also calculated the average score of these seven items (with negatively worded ones reverse scored so that larger values denote a more positive view). This variable had good internal consistency (Cronbach's $\alpha = .80$, $M = 2.59$, $SD = 0.78$). The overall attitude was positively related to the previous experience with distance teaching ($r = .23$, $p < .01$).

We also asked about the general attitude towards distance teaching as a form of teaching *after* May 2020 (Q18). Forty-five per cent answered, "I am now more positive towards distance education"; 48% answered, "My attitude towards distance education has not changed"; and 7% answered, "I am now more negatively inclined towards distance education".

To further assess the digital competence of the respondents, we asked about their knowledge of and engagement with the available digital tools for distance education, with three yes/no statements (Q29). A majority (80%) had started using a new tool during the spring of 2020 (Q29, statement 2). However, 63% had limited themselves to the minimum of necessary tools. Only 48% had a general idea about what tools were available and what could be done with them.

Regarding interest in using different digital tools (Q29, statement 1), there were variations among the research areas: within Technology, a majority, 60%, had tried out different tools, within Medicine and Health Sciences, 49%, and within Social Sciences, 41%. In the Sciences, 33% had tried out different tools and in the Humanities and Art, 26% – less than half compared with the area of Technology.

In line with the finding that 74% of the faculty within Humanities and Arts had used only a minimum of tools, only 40% of the respondents in these fields reported that they had a good overview of the available tools and their purposes (Q29, statement 3), whereas most faculty within Science (71%) reported very good knowledge in this area. Other fields place in between these two (Technology 56%, Social Sciences 49%, Medicine and Health Sciences 44%).

Technical and Pedagogical Challenges

Forty-six per cent of the respondents had tested new pedagogical methods (Q40), 52% had not, and 2% did not answer.

How Teachers Implemented Distance Teaching

A series of questions (Q19–36) addressed how participants implemented different aspects of their teaching. For each question, participants could check all the options that apply. Table 4 shows the proportion of participants who had been involved in each activity and participants' ratings of how satisfied they were with the solutions they had used. Satisfaction did not differ for different solutions (e.g., between different LMSs). As seen in the table, satisfaction was low for forms of teaching that required the most interaction: labs, seminars, and practicals. However, the more experience teachers had with distance teaching before the pandemic, the more positive their sentiments were.

Labs. Eighty per cent had not carried out any lab exercises (Q38), and 12% had replaced labs with online versions. Three per cent reported that all labs had been suspended and 3% that some had been suspended and some transformed into online versions. Only 2% reported that most labs had been held normally on campus.

We asked why seminars or lab exercises did not work so well in distance mode (Q42). Of the 1,246 respondents to this question, 67% chose "the lack of normal contact where the communication works more naturally", 21% "technical problems or limitations", and 12% "other". Among these, the "other" answers, the majority of problems were related to the lack of activity, motivation, and interaction (74%). For some, the seminars and lab exercises worked better. We asked why (Q43), again with two options and "other". Of the 330 persons who responded to this question, 41% chose "the online setup has inspired me to try new things", 31% selected "I have had a different lesson plan than normal", and 28% "other".

Practicals and apprenticeship. We asked how faculty had implemented apprenticeship and different forms of practice, important within fields with practical aspects (Q44, $N = 1{,}057$). Thirty-eight per cent were able to carry out all practicals and apprenticeships, with some special arrangements; 25% could conduct only part of them and cancelled the rest, 19% had to cancel all, 11% conducted some digitally, and 7% conducted all of them digitally.

Greatest Challenges in Teaching

We asked about the greatest challenges in teaching during the transition (Q46) and presented seven response options and "other". The respondents had to select which challenge was the greatest, which was the second greatest, and which the third greatest ($n = 1{,}807$). However, since responses to "other" ($n = 262$) to a great extent overlapped with the rest of the options, we combined the data from the fixed responses with data from the "other" responses. Combining the fixed alternatives with the *topics* that emerged from the free-text answers (in "other"), three *themes* emerged: pedagogical, technical, and work-related challenges (the total number of mentions was 2,069, which exceeds the number of respondents, as some participants both chose a response and gave an answer as free text). Counting the number of times each theme was chosen as the greatest challenge or freely described under "other", we found that pedagogical challenges were dominant (81%). This theme was followed by technical challenges (13%). Work-related challenges were negligible (2%), as were other challenges (4%). The pedagogical challenges are given in Table 5 (the others only had topics with < 100 respondents each). A more extensive description of the topics can be found in Supplementary Material, Table S1.

