Radboud University

Organizational problems that lecturers experienced in times of pandemic.

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Abstract

This master thesis addresses the organizational problems that lecturers experienced at the beginning of pandemic in March 2020. More specific the focus is at the facilitating a distance learning process in the times of pandemic. The research question was: *How did lecturers at universities respond to organizational problems they experienced when facilitating learning process in times of pandemic?* Answering the research question comprised three interconnected parts: what kind of organizational problems lecturers of universities experienced when performed their work in times of pandemic; what solutions they developed in order to overcome the organizational problems; and how they intend to facilitate distance learning process in the future. The theoretical deductive approach included categorizing organizational problems from the theory and developing four different perspectives for describing the organizational resilience. They are the following: A. Change perspective, B. Uncertainty, C. Complexity, D. Resilience time frame.

In this master thesis the unit of observation is lecturers at two different universities: in the Netherlands (Radboud university) and in Poland (the University of Warsaw). Subsequently, unit of analysis are these two universities that were affected by pandemic and switched (more) to distance learning.
The semi-structured interviews were employed to ensure flexibility and openness during the interviews. The interviews were transcribed, and analyzed by template analysis. Where possible was made a link from the problems as well as the solutions to the theory.

In total eight interviews were conducted two universities: Radboud university and the University of Warsaw in October-November 2021. It became the basis for analysis of the organizational problems that lecturers in these particular universities experienced, the solutions to these problems they developed along the way, and the future development of distance learning as seen from their perspective.

Most of the problems that lecturers experienced have already been categorized in the theoretical chapter but some of them were added later during the development of the template. While the lecturers aimed for smooth transition to distance learning after the outbreak of pandemic, this was not an easy challenge. The organizational and digital resilience helped lecturers to bounce back to a state of "normality" and to continue the learning process. No matter how stressed, frustrated and anxious lecturers were, they still managed to cope with the problems in many cases demonstrating personal initiative and starting immediately with preparation to online lectures without waiting for support or instructions from the university management team. The lecturers were able to assess the

situation, to evaluate their own role and abilities in this situation, to overcome frustration or anxiety, and to find the solutions required to keep the learning process going. The organizational problems and developed solutions are presented in analysis section.

The analysis yields a partial answer to the research question. Firstly, the analysis of organizational problems that lecturers experienced in Radboud university and the Warsaw university was presented. Secondly, the solutions to the problems as a way to respond to organizational problems after the start of pandemic were outlined. Thirdly, special attention was paid to the future perspective of distance learning and the interconnection of the organizational problems, developed solutions and organizational and digital resilience. Therefore, the research question is considered to be partially answered in this thesis.
It was possible also to reach the objective of this thesis: to gain insight into what problems lecturers in universities encountered when (further) implementing online education during pandemic and what solutions to these problems they eventually developed.
The research question is considered to be partially answered due to limitations mentioned in the concluding section of the thesis and also due to the fact that the list of organizational problems and solutions presented in this thesis can be enlarged and developed. The final sections in the thesis are: practical implications and implications for future research.

This research was made possible due to voluntary participation of the respondents from Radboud university and the Warsaw university and support of supervisors from Radboud university.

1.1 Covid-19 in higher education

The current pandemic situation has affected the humanity in general and higher education in particular. As of April 8th, 2022, the World Health Organisation (WHO) reports more than 494.6 million confirmed cases of Covid -19 and over 6.1 million deaths worldwide (WHO, 2021). Accordingly, lockdowns and governmental restrictions were the urgent inevitable measures in response to the pandemic, aimed at preventing virus spreading.

As a result, the economy of about every country was influenced and caused the worst economic downturn since the Great Depression (Deardorff, 2020). In May 2020 the Asian Development Bank reported that the current pandemic could cost the global economy between 5.8 and 8.8 trillion USD (Dennis, 2020).

However, not all sectors suffered to the same extent. The most vulnerable were those sectors where face-to-face communication is expected, for instance, sports, hospitality, entertainment, tourism, and higher education. Due to the fact that the virus made personal interaction extremely dangerous, these sectors were affected the most. In the thesis the attention will be focused on how higher education (universities) in general, and lecturers in particular were affected by the pandemic.

According to the data of the United Nations, the COVID-19 pandemic has created the largest disruption of education systems in the history, influencing nearly 1.6 billion learners in more than 190 countries and all continents. The disruption has also impacted 94 percent of the world's student population (United Nations, 2020). No country was prepared for such a crisis. What many affected countries had in common - they were forced to close educational institutions. For example, 188 countries had their educational sectors closed completely (Italy, Spain, Israel, France, and others), while five other countries closed educational institutions on a local basis (Sattar et al, 2020). For universities it meant that they were forced to adjust to the new pandemic reality. However, closing was only a temporary solution. At the first stage, the main challenge for the universities was to ensure health and safety of the students and the staff while continuing with the learning process.

On the global level the World Bank has evaluated the consequences of the pandemic on the learning process and outlined three possible scenarios: a reduction in average learning levels for all students, a widening of the distribution of learning achievements due to highly unequal effects of the crisis on various populations, and a significant increase of students with a very low level of achievements (World Bank, 2020). Nevertheless, these results of the pandemic

should be specified in relation to each and every stakeholder involved. Stakeholders are "any identifiable group or individual who can affect the achievement of an organization's objectives or who is affected by the achievement of an organization's objectives" (Voinea and Kranenburg, 2017, p.52).

A distance learning process can be analyzed from the point of view of five different stakeholders: students involved in the educational process; lecturers who facilitate a distance learning process; staff responsible for providing daily learning process but not giving lectures; university management who is in charge of organizational issues related to the learning process, and the country's authorities that regulate and control the educational process at the system level. Each stakeholder may experience different problems with the pandemic crisis and specifically in relation to organizing distance learning process in remote online education. This thesis focuses on defining and analyzing organizational problems universities experience in the process of adaptation to the distance learning from the point of view of only one stakeholder involved: lecturers. In this thesis lecturer is a teacher at a university who is directly participating in the learning process by ensuring study and assessment activities.

The main challenge of this thesis is to identify what are the organizational problems lecturers encountered after switching to online learning process and how they coped with them.

1.2. The aim of the study and the research question.

Before introducing the research question, it is important to start from the universities at large. Firstly, they must adhere to the governmental regulations imposed in the country in response to the pandemic. Secondly, universities were looking for the possibilities to continue with the study process. From the information processing viewpoint, a university deals with the uncertainty in the form of an unknown virus and its dangerous impact on people. By processing information, the university as an organization observes what is happening, analyzes the problem, makes choice about what to do, and communicate it to the relevant stakeholders (Burton, 2019, p.11). Obviously, in this situation remote online education was the only possible option that eliminated physical interaction within the university and on campus. Therefore, the pandemic accelerated and forced universities to switch study process to fully online. Even if by the most of the students and staff online courses are not considered as fully equivalent to face-to-face courses (Platt, 2014), at that moment, online education was the only possible option for the universities to continue with the study process. On the other hand, the level of digitalization in every university before pandemic was different which

means that to ensure a distance learning process some universities required to implement more changes than the others.

Most of the universities already started to implement online education before the pandemic. The reason for that was to provide accessibility of studies to those who cannot attend classes in person due to personal reasons. It was also believed that online education has the same effect but less costly than face-to-face one (Tesar, 2020). Therefore, many universities in Europe had digitalization already partially implemented in online education before the pandemic. The unexpected disruption of the normal learning process due to pandemic made it impossible for students to study offline in a face-to-face classroom environment. It also forced universities to quick action in response to the sudden educational changes literally overnight. Consequently, universities needed rapid changes in order to support the educational process. The pandemic accelerated and stimulated innovation and further digitalization within the education sector and in higher education as well. Universities were forced to make adjustments to the current programs and implement online education as the only possible solution in order to continue the educational process.

For example, in accordance with the European Student Union survey in answer to the question how on-site classes were transformed into a virtual mode, most of the respondents reported that in person teaching was replaced by the following formats: live-streamed lectures in real time (74.6 %), teaching staff sending their presentations to students (44.5 %), asynchronous pre-recorded lectures available online via video (32.1 %) (Farnell, Skledar Matijević, & Šćukanec Schmidt, 2021). Therefore, most of the respondents from the studied universities in Europe opted for live-streaming of the lectures. This thesis further outlines how lecturers at universities facilitated online learning process, what problems they dealt with and what solutions to the problems implemented.

Therefore, the objective of my thesis is the following: to gain insight into what problems lecturers in universities encountered when (further) implementing online education during pandemic and what solutions to these problems they eventually developed. This thesis will be based on comparing the information obtained in the Schools of Management of two above-mentioned universities – Radboud University (the Netherlands) and the University of Warsaw (Poland).

