

eLearning analytics in times of COVID-19. Insights into management and communication students' perspectives throughout the global Coronavirus pandemic

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Abstract

The COVID-19 pandemic has brought not only a global health crisis, but also many changes and shifts towards a more digitalized working environment. In line with the GlobalET conference theme of this year, this paper looks at how particularly the education sectors has been affected by these new forms of working. One year after the outbreak of the COVID-19 pandemic the Competence Team for the Digitalization of Communication at the FHW University of Applied Sciences for Management and Communication conducted two comparative online surveys with students as well as 60 in-depth interviews. The results of this research help to identify and improve ongoing Distance Learning practices, starting with logistics such as the preferred study mode, recommended duration of the Distance Learning units or mandatory attendance of students during class. The outcome of the research will further contribute to sharpen the clarity of the purpose of digital activities to understand the required support services or online material and to develop possibilities to track students' study progress. Even though there is an understanding that more than one year after the outbreak of the COVID-19 pandemic the findings can only represent the current status and cannot give a long-term outlook, they might be useful to further develop students' needs for future Distance Learning and its practices.

Keywords: covid-19, higher education, digitalisation, elearninganalytics

1. Introduction

The COVID-19 pandemic has had great impact on all parts of the society but has particularly forced the education sector to change and adapt due to the closure of higher education institutions (Al-Kumaim et al., 2021, Holzer et al., 2021, Taga et al., 2020, Mohamed et al., 2020). While the overall transition to online learning was positive and opened new opportunities, it also caused challenges and difficulties linked to the sudden changes, such as mental health problems or digital inequality (Berghoff et al., 2021, Marczuk et al., 2021, Al-Kumaim et al., 2021, Pokhrel & Chhetri, 2021, Walwyn, 2020, Rashid & Yadav, 2020).

Due to the Coronavirus pandemic, a major push towards the digitalization of higher education was caused (Hargitai et al., 2021, Al-Kumaim et al., 2021). Although the concept of Online Learning is not new but started almost three decades ago, the transition to 100% Distance Learning was radically accelerated through COVID-19 (Hargitai et al., 2021, Kreulich et al., 2020). An overall increased need for digital competences could be observed, even if the implementation of Distance Learning varies greatly (Holzer et al., 2021, Farnell et al., 2021, Berghoff et al., 2021, Kreulich et al., 2020). Now more than a year after the outbreak of the pandemic the advantages of Distance Learning become more visible, such as higher flexibility of studying, streaming opportunities, interactive exercises or eLearning platforms, just to mention some (Pokhrel & Chhetri, 2021, Marczuk et al., 2021, Berghoff et al., 2021, Kreulich et al., 2020).

In line with this year's Global Conference on Education and Teaching (GlobalET), the following paper focuses on eLearning analytics in times of COVID-19. This research paper is based on the conduction of two online surveys, which were conducted by the Competence Team for the Digitalization of Communication at the FHW University of Applied Sciences for Management and Communication. Since 2019, this Competence team investigates not only the digital changes in communication but also in education and Online learning.

Due to the outbreak of the COVID-19 pandemic, two online surveys were conducted with students of the earlier mentioned university, the first one at the beginning of the pandemic in April 2020 and the second one in March 2021. Additionally, 60 in-depth interviews were conducted during the first survey to assess the emotional status of students during these challenging times.

The main focuses of the conducted surveys were to understand the current Distance Learning reality of students, and which services they particularly use, like or can be improved. There is an awareness that the results of the two surveys rather represent short-time consequences rather than long-term consequences (Farnell et al., 2021). Nevertheless, this contribution aims at reflecting ongoing practices and analytics to improve the Distance Learning experience for students in the future (Marczuk et al., 2021, Walwyn, 2020).

This research paper aims at contributing to the current trend of the increased importance of Distance Learning in the future of higher education. There is an understanding that this might happen in different scenarios, such as through a complete change to Distance Learning, some sort of Blended Learning or 'only' by offering different formats of digital education (Berghoff et al., 2021, Kreulich et al., 2020).