What stands out is that pedagogical challenges dominate (80%) and not the technical (13%) or work-related (4%) challenges. In particular, 848 respondents noted the lack of personal contact as their greatest pedagogical challenge.

Next, we included an open-text question (Q47, $n = 1{,}200$), "The following I generally think has been the single greatest challenge for me as a teacher during the Corona crisis". The responses seem to reflect the respondents' situation more comprehensively, covering not only teaching but also working as a whole. The challenges were almost the opposite of that in the responses to the previous question: work-related aspects were at the top (36%) and challenges related to pedagogy at the bottom (12%), before challenges related to management (5%). Time (28%) and technology (13%) were in-between and nothing or other at 6%. For examples of the responses, see Supplementary Material, Table S2.

Table 4. Respondents' solutions to implementing distance teaching, and satisfaction ratings of the solutions (Q 14–15, 19–20, 23, 30–34, 36, 38–39, 41, 45).

		Satisfaction							
	Used by	Descriptive statistics		Relation to age (Pearson correlation)		Relation to self-reported experience of distance teaching before the pandemic (Q14)		Relation to self-reported increase in distance teaching experience during spring 2020 (Q15)	
		M	*SD*	*r*	*p*	*r*	*p*	*r*	*p*
Video-Conferencing Tools (Q19–20)	99%	4.15	.76	-.07	<.01	.05	.04	.10	<.001
Learning Management Systems (Q23–25)	82%	NA[a]							
Examination (Q30–31)	87%	3.81	1.12	-.08	<.01	.12	<.001	-.04	*ns*
Supervision (Q32–33)	81%	4.21	.93	-.02	*ns*	.16	<.001	-.03	*ns*
Lectures (Q34, 36)	74%	3.42	.94	-.03	*ns*	.14	<.001	-.01	*ns*
Labs (Q38, 39[b])	20%	2.29	.74	-.12	.02	.08	*ns*	-.03	*ns*
Seminars and mathematics or statistics labs (Q41, $n = 1{,}414$)		2.43	.85	.04	*ns*	.14	<.001	-.02	*ns*
Practicals, apprenticeship (Q45, $n = 156$)		2.20	.78	-.04	*ns*	.27	<.001	-.20	.01

[a]Due to technical errors, the questionnaire system did not show Q24–25 to the respondents.
[b]This question was formulated as "Regarding labs: do the students reach the learning goals with the methods which have replaced labs?" It received 375 responses.

Table 5. Greatest challenges in teaching topics (Q46).

Challenges	Number of mentions
Lack of personal contact in conversations, seminars, examinations etc.	848
Not been possible to transfer some forms of examination into distance mode in a good way.	335
More difficult to uphold good discussion during seminars.	211
More difficult to uphold interest during lectures.	104
Other pedagogical challenges.	155

To get a more concrete picture of the faculty's challenges in teaching, we asked what they had tested and found that it *worked less well* (Q48, $n = 407$). Three *themes* emerged, where the demarcation between the first two was fluid. Forty per cent of the participants expressed topics that could be classified as pedagogical–technical solutions and 16% topics classified as pedagogical solutions. The third theme was Zoom (8%). Twelve per cent were classified under *nothing*. The top three *topics* are recurrent in other free-text answers in the questionnaire but pronounced here: (1) "exams at home are difficult to construct and conduct without a risk of cheating" ($n = 59$); (2) "online teaching requires different didactics than campus teaching" ($n = 31$); and (3) "allowing students to not have their camera on during sessions does not work" ($n = 17$). A more detailed description of these topics can be found in Supplementary Material, Table S3.

Correspondingly, we asked for those methods that had *worked* well and were recommended (Q49, $n = 1{,}025$). These themes are similar to the responses to the previous question: pedagogical–technical (38%), pedagogical (28%), technical (15%), and nothing or other (18%). The four biggest *topics* were to (1) use breakout rooms in Zoom ($n = 99$), (2) record short lectures to be viewed before seminars ($n = 83$), (3) use Zoom generally ($n = 78$), and (4) be well prepared and structured ($n = 54$). A more detailed description of these topics can be found in the Supplementary Material, Table S4.

Working Conditions

We asked if the respondents had discussed the terms for distance education with their employers regarding (1) the use of recorded material and (2) updating and quality assurance over time for digital material (Q37). Only 20% of those who answered had discussed the former and even fewer (14%) had discussed the latter.