In both universities a switch into online education was enforced action as an immediate response to the uncertainty caused by pandemic. As a result, lecturers in both universities encountered problems related to the implementation of online education.

The above leads to the following research question:

How did lecturers at universities respond to organizational problems they experienced when facilitating learning process in times of pandemic? Answering the research question comprises three interconnected parts: what kind of organizational problems lecturers of universities experienced when performed their work in times of pandemic; what solutions they found to overcome the problems; and how they intend to facilitate distance learning process in the future.

In both Radboud University (the Netherlands) and the University of Warsaw (Poland) the first reaction to the outbreak of pandemic and consequent governmental regulations was the same. For instance, in the Netherlands all offline lectures were canceled starting from March 12, 2020, when the Cabinet announced the start of "intelligent" lockdown. Consequently, schools and universities were closed, exams postponed, and staff and students were supposed to work and study from home. It was supposed to be temporary solution but as of 23d of March all study programs in the Netherlands were switched to online format completely. Despite the measures taken, the number of infections continued to rise. Higher education remained online till the beginning of the next academic year in September 2020 (de Boer, 2021). Dutch universities faced unexpected disruption in the study process, they were subject to stress and acute shock that required them to scan and understand their operating environment in order to adapt and remain viable and competitive (Blades, 2017).

The first notification about suspension of education activities because of COVID-19 was issued by the Polish Ministry of Science and Higher Education on 11 March 2020. Following the ordinance, the functioning of higher education was limited for the period from 12 March until 25 March 2020 and later on extended till 8th of June which is the last day of summer semester 2019/2020. All education on campus was cancelled during that period, including Bachelor and Master exams and defence processes (Rizun and Strzelecki, 2020). At the same time transition to the distance online learning process was initiated in both universities.

It can be assumed that what helped both universities to return back to the "normal" state and learning process is organizational and also digital resilience. These both concepts are explained in detail in paragraph 2.1.2 and 2.1.3. In terms of digital resilience, for example, the more digital the university was before pandemic, the easier it is to facilitate online learning process in times of pandemic.

A digitally resilient university should adopt new systems and processes ensuring continued competitiveness and survival especially when either internal or external interventions forced them to undergo certain disruptions (Bhagat, 2020). Therefore, in this thesis the topic of

organizational and digital resilience will be discussed further and it will be also analyzed to what extent were both universities digitally and organizationally resilient.

1.3 Setup of the study

This thesis proceeds as follows. Chapter 2 is devoted to the main definitions, theoretical background, key concepts, and review of the main theories. The definitions of the key concepts is presented in paragraph 2.1, the problematic part is categorized in paragraph 2.2.

Chapter 3 outlines the methodological aspects of the research and Chapter 4 contains the findings. Chapter 5 holds the conclusions, future perspective, the limitations of the study and suggestions for the future research. The theoretical and practical implications may yield what necessary conditions are relevant for universities to overcome the problems and to facilitate online learning process. The thesis concludes with reflexivity part.

In order to acquire data for analysis of the research question, a comparative study of two universities Radboud University (the Netherlands) and the University of Warsaw (Poland) was performed.

These both universities have been chosen for the research in the comparative study in order to see what are the differences and possible similarities in the problematic part as well as in the problem solutions part might be observed. The fact that Radboud University I currently study in belongs to Western European group of universities and the University of Warsaw (Poland) that in turn belongs to Eastern European universities might lead to particularly striking results presented in Chapter 4. Additionally, lecturers at both universities that faced problems related to the pandemic got different support from the management of the university and also developed different solutions to the same organizational problems they experienced.

The main focus is on how these particular universities implemented online education in pandemic times and ensured organizational and digital resilience, what problems lecturers in these universities encountered in the learning process facilitation and what were their solutions to the problems. A short introduction of both universities is presented below.

The University of Warsaw was founded by a decree issued on the 19th of November 1816 by Russian Tsar Alexander I (at that time Kingdom of Poland was part of Russian Empire). It included five faculties: of Law and Administration, Medicine, Philosophy, Theology and Arts and Humanities (History, n.d). Nowadays it has around 43 000 students and doctoral

candidates that are studying at 24 faculties and 30 research units (Facts and figures, n.d). Today the University of Warsaw is the largest University in Poland, it is among the top 3% of universities in the world and its graduates won 6 Nobel Prize awards (History, n.d).

Faculty of Management (Appendix 1) was established in 1972 as part of the University of Warsaw, it is the oldest management school in Central and Eastern Europe. It offers Bachelor, Master and Postgraduate studies. At present around 5 500 students are enrolled at the faculty (About Faculty, n.d).

Radboud University Nijmegen (Appendix 2) was officially established on 17th October 1923 under the name of Catholic University Nijmegen but its history dates back to 1656 (Foundation, n.d). It is ranked as the best traditional university in the Netherlands and as of October 2021 24 678 students were enrolled into Master's or Bachelor's study programs. (Facts and figures, n.d).

Radboud School of Management has 5 Bachelor and 38 Master specializations and 4 515 students studying at the faculty (Facts and figures, n.d).

At first sight, both universities are different: established in different time and in different countries, have also different number of students, however it is anticipated that they both have similar process of adaptation to the pandemic times and the same goal -ensuring that students as well as lecturers can still continue with their learning process.

Chapter 2. Theoretical background

This chapter provides a review of the theories and concepts required to put the research question in the perspective of organizational resilience. Paragraph 2.1 outlines the definitions of key concepts. Paragraph 2.2 addresses relevant theories related to the concept of organizational resilience. Paragraph 2.3 contains operationalizing problems into indicators. Finally, in paragraph 2.4 the framework for the operationalization is outlined.

2.1. Definitions of key concepts

2.1.1. Distance learning

The thesis will focus on the distance learning process in the universities. A definition of the concept of "distance learning" is reviewed below. The main idea of distance learning is a *"physical separation of teachers and students during the instruction and learning process"* (Armstrong-Mensah, 2020, p.2). Therefore, for the purposes of this thesis the following definition will be used: distance learning is "*any method of studying remotely without students physically attending classes including learning online or via correspondence, television, or radio* (Coutts et al., 2020, p.475).

Even if some researchers argue that in the current situation it is better to use concept of emergency remote teaching, emphasizing the pivot to online learning that was adopted in the emergency situation (Nordmann et al, 2020), the more common definition of distance learning, that is presented above, will be used in this thesis. This definition contains two main components: learning process and physical separation of teachers and students in it.

The concept of distance learning process in the universities is not a new one that has emerged during and as a result of the pandemic. It was first introduced in relation to providing students with additional opportunities to study long before the pandemic itself.

Students from different geographic locations, those with individual needs and work responsibilities, could benefit from studying remotely. In 2002 Ndahi and Ritz did a survey study of higher educational establishments from different countries (201 in total) and concluded that 60.4 % of them offered courses or degree program options via distance learning and 44% of them - opted for Web-based distance learning (Ndahi and Ritz, 2002).

On the other hand, in times of a pandemic, almost all educational institutions were forced to move online literally overnight making distance learning not optional but mandatory for all students who wanted to continue with their studies.

It is also important to distinguish between different types of distance learning. For instance, among others:

"*e-Learning - learning through electronic media or supported by electronic resources such as tapes, CDs, DVDs whether in class or remotely;*

m-Learning – a sub-set of e-learning using mobile phones or tablets without permanent network connection;

online learning – remote learning using the Web as an intermediary;

blended learning - combines traditional face-to-face teaching with e-learning" (Coutts et al., 2020, p.475).

As for the latter, some researchers maintain the future of higher education belongs to blended learning. Already in 2002, it was predicted that 80-90 % of higher education courses will become blended in the future, becoming the "new normal" in higher education (Porter et al, 2014).

A success of online education in universities depends on the internet penetration. Globally, less than 50 % of the population has access to the internet, which definitely limits online education and enforces other alternative delivery modes. (Coutts et al., 2020). In fact, internet penetration depends on the country. The World Bank statistical database provides data about internet penetration in every country of the world.

For instance, individuals using internet (% of the population) in the world 57 %, in the Netherlands 91 %, in Poland 87%. (World Bank, 2021). The most developed countries in terms of internet penetration are Bahrain (100%), Qatar (100%), Luxembourg (100%), the UAE (100%), Kuwait (99%), at the same time, the worst developed are Eritrea (1%), Somalia (2%), Uganda (4%) (World Bank, 2021).