2. Description of sample

This paper is based on the conduction of two online surveys. The first survey was conducted between the time frame of April 8th, 2020 and April, 22nd, 2020. The second survey was conducted between March 2nd, 2021 and March 20th, 2021. Both surveys were conducted with students of the FHW University of Applied Sciences for Management and Communication. The completion rate of both surveys, which were created with UniPark, was 44% in 2020 with 510 students participating in total and 66,63% in 2021 and 561 students participating. After the conduction of the second survey an increased interest in the survey could be noted (increase of 51 students from 2020 to 2021) as well as an increased completion rate of the survey (increase of 22,63% from 2020 to 2021).

The average age of the participating students was approximately 20,15 years in 2020 and approximately 21 years in 2021. In both years that the studies were conducted, most of the

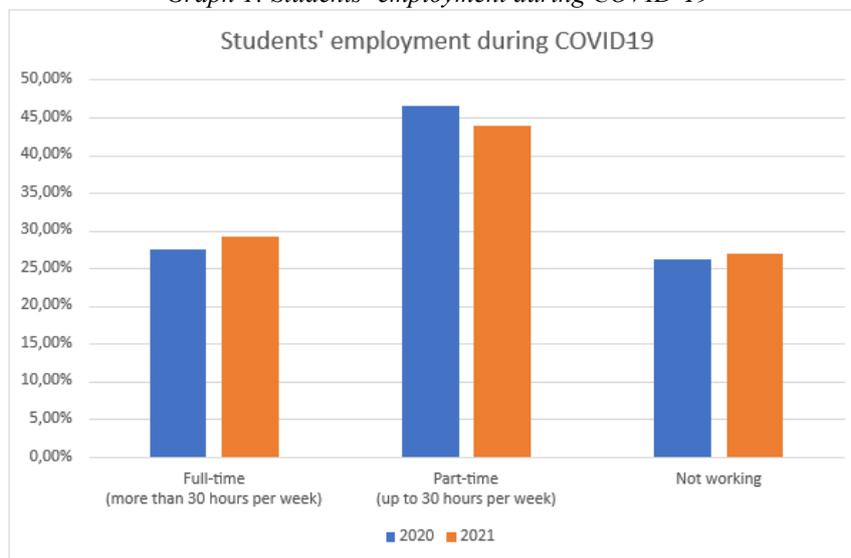
participants were female with 70,7% in 2020 and 69,1% in 2021. In comparison, the participation of male individuals was 29,3% in 2020 and 30,9% in 2021. The distribution of gender in the survey has not changed significantly in comparison of 2020 and 2021.

The surveys were sent out to all students from the FHW University of Applied Sciences for Management and Communication, which offers 10 different Bachelor programs and 8 different Master programs. However, in both surveys mainly students from the Bachelor studies participated, with most participating students doing the BA in Management & Entrepreneurship, the BA in Corporate Communication and the BA in Marketing & Sales in 2020 and the BA in Management & Entrepreneurship, the BA in Finance, Accounting & Taxation and the BA in Tourism & Hospitality Management in 2021. At this point, it seems interesting that Bachelor students seem to have had a greater interest in the surveys than Master students.

The FHW University of Applied Sciences for Management and Communication offers students the study modes ‘full-time’ and ‘part-time’. In comparison, in 2020 60,2% were part-time students and 39,8% were full-time students, whereas in 2021 52,2% were part-time students and 47,5% were full-time students.

Furthermore, in 2020 46,5% of the participants worked part-time (up to 30 hours per week), 27,4% worked full-time (more than 30 hours per week) and 26,2% didn’t work at all. Compared to that, in 2021 43,9% of the students worked part-time, 29,1% worked full-time and 27% did not work next to their studies [see Graph 1].

Graph 1: Students’ employment during COVID-19



Source: Author’s own compilation (2021)

In the next part of this paper, the results of the specific focus of this research will be presented, which was on the analytics of the general eLearning experience.