Despite the many challenges noted in other answers, for "How difficult has it been to work as a teacher during the Corona crisis?" (Q50), the average was only 2.37, between the options "somewhat more difficult" and "more difficult" ($SD = 1.02$). However, compared with the previous answers, those who were worried about COVID-19 infection found it more difficult to work as a teacher ($r = .15$, $p < .01$). Further, the more experience the respondent had with distance teaching before the pandemic, the less difficult the transition was, $r = -.18$, $p < .01$. Women ($M = 2.5$, $SD = 1.0$) faced more difficulties than men ($M = 2.2$, $SD = .99$), $t(18887.2) = 3.08$, $p = .002$, Cohen's d $= .14$.

When asked if teaching tasks took more time due to the transition to distance teaching (Q51), the average was 3.9 ($SD = 1.24$). Seventy-one per cent of the respondents agreed or strongly agreed that teaching had taken more time than normal. Agreement increased with age ($r = .14$, $p < .01$) and also with worry about being infected (Q10), $r = .16$, $p < .01$, or that someone close would be infected (Q11), $r = .13$, $p < .01$. Previous experience diminished the need for more time, albeit slightly ($r = -.13$, $p < .01$). Women ($M = 4.2$, $SD = 1.1$) to a higher degree than men ($M = 3.7$, $SD = 1.3$) reported that the transition took more time, $t(1818.1) = 4.05$, $p < .001$; Cohen's d $= .19$.

The most common source from where the extra time was taken (Q52), was research (45%), followed by other tasks (26%), spare time (22%), or "other" (4%). Only a small proportion (2%) reported that they would be compensated for overtime. Twelve per cent had not worked more than usual.

We asked the faculty's opinion on a scenario where the university would extend the period of distance teaching for a year, until the summer of 2021, which Cambridge University at that time had announced (BBC, 2020). This scenario was unpopular ($M = 2.19$, $SD = 1.13$). We asked why the respondent found this scenario preferable or undesirable (Q53). The free-text comments almost exclusively provided reasons for why the extension would be undesirable (Q54, N tot. = 1,301), repeating the challenges mentioned in earlier answers.

Two more specific questions were related to working conditions: "Did you receive education or technical support to manage the transition into teaching in distance mode?" (Q55, $n = 1,940$) and "Has your employer offered support and contacted you in order to follow up on the transition to working at a distance?" (Q56, $n = 1,937$). Fifty-three per cent had received sufficient or more IT support, but 20% reported that they had received no support at all. Fifty per cent of the respondents had received sufficient general support from their employers.

In the final question (Q57), the respondents were invited to freely give comments about "anything that has not been covered by the questions or that you want to convey to the project". Here, the high number of responses is notable ($n = 716$), but the answers iterate what was said in the previous free-text comments. The negative comments were more than twice as many (61%) as the positive ones (26%). A more detailed description of these topics can be found in Supplementary Material, Table S5.

Discussion

How Technological and Pedagogical Readiness and Attitudes Were Depicted

Considering that the respondents, on average, had about 19 years of teaching experience, it is notable that almost two-thirds did not have enough experience to quickly plan and implement distance education courses. After the pandemic, 9 out of 10 respondents had some or much more experience. Although the infrastructure was in place, and Sweden generally has a high level of digitalisation, the faculty was not prepared to provide high-quality distance education. They generally lacked pedagogical and technical proficiency.

The compulsory foundational pedagogical course did not give faculty what they needed for the transition, and we agree with both the respondents and the SUHF (2017, p. 5) that distance education should be included. Modes of distance education will continue to change, which raises the question of whether university faculty should have compulsory continuing education similar to teachers in primary and secondary education?

During the transition, most faculty started using new tools, but the majority limited themselves to only those that were necessary. It is disconcerting that, on average, for all disciplines, only half of the faculty knew what tools were available when they were required to transition. Universities would do well to introduce the available tools for different purposes to all faculty members in general.

We found there was frustration among the faculty about difficulties in setting up examination in a way that discourages cheating. The first pandemic report from the Swedish Higher Education Authority (UKÄ) noted an increase in disciplinary measures by 61% between 2019 and 2020 (UKÄ, 2021, p. 20). The free-text answers in our survey echo the difficulties highlighted by the UKÄ: difficulty in quickly adapting traditional examinations to online or take-home examinations and the lack of effective monitoring during online examinations (cf. UKÄ, 2021, p. 20).

Almost all faculty members found that distance education was less fun than campus teaching, more stressful, and that contact with students was lost. Many thought that distance education lowered the quality of students' learning. These results should be interpreted against the background of the crisis. The transition was a forced-learning experience. As Hodges et al. (2020) suggested, we need to differentiate between courses that are planned from the beginning and designed to be given in distance mode and "emergency remote teaching" presented as a response to a crisis.