Based on the World Bank data presented above, it is already possible to assume the interdependence between internet penetration in certain countries and acceptance of online learning. Accordingly, countries, that have better internet adoption, are more successful in the implementation of online learning.

M-Learning became widespread in the countries following the popularity of mobile phones and success of using mobile phones as an alternative delivery mode in education. In accordance with the World Bank data mobile cellular subscriptions (per 100 people in 2020) in the world is 107.52, in the Netherlands 125, Poland 130 (World Bank, 2021). With almost everyone in the world having a mobile phone, access to the m-learning is becoming an easier and more efficient way of distance learning.

Reviewing the key concept of distance learning is important in order to answer research question. As it was stated in paragraph 1.2, concept of organizational resilience and digital resilience are required for analyzing how universities adapted in times of pandemic. For this reason, these two key concepts will be presented below in detail.

Every university is socially embedded. It means that a university, like every organization, is made of people interacting between each other and sharing a common goal (Achterberg and Vriens, 2019). It implies that lecturers experience problems regarding a distance learning process in times of pandemic and it should not be qualified merely as a personal problem but a problem related to the functioning of a university as whole community. In this thesis it is expected to find the interconnection between problems of the lecturers, as it is stated in the research question, organizational and digital resilience of the university and solutions to these problems. It is also expected that solutions to the problems may not only be developed at the individual level of the lecturer but at the level of the management of the university. To begin with, the definitions of organizational and digital resilience are presented below.

In literature appears no single view on the origin of the term "resilience". Some studies state the term "resilience" stems from the Latin word "resilire" that means to jump back and the first application in academics was in ecology (Xiao and Cao, 2017). However, other studies disagree by stating that the term "resilience" first entered English language from the mechanics in 1858 when it was used to describe strength of steel. Steel was assessed as being sufficiently strong to resist force or to absorb deformation and then return to its shape. This definition has become the classic view on resilience (Blades, 2017).

Many definitions of resilience can be acquired from the academic literature.

A broad definition of resilience is: "*the ability of an entity, individuals, community, or system to return to normal condition or functioning after the occurrence of an event that disturbs its state*" (Wiig and Fahlbruch, 2019, p.1). The key point of this definition is that system has an ability to return to the normal functioning after disruption.

Additionally, organizational resilience can be defined as: "*a special organizational capability to prepare for, respond to, and learn from adverse events (including crisis as an unexpected but severe adverse event) so as to bounce back for survival in the short run and also bounce forward for thriving over time*" (Li, 2020, p.503). This view on resilience implies that organizational resilience is not only about recovering from the crisis but also springing forward into a new reality. It means that organizational resilience is not only about returning to the previous state but also progress.

On the other hand, Xiao and Cao clarify that "*organizational resilience is different from adaptability, agility, flexibility, improvisation, recovery, redundancy and robustness. It involves the reaction of an organization under destruction, which emphasizes the ability of recover and develops in the state of uncertainty, discontinuity and emergency*" (Xiao and

Cao, 2017, p.1). This view on resilience focuses on organizational resilience as a reaction to certain sudden emergent changes in contrast to incremental constant growth.

Duchek (2020) provided a meta-analysis of organizational resilience. By grouping and analyzing different definitions, Duchek clarified that organizational resilience can incorporate three different meanings:

a.resistance and recovery; organizational resilience as an ability to resist adverse situations.

b.adaptation; organizational resilience focuses not only on restoration but also on the advancement of organizational functionality.

c.anticipation; organizational resilience should also incorporate crisis prevention. It is aimed at prediction and prevention of potential dangers before damage is done.

This definition of Duchek provides holistic integrated approach and incorporates resilience as an ability to recover after the disruption but also as an ability to prevent potential threats, hence it will be adopted as the main one for the purposes of the thesis.

Different dimensions can be identified in organizational resilience: protecting and growing the top line, developing agile operations, enabling people, accelerating the adoption of data and digital platforms, enhancing cybersecurity, strengthening financials (Close et al, 2020). These dimensions should be considered in interrelated combination to ensure organizational resilience (Figure 1).

	Protect and grow the top line	Rapidly identify and address changes in customer needs with data-driven and digital marketing, sales, and pricing
	Develop agile operations	React quickly to and manage disruptions in supply chain, logistics, manufacturing, development, and corporate functions
	Enable people	Empower employees to work and collaborate effectively in any circumstances; adapt with new approaches to talent management and capability development
	Accelerate data and digital platforms	Increase the modularity and availability of core IT infrastructure and applications; democratize data to enable data-driven and AI-enabled decisions across silos
	Enhance cybersecurity	Safeguard digital assets, and react quickly to security breaches in an increasingly distributed environment by using secure technologies and procedures
	Strengthen financials	Ensure financial liquidity with an operating expenses-driven cost model, reduced total cost of ownership, and data-enabled policies to manage cash and working capital

Figure 1. Six dimensions of resilience. *Source: Close et al., 2020.*

One of organizational resilience dimensions described above is accelerating data and digital platforms which is related to digital resilience (Figure 1). The aim of the thesis is to get insight into how lecturers in universities (further) implemented online education in times of pandemic, what problems they encountered and what solutions they found to the problems With all education moving online, universities faced necessity to adapt their IT systems and computer software in order to facilitate learning process, in other words they had to be digitally resilient. At the same time, lecturers in universities should be capable of applying digital experience and technologies in practice. For this reason, the concept of digital resilience that refers to IT and digital adoption will be explained in the next paragraph.

2.1.3. Digital resilience.

The concept of digital resilience is derived from cybersecurity. It is defined as an organization's ability to maintain, change or recover technology-dependent operational capability (Garside, 2018). But in the times of a pandemic, digital resilience was redefined. It is now often referred to not only as an ability to respond to cyberthreats but also in relation to other organizational disruptions when an organization has to develop new ways to recover operational capability (Garside, 2018). The current pandemic is an example of such organizational disruption.

In the higher educational sector, being digitally resilient means that, for instance, universities adopt new systems and processes, ensuring continued competitiveness and survival (Bhagat, 2020). In times of a pandemic, digital resilience is attracting even more interest than before. According to the recent survey, 75 % of executives agreed that they regard digital transformation as becoming more urgent in the light of COVID-19 crisis and 65% has said that they increase their investments in digital transformation (Close et al., 2020).

When adopting Duchek's (2020) three different dimensions of organizational resilience, it is possible to conclude that digital resilience can incorporate three different parts:
a. digital resistance and recovery; digital resilience as an ability to resist adverse situations.
b. digital adaptation; digital resilience focuses not only on restoration but also on the advancement of digital functionality.
c. digital anticipation; digital resilience should also incorporate crisis prevention. It is aimed at prediction and prevention of potential dangers before damage is done.

In order to become digitally resilient, a university needs to evaluate existing technologies in terms of their capabilities to meet the demand of educators and learners and also to

evaluate new technologies in terms of their impact on the overall resilience (Bhagat, 2020).

For the purposes of the thesis the definition of digital resilience is the following: it is as an organization's ability to maintain, change or recover technology-dependent operational capability as a response to different organizational disruptions and consists of three parts -resistance, adaptation, anticipation. It is the combination of definitions presented by Garside and Duchek.

In the rest of this thesis, attention is focused on the digital resilience as a part of organizational resilience that is connected to IT and data processing in times of pandemic and in relation to facilitation of distance learning process.

2.1.4 Organizational problems

The research question in this thesis will concern lecturers only. It departs from identifying organizational problems that lecturers in the universities might experience when facilitating distance learning process in times of pandemic. Therefore, the problem definition will be analyzed at the individual level (and not at the organizational level).

An organizational problem is "*a questioning or challenging the current state of affairs in order to arrive at one or all of the following: well-defined goals, a better understanding of the current situation, or awareness of potential opportunities*" (Lyles and Mitroff, 1980, p.104). It involves first sensing the existence of a problem, then identifying contributing factors and then reaching a definition of the problem (Lyles and Mitroff, 1980). Other scientists also worked on problem definition. Accordingly, it can consist of the following: "*awareness*" of the problem as the starting point, "*triggering*" event that forces action, "*information gathering*" which means collecting information to reinforce different views on the problem, "*confrontation*" when different views are discussed and debated and "*resolution*" (Büyükdamgaci, 2003, p. 328*)*. From the point of view of lecturers, it becomes interesting to explore what stages of problem definition they went through, and whether a resolution of their problems was found.

At the individual level a lecturer perceives the raw data and processes it in order to recognize the "task environment", in other words -components of the problem, then he or she transforms it into the "problem space". Hence, problem recognition consists of "information intake and its processing" (Büyükdamgaci, 2003, p. 328).