3. Body of paper

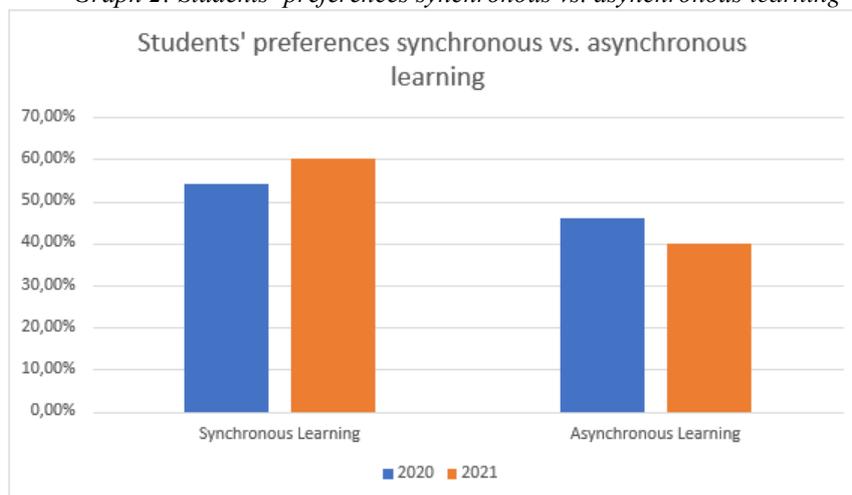
3.1 Analyzing different eLearning study modes and related challenges

A fundamental question that was asked during the surveys, which were conducted at the beginning of the COVID-19 pandemic and one year after, was related to the preferred study

modes. The synchronous study mode which represents a form of studying in which the lecturer and the student are present at the same time was differentiated from the asynchronous study mode. The later one does not require that lecturers and students attend the session at the same time, but rather work within given time frames in which certain tasks should be fulfilled.

Results from the conducted survey in 2020 showed that 54% of the students preferred a synchronous study mode compared to 46% of the students who preferred an asynchronous study mode. Interestingly, an increased preference for the synchronous study mode could be noted during the survey of 2021, when 60,1% of the students voted in favor of this very study mode and 39,9% of the students declared to prefer an asynchronous study mode [see Graph 2].

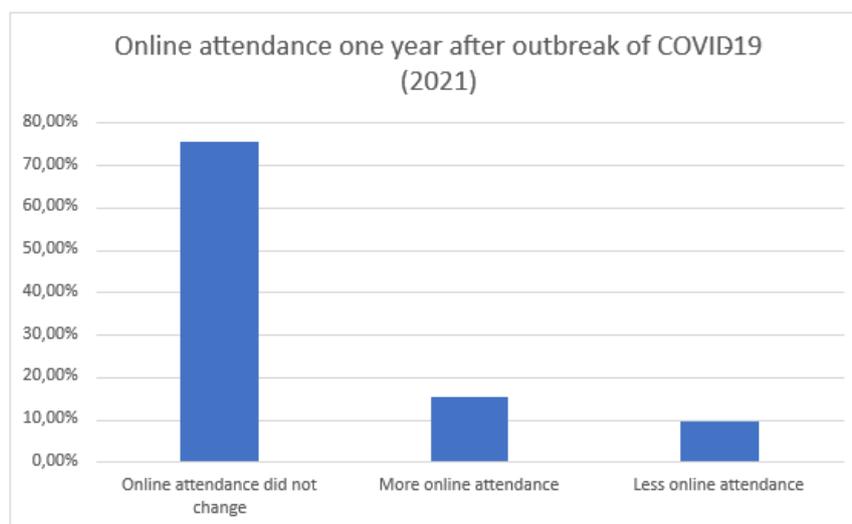
Graph 2: Students' preferences synchronous vs. asynchronous learning



Source: Author's own compilation (2021)

Another research interest of the surveys was the mandatory student attendance which was paused during the COVID-19 pandemic. Interestingly, 75,30% of the students stated during the survey in 2021, that their online attendance did not change during the Coronavirus. 15,20% of the students described a higher attendance in Distance Learning since the outbreak of the pandemic and 9,50% of the students stated that their attendance has become less since the outbreak [see Graph 3].

Graph 3: Online attendance one year after outbreak of COVID-19 (2021)



Source: Author's own compilation (2021)

During the survey in 2021 students were also asked about the impact of the temporary suspension of attendance in class on their personal lives. Answers could range on a scale from 1 which means 'full agreement' to 5 which means 'no agreement at all'.