Against this background, it is remarkable that, on average, the respondents reported that distance education had worked well. This is supported by the UKÄ (2021, p. 17), which suggests as an "important factor for the successful and quick transition", that the technical infrastructure was already in place before the pandemic. Although technical structures are necessary, our material provides additional explanations. Overall successful transition is primarily due to the faculty's readiness to take time from other tasks and ensure the quality of their courses. We believe that this indicates the importance faculty places on their teaching: they did what was needed to be done to ensure an acceptable level of quality even when it was difficult.

Additionally, the more experience the faculty had with different tools or modes of distance teaching before the pandemic, the more satisfied they were, indicating that the problems were not so much in either limitations of technology or lack of pedagogical solutions at the university level but in a lack of education and experience in distance education at the individual level. This is further supported by our results that the more experienced the respondents were with distance teaching, the better they reported that it had worked during the transition. Experience improved several aspects: less time was needed, better quality perceived, and fewer problems experienced. Previous experience was the only factor that consistently resulted in a better experience of transition among the respondents.

After May 2020, almost half of our respondents became more positive towards distance education. Considering all the challenges, and although the faculty's readiness initially was lacking, only 7% became more negative towards distance education. The transition forced all involved to learn new tools and ways of working, and for many, the end result was better than expected.

Technical or Pedagogical Problems and how They Were Addressed

One of the clearest indicators of the pedagogical impact of the pandemic on the faculty is that half of them used a new pedagogical method during this period. Overall, the respondents were satisfied with the programmes and tools they used.

Video meetings were the focal point, and Zoom became the hallmark of university teaching. The high satisfaction with it corresponds with a recent evaluation of videoconferencing systems from the perspective of quality of the educational experience, where Zoom was found to include all important learning-related features such as screen sharing, annotation tools, polling, and virtual hand-raising (Correia et al., 2020, p. 441).

Supervision turned out to work best and respondents reported that they will continue using online supervision after the pandemic.

For many, their LMS was unfamiliar, since a majority of the universities had recently migrated to a new system. Consequently, transitioning courses more comprehensively than before to an LMS required a lot of time.

Regarding the greatest challenges, a few topics surfaced repeatedly, such as problems related to the lack of personal contact. The lack of physical proximity affected both students and teachers and working mostly online increased the difficulty and reduced motivation. Respondents offered several explanations for this: informal talk is lost in a formalised setting; for example, in a Zoom meeting, non-verbal cues are lost to an extent, which makes communication poorer and also increases misunderstandings. Issues that could easily be resolved during breaks on campus were more cumbersome to deal with online. Indirectly covered in the responses, the student perspective offers some explanations to the problems (cf. Selwyn, 2016).

Therefore, practical exercises and apprenticeships did not work well, and the comments reflected the problems of trying to convert practical tasks into digital ones. This holds true for seminars and lab exercises, since both are conducted in small groups with a lot of interaction.

Faculty did not agree that a live video-connection could substitute physical meetings, and the limitations negatively affected both the pedagogical and psychological aspects of teaching, both well-known challenges described in previous research (cf. a recent overview by Rapanta et al., 2020).

Although the technology had been available for some time, teachers' own production of videos became a common feature of university teaching. In most cases, these videos were short pre-recorded lectures, shared with students asynchronously, followed by a seminar or a session for questions and discussion.

When asked about the greatest challenges in teaching, the pedagogical ones dominated (80%), which probably reflects the importance faculty places in offering good courses for students. However, the demarcations among pedagogical, technical, and work-related issues are fluid. A technical challenge for one teacher is a pedagogical one for another.

Finally, by adopting several new practices, teaching seems to have worked fairly well, for many at the cost of time taken from other tasks.

Effect of the Transition on Working Conditions

The major challenge during the spring of 2020 was that the transition took more time than was reserved for tuition. For those who worried about getting an infection or somebody close getting infected, the transition required even more time.

The responses to the question about "the single greatest challenge" indicate that overall, pedagogical concerns, although a considerable challenge, were not the main issue. Working within the constraints imposed by the pandemic was more problematic. Our questionnaire did not reveal exactly why faculty felt strong time constraints even a few months after the beginning of the transition. For some, it was likely, in part, due to the time needed to convert on-campus courses into online ones and in part due to the fact that many conducted synchronous teaching online, instead of converting their courses into more independent distance education, which is typically more asynchronous (cf. the discussion in Hanna, 2003, pp. 71–74).

Considering the gaps in knowledge among the faculty, regarding the tools and pedagogical solutions available, a fair guess would be that shortcomings in knowledge and experience in distance education is another reason for the lack of time. This argument is supported by the small group of faculty who did not find the transition to be so challenging since they were already mostly conducting distance teaching before the pandemic.