In the next paragraph 2.2 it is explained what kind of problems lecturers in universities might encounter after switching to distance learning. Later on this categorization of problems will be operationalized by questions for interviews.

2.2 Theoretical framework

Scientific theory is defined as a speculation about the answer to a research question including a statement why the proposed answer is correct (Powner, 2015). In other words, a theory is an expectation or prediction in the form of an expected answer to the research question. The research question of this thesis deals with the organizational problems that lecturers at universities experienced after switching to distance education in response to the pandemic.

Resilience is a wide and broad concept; it also includes different domains and issues. Unfortunately, there is no single theory that can explain it in the complete scope. Due to many types of resilience and its many domains, the general theory of resilience doesn't exist (Wiig and Fahlbruch, 2019). Accordingly, the research question will be answered by using the following four different possible perspectives that are presented below, namely: A. Change perspective, B. Uncertainty, C. Complexity and D. Resilience time frame.

A. Change perspective

Organizational development distinguishes between a continuous change perspective and an episodic change perspective. In a continuous change perspective, it is assumed that an organization, more specific a university - is a flow, all the time in the motion and changing. Moreover, organizations are social systems that are responsive to the environment and they are not living in an isolated form. There is no frozen state, organizational change is a process of constant "trial and error" that organizations need to follow in order to survive (Achterbergh and Vriens, 2019). Social system in this sense is a "*system of interlocking interactions relevant for realizing the organization's societal contribution*" (Achterbergh and Vriens, 2019, p.2)

An episodic change perspective anticipates change as an occasional interruption, change of the state involving a dramatic intervention in the structure and normal working process of the organization. Interruption, in this case, is defined as "*a set of coherent activities that involve deliberation and intend to improve the functioning of something relative to some goal*" (Achterbergh and Vriens, 2019, p.103). It is assumed that episodic interventions are "*deliberate, intentional and comprehensive which means that they have the explicit goal*

to change the structure of a large part or even the whole organization – not just a local change" (Achterbergh and Vriens, 2019, p.6).

It is expected that usually organizations are developing and changing incrementally. But the pandemic forced organizations to a fast reaction. Many organizations in the world and universities as well faced the necessity to adapt rapidly, to change the "normal" working model and the way of working very fast, literally overnight in response to the pandemic threats. Therefore, the research question will be analyzed from the episodic change perspective, considering pandemic as an unexpected and unpredicted event that required immediate reaction, attention and consequently - organizational change. An episodic change can be seen as a first perspective of organizational resilience.

B. Uncertainty

The current pandemic increased the level of complexity and uncertainty in every organization and in the normal organizational routine of the university as well. It became harder for the lecturers of the university to do their everyday tasks, to coordinate, control, and respond to the quick changes in pandemic situation in relation to study process. Uncertainty – "*is the lack of understanding of the environment in terms of the nature of the factors and their variance*" (Burton et al., 2019, p.53). Uncertainty is also defined as the difference between the amount of information required to perform the task and the amount of information available in the organization (Kinder and Burgoyne, 2013).

In this uncertain setting, the role of managers and the decision-making process is important, at the same time role of lecturers in the universities is difficult to overestimate. Therefore, the second perspective is about uncertainty of organizational resilience. It is expected that lecturers have faced more uncertainty in all respects due to the start of pandemic and difficulties in continuing learning process in the university. It would be interesting to learn what was the most uncertain for them.

C. Complexity.

Complexity is measured "*as the number of factors in an organization's environment and their interdependency*" (Burton et al., 2019, p.53). Complexity also increases when number of factors involved or interdependency between them is increased. (Burton et al, 2019). It is expected that in times of pandemic the level of complexity in organizing the learning process in the university increased exponentially. As a consequence, success of adjusting to the new reality in the teaching and studying process is dependent from how

the lecturers answered to the complexity challenges and from the lecturers' full involvement in the study process. It is relevant to establish whether lecturers were facing more complexity and how they responded to it. This third perspective is representing complexity of organizational resilience.

D. Resilience time frame

An organization as a social system can also be analyzed in terms of the scale and nature of organizational activity with different duration and reach across the system (Wiig and Fahlbruch, 2019). Depending on time and organizational activities, three different types of organizational resilience can be detected:

1) Situated that emerges close to the operational frontline and involves combining existing sociotechnical resources to detect and recover from disruptive events. It can unfold over seconds to weeks.

2) Structural that emerges in the monitoring of operational activities. It involves the purposeful redesign and restructuring of sociotechnical resources to adapt to disruptive events. It can unfold over weeks to years.

3) Systematic that emerges in the oversight of system structure and interaction. It involves reconfiguring of how sociotechnical resources are designed, produced and circulated. It can unfold over months to decades (Wiig and Fahlbruch, 2019).

This forth perspective represents organizational resilience time frame. As for the lecturers, it can be expected that lecturers had different solutions in terms of time: they rely on quick solutions and at the same time build up long term strategy in distance learning.

In this thesis separate part will be devoted to digital resilience. As for digital resilience as a part of organizational resilience, it implies not only the ability to maintain, change and recover technology-dependent operational capability (Garside, 2018) but also bouncing forward to the new reality (Close et al, 2020). For higher educational sector, being digitally resilient means that universities are well-placed to adopt new systems and processes, ensuring continued competitiveness and survival especially when either internal or external factors force them to suffer from certain disruptions (Bhagat and Kim, 2020). Building a sense of digital resilience in the higher education sector may involve several stages (Figure 2).
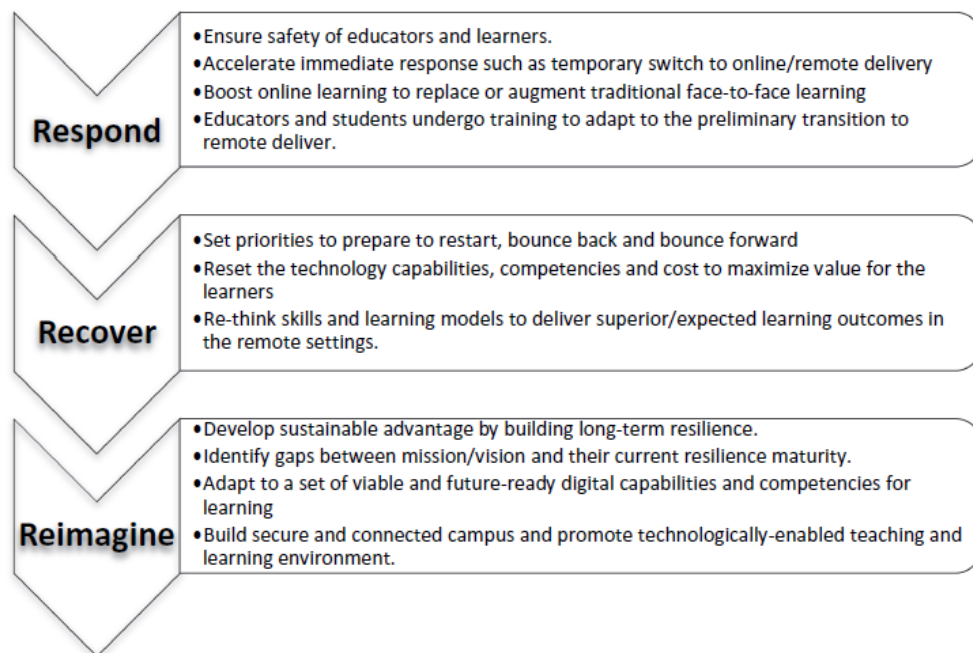
Figure 2. Three stages of digital resilience building framework in the higher education.
Source: Bhagat and Kim, 2020

These three stages of digital resilience are reflected in the initial template: digital response as an ability to resist quickly to adverse situations, digital recovery as an ability to reset technological capabilities and digital adaptation as an ability to build long term resilience, to predict and prevent potential dangers before damage is done (Appendix 3).

Given the lack of literature and the global nature of the theoretical perspective above, this study will focus on a basic categorization of the problems of lecturers at a university. When the qualitative data will allow identification of underlying causal patterns, it may lead to abductive reflection.

2.3 Operationalizing problems into indicators

Departing from the definitions and theoretical perspective of the previous sections now an operationalization into indicators can be elaborated. The aim of this thesis is to get insight what are the exact problems lecturers of the universities encountered in the learning process during pandemic and how they coped with these problems. Based on the literature review, organizational problems that lecturers could experience after the outbreak of pandemic are categorized and summarized below:

1) depending on the term of solving (short term, medium term, long term).