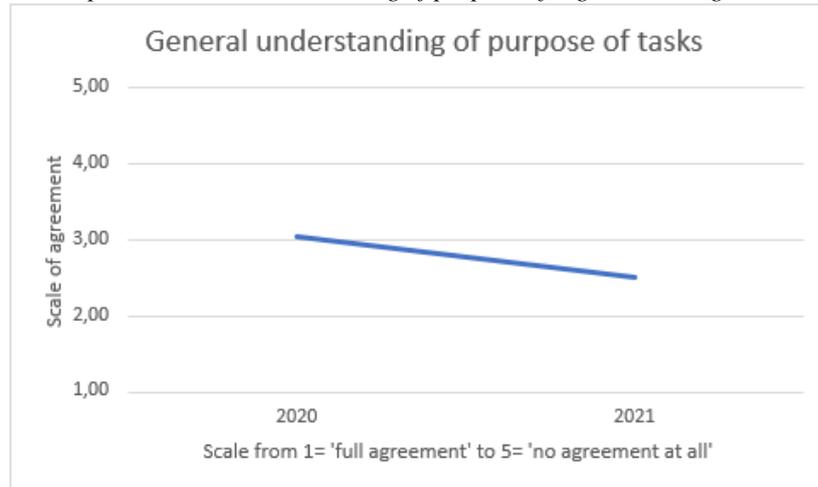
One year after the outbreak of the COVID-19 pandemic students saw a clear advantage for their study-work balance (Students answered with a '1,99' in 2021), on their study-life balance (Students answered with a '2,17' in 2021) as well as on their independent study management (Students answered with a '2,23' in 2021). At the same time, students stated that they do not find it highly challenging to manage their attendance on their own (Students answered with a '4,31' in 2021).

3.2 Analytics of the eLearning environment

In the following paragraphs, insights regarding the (digital) eLearning environment of students of the FHW University of Applied Sciences for Management and Communication will be discussed and compared between the years 2020 and 2021. Again, the answering scale from earlier will be used with 1 meaning 'full agreement' and 5 meaning 'no agreement at all'.

In 2020, students were asked about their general understanding of the purpose of digital teaching and learning materials such as given exercises, preparation and revision tasks, as well as further information on the course provided by the lecturers. The average answer given by students was '3,04', which shows that there was a lack of clarity amongst the students related to the specific purpose of eLearning material given to them. This opinion improved slightly during the first year of the pandemic, as students answered with a '2,52' to the same question in 2021 [see Graph 4].

Graph 4: General understanding of purpose of digital teaching activities

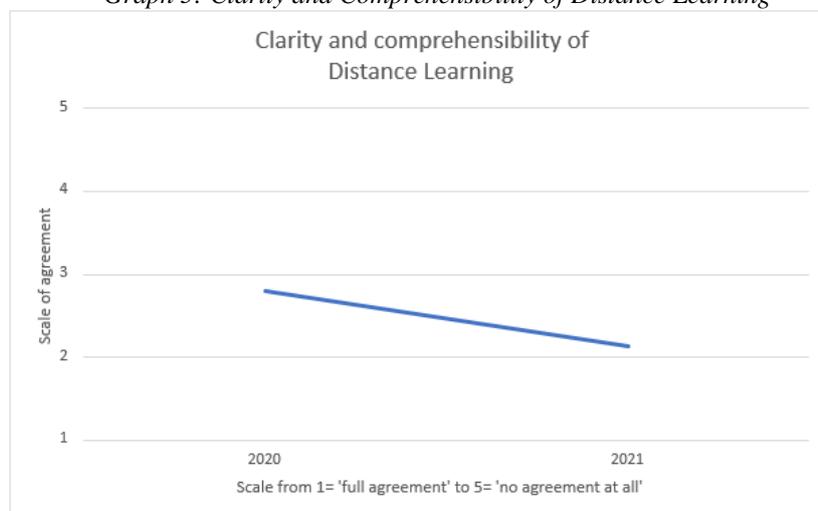


Source: Author's own compilation (2021)

When students were asked whether the eLearning activities are linked to clear tasks and goals, they answered with a '2,79' in 2020. In comparison to that, students' opinions improved in 2021 with a '2,35'. However, they stated that in order to work on the tasks they were given they could need more material (Students answered with a '2,83' in 2020). The one-year COVID-19 eLearning experience seems to have had a positive effect here as well, as students' opinions improved to a '2,26' in 2021.