Children of faculty in secondary education needed to attend school at home (in Sweden, primary schools did not close during the pandemic). Further, in many families, since two adults worked from home, there was an increase in social constraints. Although working at home was noted as challenging by some respondents, the main concern relates to the workload and the uncertainty of being compensated for the extra time the transition required. These results correspond to those of the UKÄ (2021, p. 19).

In all the responses, we see that aspects of faculty's professional identities and questions of what it means to be a "proper teacher" had to be re-evaluated. It should be expected that, over time, the crisis will result in new attitudes regarding distance work. From the perspective of the university, the management might consider faculty's readiness for distance education more systematically, as suggested by Cutri et al. (2020).

Exploring whether the transition involved different challenges for different groups, only one category stood out often: gender. Women reported a greater increase in experience after 31 May 2020 than men compared to before the transition. Second, a larger proportion of women than men favoured blended learning. Third, women found lack of time to be the main challenge more often. Fourth, women mentioned work-related aspects more often as a challenge. Fifth, although the transition was easier for those with more past experience in distance education, women found it somewhat more difficult. Sixth, women found that the transition took more time than did men.

The results of our survey provide no answers to the reasons for these differences between genders. In any case, these differences should not be emphasised too much, as their effect sizes are small (cf. Cohen, 1992). The only clear conclusion is that women, more than men, would benefit from more support.

Reflections

This was the only nationwide questionnaire on the transition to distance education during the spring of 2020 in Sweden, giving unique data on faculty experience. By combining quantitative and qualitative methods, our aim was to present a picture of how faculty responded to the transition to distance education during March–June 2020. The number of free-text comments indicates that the questionnaire also served as an outlet for the frustration generated during the period. Many respondents criticised their employer or colleagues, indicating that they were unhappy about their work situation.

The generalisability of the present findings may be limited by the modest response rate. Thus, it is possible that the sample was biased towards, for example, the most dissatisfied members of the academic faculty. However, in terms of demographics, the sample was generally representative of the academic teaching faculty in Sweden.

Despite the possible bias in the sample, the present findings offer a wide and rich description of the experiences of academic faculty during the sudden transition to distance education. Thanks to the mixed-methods approach, a larger variety of experiences could be voiced than if the survey only included quantitative questions. For more comprehensive reports of the transition, we refer the reader to the UKÄ's Pandemic Assignment reports (UKÄ, 2021).

The results of this questionnaire do not reflect general sentiments regarding distance education but specifically those during a crisis, or "emergency remote teaching". As the results show, faculty members did not have sufficient time, knowledge, or support for the transition. Therefore, the results may be respondent-biased and negative. In fact, a significant amount of research does not support the notion that distance education produces lesser results than campus education (Black, 2020; DETA, n.a.).

With the interest of presenting the results fairly comprehensively, space has not permitted a comparison with current research of the many aspects the answers to our questionnaire bring to the fore. Suffice it to say that most of the matters covered by, e.g., chapters 1–30 of the *Handbook of Distance Education* (Moore & Diehl, 2019), are relevant. The gap between the state-of-the-art in the research in distance education, and the reality of the faculty in Sweden during the Spring of 2020 is overwhelming.

Considering the enormous impact that the transition had on university faculty, there are bound to be long-term consequences from this period. The results show that half of the faculty reported a more positive attitude towards distance education after the first intense period of transition. For those without experience in distance education before the pandemic, their transition was extreme. It is too early to draw conclusions on the attitudes on a longer time scale.

We note several challenges for distance education in the coming years. First, support structures need to be overhauled in a way that meets the needs of the faculty. Considering the dominance of pedagogical concerns in the free-text comments, the support would probably benefit from not being driven by IT departments but structured based on pedagogical concerns. Second, to facilitate the transfer of pedagogical knowledge, employers should initiate forums to discuss the central aspects of teaching, such as examination and interaction with students online. Third, time-sustainable structures and practices need to be implemented so that staff do not overwork while recreating on-campus teaching online.

We conclude with a thought from Som Naidu, Executive Editor of *Distance Education* (2020, p. 425): "The irony is that it has taken a calamity for us to rethink and reengineer our approaches to learning and teaching, despite evidence in favor of the need to do so, long before COVID-19 struck."

Acknowledgements

We thank SULF, the Swedish Association of University Teachers and Researchers, for cooperating in reaching out to the university faculty in Sweden to participate in the questionnaire.

Disclosure Statement

No potential conflict of interest was reported by the author(s).

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