It is assumed that organizational problems can be categorized depending on the time required for their solving. Some problems are solved within a day but some can require more time because of their difficulty and complexity. In other words, some problems are more time- consuming than others.

2) depending on the subject or the course in the university (subjects that have more practical component vs subjects that have less practical component).

For example, in the fields like clinical medicine and veterinary studies which depend on access to laboratories, also in arts and music it is more difficult to organize distance learning along with students' and teacher interaction (Farnell et al, 2021). In the fields like economics, management and political science, this interaction has fewer practical exercises which makes it easier to organize studies online.

3) related to the organizational problems or related to digital problems.

The first group of problems may include problems of planning the lectures and seminars, the second group of problems includes, for example, weak internet connection, low internet speed and capacity, lack of computers and other equipment necessary for conducting teaching process, lack of necessary software and licenses etc.

Many universities in Europe reported that initially there were problems with tools and the capacity of the technologies used, some of which had short outages in early stages because of the high levels of global demand (Coimbra Group, 2020).

4) linked with the study process or with the assessment process.

Apart from a study process, there is also an assessment process. Exams that were previously mostly in the face-to-face environment, needed to be switched online with either invigilation or without it. It was also a big problem considering that instead of paper-based exams online exams should be developed, checked, inspected for quality, and implemented in practice and all these stages should be done in a short term.

5) depending on the urgency (more urgent, less urgent).

After the outbreak of the pandemic, some problems required immediate attention (organizing distance learning process) or switching to distance learning in the long run (after pandemic time). There is a distinction to be made between the immediate reaction to

the pandemic disruption, described as emergency remote teaching, and plans to continue teaching online in the future (Nordmann et al, 2020).

6) depending on the level of digital and online learning experience before the pandemic.

It can be assumed that universities that already had online learning implemented in their programmes were not affected significantly because of having the necessary infrastructure, trained teaching staff and suitable teaching and study materials in place (Farnell et al, 2021). At the same time, online learning was seldom implemented fully. It is reported that before pandemic only 15 % of students were enrolled in full-fledged online programs (Bhagat and Kim, 2020).

7) related to the quality of online education.

It is obvious that the level of education and learning process components should remain the same no matter if it is online or in class education. Nevertheless, programs of study with large practical components that were mentioned above may never have voluntarily chosen to teach online because it is rather difficult to replace practical components by teaching online. Those programs that adhere to professional standards, such as medical or engineering degrees, may have problems with meeting accreditation standards (Nordmann et al, 2020).

8) related to the lack of required financing.

It is obvious that no one was prepared to pandemic and full closure of universities. That's why pandemic expenses (new computers, licenses etc) were not included in the budgets of many universities. Extra financing is needed in order to organize smooth transition from offline to online study process as quickly as possible. On the other hand, lack of prompt financing could cause delays and disruptions in this transition.

9) related to lecturer's experience in online distance learning.

It is reported that most teaching staff lacked training in online teaching, had not sufficient time for the preparation of online course, and increased workload (Farnell et al, 2021). It is revealed that only half of universities have lecturers with prior online teaching experience (Bhagat and Kim, 2020). It means that after outbreak of pandemic some lecturers had zero experience in how to organize distance learning process.

10) related to students' academic performance and well-being.

The finding of the survey showed that 47 % of students believed that their academic performance changed for the worse since on-site classes were canceled (Farnell et al, 2021). Therefore, the task of the lecturers is not only to organize online studies and assessment but also to make sure that students will attend these classes and their involvement and academic performance will be at the same level as before the pandemic.

Many lecturers reported that after switching to online meetings the biggest challenge is in maintaining the same level of students' engagement and attention as in a regular face-to-face meeting (Bhagat and Kim, 2020).

As it is advised by Vennix (2019), in order to ensure the credibility of a measuring instrument, it is recommended first to make the use of knowledge regarding the concept based on exhaustive literature review and second to ask to review the credibility of the measuring instrument developed. In the former case, other specialists in the field can access credibility (face validity). Therefore, the list of potential problems that are described above was checked by the specialist in the field Arjen de Bont (Senior Lecturer in Fontys University of Applied Sciences) and his advisory opinion is provided here translated from Dutch: "I have looked at the proposal with interest. An interesting setup. It is of course close to my experience, and that makes it a very relevant subject for me as well. Of course, I don't have the assignment description for the Master, but I can already say something about what I read. What I see is a good question, and then a first synthesis of aspects from the literature." He also suggested to do quantitative research based on the problematic part but I opted for the qualitative one.

2.4. Framework for operationalization

Organizational resilience has been studied in different sectors: health care, banking, hospitality, engineering, food and service. But not many studies focus on the organizational resilience in the higher educational establishments. For instance, Frisbie and Converso studied organizational resilience in the for-profit sector of higher education in the US (Frisbie and Converso, 2016). Some researchers concentrate on teacher's resilience (Beltman et al, 2011) and some on student's resilience (Margo et al, 2019).
To the best of my knowledge, no studies have addressed the problem of organizational resilience in higher educational establishments from the point of view of lecturers and in the context of the pandemic. Therefore, in this thesis the focus is made on the organizational problems, developed solutions to the problems and organizational and digital resilience that helped universities to deal with these problems. In the light of pandemic threats, interest to

organizational and digital resilience in the universities became even stronger. Because only highly resilient systems are able to adapt and survive (Matzenberger, 2013).

By developing initial template (Appendix 3) and defining in theory expected organizational problems that lecturers experience in paragraph 2.3, theoretical background for the research is provided. The categorized organizational problems are not complete. Therefore, some changes are made to the initial template later on (paragraph 4.1).

Due to the fact that solutions to the organizational problems were not categorized, abduction in the analysis and conclusion part is expected.

Abduction means "*creating a hypothesis which can explain an empirical phenomenon*" (Vennix, 2019, p.32). It is a "*type of inference that operates bottom up: individual facts are collected and connected together in order to develop hypotheses*" (Richardson and Kramer, 2006, p.500).

Chapter 3. Methodology

This chapter elaborates on the methodology applied in the thesis. The philosophical assumptions of this research are discussed in paragraph 3.1. In paragraph 3.2 the research design is described and in paragraph 3.3 -the quality criteria of the research. Paragraph 3.4 focuses on the research ethics.

3.1 Philosophical assumptions

Before conducting any research, it is necessary to start from the underlying philosophical assumptions, consequently it has important implications on data collection and analysis process (King and Brooks, 2017). Therefore, philosophical stance in connection to this thesis and to the research question will be presented below.

To begin with, the concept of epistemology and ontology is specified, as it has important impact on the choices that are made in this thesis. Epistemology is the philosophical theory of knowledge and "*refers to the assumptions we make about what it is possible for us to know and how we can obtain this knowledge. Ontology refers to philosophical assumptions about the nature of being, which determine what we can know to be real and what we can know to exist*" (King and Brooks, 2017, p.2).

Analysis of the phenomena in the thesis is conducted from a realistic point of view. The main point in realism is that there is an objective world "out there" that is independent of the researcher who sets out to study its certain aspects.

In realism, one does not assume that there is only one truth which can be proven by law and experiment. Rather, truth is subjective. It is dependent on the context and the observer or on the subjective view of the observer or researcher (Symon and Cassell, 2012). Moreover, a realistic point of view usually adopts "*hypothetico-deductive fashion*" (Symon and Cassell, 2012, p.18).

The realistic philosophical approach is applicable here because of the qualitative character of the research. It is dependent on the information that is obtained during the interviews with the university lecturers. Thereby analysis in the thesis, should be based on the formulation and expressions used by the interviewees. Additionally, from a realistic perspective, the researcher has a dual focus: "*the actors involved and their attitudes and descriptions of the social world, and the underlying mechanisms and structures of which they are not necessarily conscious but that appear to regulate their actions.*" (Justesen and Mik-Meyer, 2012, p.19).

Therefore, the task is not only to conduct and transcript interviews but also to interpret the information received with the aim to answer the research question and to reveal underlying mechanisms of the interpreted phenomena. Moreover, the interpretation and conclusions are dependent on the information obtained during interviews and also on the researcher's personality and background.

A realist position in both epistemological and ontological terms is usually taken by neo-positivist approach (King and Brooks, 2017).

For the purposes of this thesis template analysis will be used. It is often recommended for qualitative studies and business research. There are certain implications for use of Template analysis from the neo positivist philosophical position that are summarized below in Figure 3.