The question whether study content was mostly clear and understandable was answered with a '2,8' by students in 2020, which clearly shows room for improvement. However, in 2021 students showed greater satisfaction with the clarity and the comprehensibility of Distance Learning and answered with a '2,13' [see Graph 5].

Graph 5: Clarity and Comprehensibility of Distance Learning



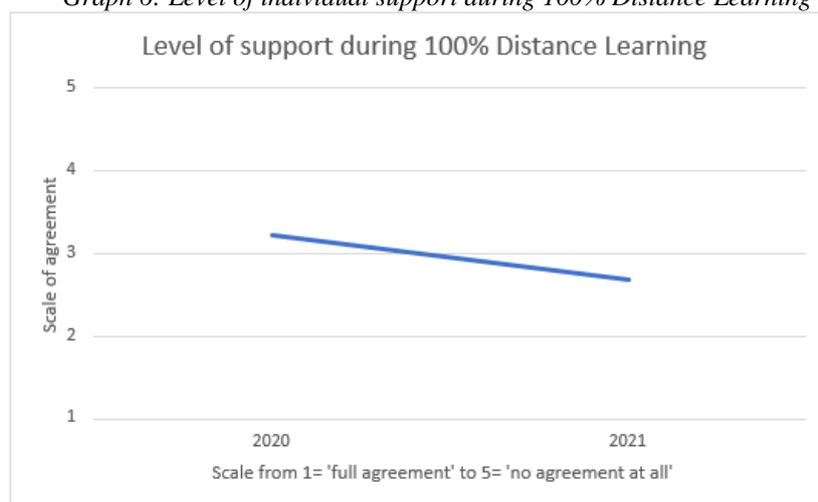
Source: Author's own compilation (2021)

Comparing students' opinions about the organization of Distance Learning activities also showed improvements between the survey in 2020 and 2021. In 2020, students gave a '3,02', which might be influenced by the time restrictions and limited preparation time lecturers had at the beginning of the COVID-19 outbreak. Compared to that, students gave a '2,42' in 2021. Furthermore, in 2020 students gave a '2,59' for the maintenance and updates of the provided eLearning material, which shows a good amount of satisfaction. Again, this value could be improved during the survey in 2021, with a '2,16' given by students.

3.3 Analytics of the personal eLearning experience

During the survey of 2020, students were asked about the level of support they receive during 100% Distance Learning and if they felt generally taken care of. With a '3,23' answer (Same answering scale system as before), students' answers show the difficulty of individual care taking in a complete online study mode. Although this value could be improved in 2021, when students answered with a '2,68', it still shows that students' support during Distance Learning needs to be improved [see Graph 6].

Graph 6: Level of individual support during 100% Distance Learning



Source: Author's own compilation (2021)