Philosophical position	Ontology	Epistemology	Implications for use of Template Analysis
Neo-positivism	*Realist*	*Realist*	*Minimal impact of research subjectivity;* *Use of independent coders might be justifiable and useful, though not compulsory;* *Consistent use of the steps in the analysis process;* *Minimum adaptation and flexibility;* *Strong theory linked a priori themes;*

 Figure 3. Philosophical position used in this thesis and its implications for use of Template Analysis. *Adapted from: King and Brooks, 2017.*

All these recommendations for conducting Template Analysis are taken into consideration in the next chapters. Template Analysis process that consists of seven steps and also pre-defined from the theory a priori themes and initial template (Appendix 3) are presented in the next paragraph 3.2. As for independent coders, this advice is recommended but not compulsory, thus will not be used in this thesis.

3.2 Research design.

For the purposes of this thesis, deductive approach and qualitative research are preferred. In a qualitative study, the researcher is constantly reflecting on theory comparing it with the data collected in order to get a better picture of the phenomena being studied (Vennix, 2019). The deductive approach "works from the universal or general towards the individual or specific." (Vennix, 2019, p.25). In other words, the starting point in the deductive approach is evident facts, definitions that can be accepted as true (Vennix, 2019).

The starting point for a deductive approach is a theory (paragraph 2.2). In such way of reasoning, it is necessary to move from top to down (Myers, 2013). After theory is operationalized, it is then tested by collecting empirical data. On the contrary, inductive way of reasoning departs from collecting data and then building theory.

Meanwhile some researches argue that "*template analysis can be positioned in the middle ground between top down and bottom-up styles of analysis*" (Symon and Cassel, 2012, p.430) or "*template analysis doesn't have fixed position in induction-deduction balance*" (King and Brooks, 2017, p.6). Nevertheless, in deductive approach a priori themes are pre-defined in advance or research is strongly "*theory led*". (Symon and Cassel, 2012; King and Brooks, 2017). Deciding on a priori themes in this research, as it is recommended by most of the qualitative researchers, was not obligatory but highly recommended. Moreover, a priori themes should be "*quite well developed and precisely defined*" from the theory especially for those studies where neo-positivist approach is preferred (King and Brooks, 2017, p.5). Therefore, following the recommendations and neo-positivist philosophical assumptions (Figure 4) four top level themes were developed (Figure 5). They formed the guiding line in this thesis. Additionally, the initial template was outlined based on theory (Appendix 3). Most of the researchers recommend to develop initial template after the process of interview coding is done (Symon and Cassel, 2012; King and Brooks, 2017; paragraph 3.3). For the purposes of this thesis, initial template was developed before the coding process started, it was derived from the theory. Firstly, it helped to narrow the research especially in the part of categorization of the organizational problems and secondly, to structure the interviews afterwards.

The specific qualitative research design applied in this thesis is a case study.
A case study is qualitative research that "*investigates a contemporary phenomenon within its real-life context, especially when the boundaries between phenomenon and context are not clearly evident*". (Yin, 2003, p.13).

Based on the structure proposed by Myers (Myers, 2013, p.24), the model of qualitative research design is planned as follows (Figure 4):

Written record	Thesis
Data analysis approach	Template analysis
Data collection technique	Semi-structured interviews, analyzing documents
Research method	Case study
Philosophical assumptions	Realism, neo-positivism

Figure 4. Qualitative research design model. *Source: Myers, 2013*

Unit of analysis is "*what we aim to make statement about once we have conducted the research: employees, teams, companies*" (Vennix. 2019, p.122). At the same time unit of analysis is not the same as the unit of observation. The former refers to the level at which data will be analyzed and the latter - at which it is collected (Guest, Namey and Mitchell, 2013).

In this thesis unit of observation is lecturers at two different universities: in the Netherlands (Radboud) and in Poland (the University of Warsaw). Subsequently, unit of analysis – these two universities that were affected by pandemic and switched to distance learning. Both universities are introduced in paragraph 1.3 "Set up of the study".

For the purposes of this thesis, 8 interviews with the lecturers of two different universities were conducted, in both universities only lecturers from the School of Management were invited for an interview. It was arranged in order to keep the group of interviewees homogenous.

The interviews were semi-structured which means that the number of key issues and a priori themes for discussion were defined in advance. However, there was room to deviate from the pre-selected questions if the interviewee wanted to elaborate on some topic. (Justesen and Mik-Meyer, 2012). The semi-structured interview is suitable for studies in which it is desirable both to adopt an exploratory approach that generates new knowledge and to stimulate interviewees' reflections on a number of pre-selected themes (Justesen and Mik-Meyer, 2012). Using semi-structured interviews gives the possibility to deviate from the interview questions that are planned in advance and to give the interviewees freedom to

develop certain questions they might feel as important ones. As a result, every interview remained unique and different from the others even if the pre-designed questions remained the same.

As mentioned by Myers, in a semi-structured interview improvisation is encouraged but the interviewer usually starts with a similar pre-selected set of questions (Myers, 2013). The interviewees were different in terms of gender, age, position, subject and background, giving the possibility to get the most complete picture of the studied phenomena. With a semi-structured model of interviewing, it was also possible to adjust to individual interviewees, to their way of speaking, speed of speaking etc.

An interview protocol is not just a list of interview questions, but also a procedural guide for directing through the interview process (Jacob and Furgerson, 2012). Based on recommendations, provided by Jacob and Furgerson (2012) interview protocol was developed (Appendix 4). Every interview started from the introduction, the purpose of the thesis and an interview, obtaining formal consent for the recording and ended with a question if the interviewee needs the transcript or full thesis afterwards. Every interview was also slightly adapted, additional questions were asked during the interview.

It was impossible to conduct face-to-face interview due to the distance and the current pandemic restrictions. Therefore, the Zoom meeting software was utilized. The Zoom application is usually adopted by all lecturers and university employees during their daily working life, so they are familiar with its functions and capabilities. With the permission of every participant received in advance, the interviews were recorded using inbuilt Zoom functionality and transcribed later on. Due to the size of the file with the interviews, which comprises in total 90 pages of transcribed interviews, it is provided additionally to the thesis in one separate document "All interviews".

All interviews were planned and conducted in October -November 2021 in English. Every interview was approximately one hour long.

Additionally, and as a second source, information from the universities' websites was analyzed.

3.3. Data analysis

After conducting interviews and analysis of the information from the websites, a template analysis was performed. The guiding role in the template analysis was the research question, a priori themes and initial template. Chapter 4 is fully devoted to the analysis and findings.

King and Brooks (2017) distinguish several steps of template analysis:

1) familiarization with the data. Process of reading through the interviews in order to get familiarized with the content;
2) preliminary coding. Process of coding everything related to the research question and a priori themes;
3) clustering. Process of grouping on the basis of preliminary analysis;
4) producing an initial template. The clusters of the themes form the basis for producing an initial version of the coding template;
5) developing the template. Changing and modification of the initial template if needed;
6) applying the final template. The final template helps to interpret the data;
7) writing up. Process of finalizing and presenting the analysis (King and Brooks, 2017).

Analysis and development of the final template is described in Chapter 4 Analysis and findings of the thesis.

At the initial stage before conducting template analysis, it is recommended to define a priori codes. In line with the neo-positivist approach defined in the paragraph 3.1, it is recommended to specify in advance those themes that are important in relation to the research question. (King and Brooks, 2017).

Following the recommendation, a priori themes of the thesis are presented below (Figure 5).

A priori theme	Description
Distance learning	*It is any method of studying remotely without students physically attending classes including learning online or via correspondence, television, or radio.* **Key words**: online learning, m-learning, blended learning, e-learning.
Organisational resilience	*It is usually response to the disruption that results into certain action in order to return to the present state or gain extra development.* **Key words:** adaptation, resistance, anticipation, flexibility, response to destruction or uncertainty, emergency behavior.
Digital resilience	*It is as an organization's ability to maintain, change or recover technology-dependent operational capability as a response to different organizational disruptions and consists of three parts -resistance, adaptation, anticipation.* **Key words:** digital transformation, technical changes, digital adaptation, digital resistance, digital anticipation, IT and data processing.

Organizational problems	*Problems that affect the entire organization and require immediate attention.* **Key words:** disruption of the normal process, new requirement, attention, changes in the organizational process.

Figure 5. A priori themes for the template analysis.

Based on a priori themes developed and taking into account research question, initial template was developed (Appendix 3).
Qualitative template analysis involves more than reading the interviews.

It consists of two inter-related parts: defining the themes that characterize significant features of the data and organizing them in a structure that represents conceptual relationships between the themes. Initial template helps to direct the researcher through the analysis process. Ten problems were categorized in paragraph 2.2 but the interviews revealed other problems that lecturers at both universities experienced when facilitating distance learning process. An initial template is just preliminary guide that was amended in the process of analysis (Chapter 4).

For preliminary coding NVivo application software was used. Initially NVivo was not planned in the research proposal but then it was used because of its undeniable benefits. NVivo software was preferred due to the following advantages: it was helpful with coding and storing data in an electronic database, NVivo allows to merge codes if needed, to build hierarchical coding, it also has visual modelling features.
The process of coding was done in software NVivo with each code assigned to a certain paragraph or sentence manually. In some cases, parallel coding was done: different codes were assigned to the same segment of the interview, which is allowed in template analysis (Symon and Cassel, 2012). In order to have a clear view of all codes from all respondents excel file was used -coding matrix (attached in a separate file).

3.4. Quality criteria of the research

Some researchers advocate qualitative research should not be judged using quantitative criteria (Symon and Cassel, 2012). Therefore, instead of terms that are derived from the quantitative research such as "internal validity, generalizability, reliability, and objectivity", for the qualitative research, they propose to use "credibility, transferability, dependability and confirmability" respectively (Symon and Cassel, 2012, p.207). They are described below in detail.

Credibility is about finding "a good fit between constructed realities of respondents and the reconstructions attributed to them" (Symon and Cassel, 2012, p.207). In order to reach this research credibility, regular thesis circles were organized (peer debriefing). By discussing ongoing research practice, asking questions, and challenging assumptions, other thesis circle members increased the credibility of the research. What also helped in increasing credibility is keeping records and making notes.

Transferability: rather than trying to demonstrate that results generalize to all other contexts, the researcher provides enough detail about specific research case giving reader opportunity to apply it to the other (similar) contexts (Symon and Cassel, 2012). One more reason that criteria of generalizability can't be applied here in the qualitative research is that the selected group of interviewees is not representative in a statistical sense because it is not randomly selected (Justeen and Mik-Meyer, 2012). That's why, in order to ensure consistency, the study results should be compared with the theory or other case studies in the same field (Justeen and Mik-Meyer, 2012).

Dependability. This quality principle is in giving the reader all the details of the research process (Symon and Cassel, 2012). It can be achieved by guiding the reader along the research process.

Confirmability. The process of transforming data into presented results should be clear for the reader. (Symon and Cassel, 2012).

3.5. Research ethics

In the process of conducting research, it is crucial to keep research ethics in mind. Ethical research behavior helps to protect individuals and communities, it also offers the potential to increase the sum of good in the world. The purpose of social scientists is to make the world a better place by not doing harm to those individuals and communities (Israel and Hay, 2006). Research ethics consists of norms, values, and practices concerning the collection, analysis, and presenting the scientific findings (Bas, 2020). As a researcher, I followed these five ethics principles: honesty, scrupulousness, transparency, independence and responsibility (Netherlands Code of Conduct for Research Integrity, 2018)

Based on these five research ethics principles, some important issues are taken into account in this thesis. They are the following:

Sensitivity in handling participant data. Recorded interviews and transcripts were used solely for the purposes stated above and also in the scope of this thesis. Procedurally participants-

lecturers were informed about the purpose of the research, level of their expected involvement, duration of the planned interviews and that they all referred to in Chapter 4 of the thesis as Respondent Number without name and position mentioned (Symon and Cassel, 2012).

Voluntary participation. All participants lecturers were informed in advance about topic of the thesis and questions for discussion. All participants agreed to take part in the research on a voluntary basis.

Ensuring research integrity. All participants lecturers were also informed about the outcomes of the research. The focus of the researcher was on being honest with them, ensuring their interests, rights and protecting confidentiality (Bas, 2020). And by caring about research ethics the integrity of the research was promoted.

Representation of data and findings. Findings in Chapter 4 were presented to the best of my knowledge and using information (quotes from the interviews). One of the main principles for the researcher is to avoid falsifying results. It is important to be consistent with the work and to use no "fabrication", presenting fake data and plagiarism. Any malpractice such as "trimming" (leaving out certain findings), slightly changing data, misrepresenting results, and not reporting certain findings (Israel and Hay, 2006) can lead to falsification of results and distort the outcomes and therefore was not applied in this thesis.

Chapter 4. Analysis and findings

This chapter deals with the analysis process and findings for the research question: *How did lecturers at universities respond to organizational problems they experienced when facilitating learning process in times of pandemic?* In chapter 2 theoretical framework was developed and operationalized into coding. In this chapter the coding is applied to interviews. Paragraph 4.1 relates to the coding process, changes in the initial template and development of the final template; paragraph 4.2 outlines the problems that lecturers in the universities experienced and paragraph 4.3 – solutions to those problems. Future perspective of online education is outlined in paragraph 4.4 and paragraph 5.5 is devoted to discussion, interconnection of theory and practical results.

4.1 Interviews and development of the final template

All interviews were conducted in October and November 2021. Respondents 1-4 represent the University of Warsaw (Case 1), respondents 5-8 represent Radboud University (Case 2). In order to answer research question (paragraph 1.2) template analysis and deductive way of reasoning were preferred (paragraph 3.2). After all the interviews with respondents were conducted, they were transcribed and uploaded in the software NVivo. All interviews can be found in a separate 90-page Word document "All interviews".
After initial template (Appendix 3) was developed and after the coding of the interviews was made, the flaws of the initial template were detected. It resulted in changes made to the initial template and development of the final template (Appendix 5). Changes to the final template are elaborated below.

4.1.1 Main theme "Distance learning"

Within the main theme "Distance learning" the codes "asynchronous" and "synchronous" types of distance learning were added both in 1.1. Different types of distance learning before pandemic and 1.2. Different types of distance learning after pandemic. These types of distance learning were mentioned by the respondents and therefore were reflected in the final template. The generally accepted use of the term "synchronous" in the context of distance learning refers to *"teachers and students are online at the same time, allowing for discussions and presentations"* (Coutts et al, 2020, p. 475). On the contrary, the term "asynchronous" in the context of distance learning means that students can work

"*independent of time constraints and assess their own learning through instructor feedback and peer responses*" (Vonderwell, Liang, and Alderman, 2007, p.322).

It implies that in asynchronous type of learning students have autonomy in deciding the pace of their own learning process. When in synchronous learning it is expected that student and lecturer or instructor are involved in the learning process at the same time, synchronous learning requires the presence of student only, who is completing student's assignment or learning at a time and place to suit student's own schedule (Coutts et al, 2020).

4.1.2 Main theme "Organizational resilience"

In the process of coding, it was revealed that codes "Unpredictability of the environment" and "Confusion about the future" within second order theme 2.2. Uncertainty can be merged together. It will eliminate parallel coding. In some cases, parallel coding was used because both "unpredictability of the environment" and "confusion about the future" are close in the meaning especially when the respondent expressed disorientation about what to expect and embarrassment about the future. The new underlying code after merging will be "Unpredictability of the environment and future perspectives".

In order to avoid parallel coding that describes the same paragraph, codes "Many interrelated factors" and "Diversity of external factors" within second order theme 2.3. Complexity can be merged together under the new code "Diversity of interrelated factors" that can be both external and internal.

4.1.3 Main theme "Digital resilience"

Second level theme "Digital recovery" contained two codes "Technological changes" and "Re think of learning models". During the interviews respondents were talking about changes in the learning models and adaptation to the new realia of distance learning without technological details. For this reason, code "Technological changes" was excluded from the final template. The same about "development of sustainable advantage". This code was not applied in the coding process and has little influence for the answering of the research question and consequently was eliminated from the final template.

4.1.4 Main theme "Organizational problems"

Most of the changes to the initial template were reflected within the main theme "Organizational problems" which is the most relevant for answering of the research question.

In the initial template categorization of expected organizational problems that lecturers experienced was made based on the theoretical assumptions (paragraph 2.3). In the process of interviews and crystallization of the final template, some problems appeared not relevant due to different reasons, while new ones emerged. First, "Problems depending on the term of solving (short term, medium term, long term)" and "Problems depending on the urgency" were excluded from the categorization of the problems. Most of the problems in the learning process, from the point of view of the lecturers, were urgent and required immediate attention. Therefore, almost all problems were solved within short period of time or at least temporary solution was found. As a result, categorization of the problems based on the term of solving was omitted in the final template.