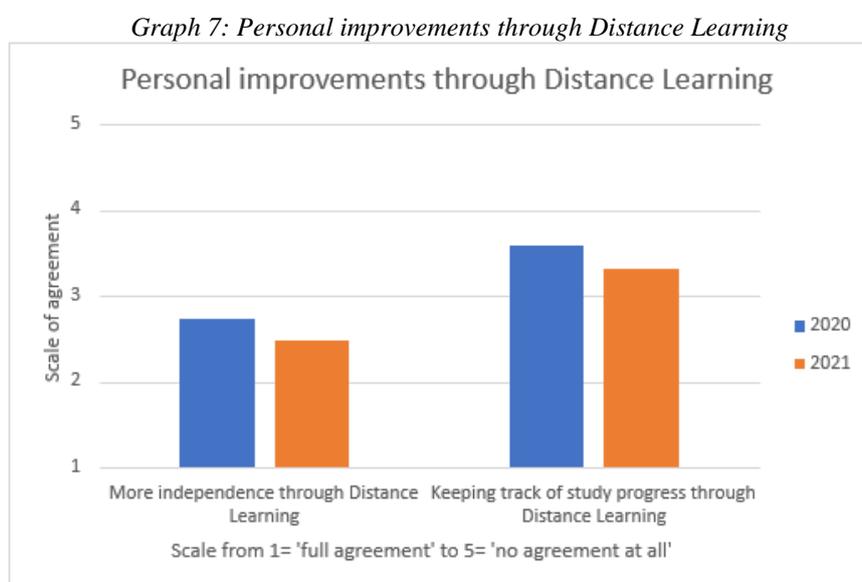
Another interesting aspect of the survey was the question of online workload and lecturers' estimates for appropriate online workload related to their offered courses. In 2020, students answered with a '3,41' which makes evident that there was a great need to work on balancing the workload for students. Students' answers in 2021 show that although students' satisfaction has increased (Students answered with a '2,95' in 2021), there is still great necessity to work on the workload balance.

Within the surveys students were also asked about the differences between the quality of the lectures or seminars. In 2020, students stated that the quality of a lecture or seminar depended very much on the specific class (Students answered with a '1,77' in 2020) and this value almost remained the same during the survey of 2021 (Students answered with a '1,78' in 2021).

Another useful insight was when students were asked whether 100% Distance Learning helps them to deal with study content more intensively. The answers from 2020, in which students average was a '3,73', showed that online distance learning does not yet contribute to

a more intense studying from a student's perspective. Interestingly this value did not change a lot during the last year, with a '3,23' that students gave during the survey in 2021.

During the surveys students were further asked whether Distance Learning contributes to a more independent work environment. The answers from students in 2020 showed that there was no strong tendency toward more independence through 100% Distance Learning (Students answered with a '2,73' average in 2020), nor it helps them essentially to keep track of their study progress (Students answered with a '3,59' average in 2020). Comparing these answers to students' results of the survey in 2021, students felt they could slightly learn more independently (Students answered with a '2,49' in 2021), and could also improve their study progress tracking (students answered with a '3,31' in 2021) [see Graph 7].



Source: Author's own compilation (2021)

4. Conclusion

In the concluding part of this research paper the main findings will be discussed keeping in mind the ongoing discussion of the field mentioned at the beginning of the paper.

One main finding of this research was that even one year after the outbreak of the COVID-19 pandemic, students prefer a synchronous study mode compared to the asynchronous study mode. This surprising outcome could derive from the fact that students who are 'forced' into Distance Learning still prefer some sort of simultaneous interaction with their lecturers or co-students when studying online. For future research it would therefore be interesting to research which specific tasks are best for asynchronous studying.

Another interesting outcome was the almost not changing mandatory attendance of students during the COVID-19 pandemic. Contrary to the assumption that there might be a higher attendance of students due to more time flexibility, almost $\frac{3}{4}$ of the students stated that their

attendance has not changed for them. Although some students stated to attend more online sessions now, only a little smaller number of students stated to attend less sessions during the pandemic. In a further step it would be interesting to find out the motives behind this behavior,

as to find out why students feel more attracted to attend more sessions versus attend less sessions.

Talking about the impact the temporary suspension of attendance has had on students' lives, it was striking to see a positive effect when it comes to study-life or study-work balance. Also, there were surprisingly positive results when it comes to the independent time management of students' attendance in online classes, which was declared not significantly challenging but rather showed a clear students' independence.

Room for improvement could further be found in a variety of Distance Learning settings. Especially in the areas such as meaningful online tasks and content-related activities, a need for a clear communication of tasks and goals or the provision of sufficient material for online tasks could be noted. Furthermore, it will be necessary to put a greater focus on the individual support of students as this seems to be lacking as well as a more appropriate workload for each class.

It was less surprising that students highlighted that the quality of the lecture or seminar varies very much between each other. For further research it could therefore be important to evaluate a strategy so that there is a specific measurement to keep up the quality of each lecture or seminar.

To conclude, for future research it will also be important to do more research on and develop a way to motivate students for online studying and to improve their study journey on a very individual base.

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