Second, it is indeed true that problems can differentiate depending on what subject the lectures are teaching. For example, problems in STEM (Science, Technology, Engineering and Mathematics) faculty can be very complex because science and engineering require hands-on laboratories in order to solve real world open-ended problems (Sahin and Shelley, 2020). For them adaptation of the learning process can be more difficult than at the faculty of management which is more theoretical and doesn't require laboratories. In order to avoid such problems and to make both cases in this thesis comparable, it was decided to narrow the research and concentrate only on the faculty of management and to interview lecturers working in the same field (School of Management). Consequently, "Problems depending on the subject in the university" were not relevant anymore and were excluded from the final template. "Problems depending on the level of digital and online experience before the pandemic" are related more to the level of university itself and university management. It was the reason to exclude it from the final template. On the contrary, "Problems related to lecturers' experience in online distance learning" are more affiliated with the lecturers who were interviewed and these types of problems were included into the categorization of the problems and final template. In the process of the interviews some other problems were triggered and discussed but they were not explained or categorized
 in the theory part (paragraph 2.3). These types of problems namely "Problems related to balancing work and family" as well as "Problems related to the mental well-being of the lecturers" were incorporated into the final template. After finalizing list of problems under second level theme "Categorization of the problems", the second level theme "Solutions of the problems", that is the most relevant for the answering of the research question, was adapted accordingly.

There is no general rule when to consider final template as "final" that doesn't require any other modifications, it should be decided individually taking into account specific research. But it can be treated as "final" when all the sections of the interview relevant for the

answering of the research question are coded (Symon and Cassel, 2012). The concluding result or the final template is presented in Appendix 5.

After the final template was developed and presented, second step is to return back to the research question and present the main findings relevant for its answering.

4.2. Analysis of the problems in two universities

Research question consists of three parts: what kind of organizational problems lecturers experienced? What solutions were developed to overcome the problems? What are the future perspectives of distance learning? (Paragraph 1.2).

In order to answer the research question, it is reasonable to begin from the analysis of problems in both universities which is presented below.

Following the order, presented in the final template (Appendix 5) the problems that lecturers experienced are described below. When describing them one by one, I relied on quotes provided by the respondents during the interviews trying to avoid interpretation or evaluative judgement.

4.2.1 Organizational problems

Organizational problems (Warsaw)

It was difficult for lecturers to adjust to new online classes. Respondent 1: "*Difficult was the fact that you had to adapt the classes. Things that worked face to face did not necessarily work online, especially in terms of student participation*.". Especially difficult it is for the classes like marketing where high level of communication and engagement of students is expected. Online it did not work that well.

Some students are not active at the lectures, some turn off cameras, some are not listening carefully the explanations. Respondent 1: "*And when I would put them into breakout rooms, they don't know what to do.*" Simply because they were not focused enough when it was needed.

Not every lecturer could conduct lectures from home due to limited space at home, family issues, not stable internet connection. Some of them eventually tried to organize working space at home. Respondent 4: "*I prepared a kind of working desk using my ironing desk***".** Others needed to go to the University to livestream online lecture from there and organize their working space using university facilities. Respondent 2: "*I had to kind of organize everything by myself like the good lighting, the microphone*". Not much support from the University was provided either. Respondent 2: "*Everything left for us to deal individually*".

University didn't have clear vision of what lecturers supposed to do and how to conduct classes. Respondent 3: "*We are obliged to have these online classes but no details were given, the university was like chasing the fog*". Respondent 3: "*No clear strategy, no directions how to do the classes, no help.*" Eventually, it led to the chaos in what lecturers were doing, in conducting lectures and communicating to the students. Respondent 3: "*The worst option was that some lecturers were just sending presentations to students by email and that's it*".

Organizational problems (Radboud)

In general, Radboud was better prepared than Warsaw in terms of online classes. For many teachers it was easy to switch to online. Respondent 5: "*It was quite easy to change to online format*". There were enough students' assistants and technical support provided. The difficulty was to instruct students' assistants how to do online. Respondent 5: "*It was a lot of bureaucratic hassle how to get them an account, much more than from the learning strategy itself*". Some lecturers were not satisfied with how the decisions were taken at the management level. Respondent 5: *"Another problem was that decision making was always too late and very inconsistent".* Some lecturers didn't understand why such a decision was taken, why, for example, the management forced lecturers to come for a meeting in the university when it was absolutely not necessary and could endanger lecturers' health. Respondent 5: "*I faced the problems with the system happen to be regulated".* Decisions were taken at the central level by management team but it was not always understood by lecturers. Respondent 6: "*Some of the policies that came from central level, I do understand why they make those decisions in terms of the central level, but then implementing that at the teachers course levels was sometimes not very realistic*". Respondent 8 was facing such a situation when she was supposed to force other lecturers to come to campus and do teaching there and she was not feeling comfortable with this decision. Respondent 8: "*And that put me in a very difficult position because I don't want to force people to do things they don't want to do*".

For some lecturers that had many students involved in the course, it was really problematic to organize a lecture in online format and to make sure that students have some interaction during the lecture. Respondent 7: "*What I really wanted is to have interaction…*", "*But it was difficult to get it working*". Especially taking into account that Respondent 7 needed to

organize it for 650 students in total.

Warsaw - Radboud

In terms of organizational problems, the lecturers in both universities faced problems with adapting classes to online setting. However, in Radboud some lecturers were struggling with bureaucracy and inconsistency of decision-making process at the management level. At the same time, for some lecturers in Warsaw it was difficult to organize working space at home.

4.2.2 Digital problems

Digital problems (Warsaw)

The first problem that every respondent mentioned is Internet connection that was not always stable. Respondent 1: "*I had Internet connection problems that completely external and yet my course was interrupted*". Respondent 2: "*Internet connection was not always perfect*". Respondent 3: "*I remember Monday mornings we used to have Internet problems in the whole Warsaw*". Respondent 4: "*The main problem in my case was Internet*".
Apart from that it was also mentioned that some lecturers didn't know how to do online lectures. Respondent 2: "*I know many people…they didn't know how to deal with e-learning at all*". Respondent 3 also mentioned that at first, they got limited version of Zoom and it was difficult to obtain full version. Respondent 3: "*I know that still some people didn't get this better version of Zoom*".

Digital problems (Radboud)

In general situation with the equipment and installing necessary software was better in Radboud then in Warsaw. Every lecturer could get a laptop from the university for working from home. Respondent 4: "*So we have a laptop and we've got the software installed. That was done quickly. Absolutely. We can't complain, absolutely not.*" Respondent 8: "*What I really liked, that in the department they made an overview of all the different programs that were available*"
Problems with Internet were mentioned as well. Respondent 5: "*I'm sure some people had problems with Internet connection*". Respondent 8: "*At the beginning my Internet connection*

was bad upstairs". Respondent 7 also acknowledged problem with Internet: "*There was the very first lecture that I streamed from home but my Internet connection was not well enough"*.

It was also discussion within the university what platform is better and what license to buy. Zoom had limited capacity, it had limits in terms of participants using it simultaneously. As a consequence, it wasn't suitable for big courses in business administration. Then university tried Webex that could incorporate more students. Respondent 6: "*But then at some point it was also stupid to have Webex and Zoom"*.

Responded 7 was struggling with organizing lectures for more than 600 students who were following the course. The problem was in limited capacity of available software. Respondent 7: "*That was the biggest challenge for me because IT department also did not have a clue how to work with this*".

Warsaw - Radboud

Choosing the best software for work and unstable internet connection were mentioned as the main digital problems in both universities. Lecturers in Radboud mentioned difficulty of streaming lectures for the large group of students (above 600) while some lecturers in Warsaw struggled with trying out new software.

4.2.3 Problems related to study process

Problems related to study process (Warsaw).

The main problem was how to compensate students for the lack of interaction they normally have in class, how to make online class the same as offline, how to engage students in conversation especially when their cameras are turned off. Respondent 1: "*Lack of interaction was the most demanding thing, trying to make these things interactive and at the same time knowing that people are losing focus*". Respondent 4: "*I realized that it was quite boring for students just to listen"*.

For many lecturers it was difficult to talk when cameras are off and Respondent 3: "*It's very unpleasant experience…it's like talking to yourself in some kind of mental institution*". Respondent 1 stopped with making jokes after getting no reaction from students: "*It became less fun to teach for me"*.

Lecturers employed students by giving them different exercises and tasks for completing at home and it turned out that giving feedback and writing comment to every student not verbally but in writing was very time-consuming and tiring for lecturers. Respondent 1:

"*When I was teaching a course that was 15 hours long, I eventually spend over 60 hours giving feedback. I found it very time consuming*".

Respondent 2 gave students her Skype number with the possibility to ask questions when they want. It turned out that students were all the time messaging even at weekend. Respondent 2: "*I constantly had to work basically… I felt like that I'm a little bit overburden.*" Respondent 2 also had problems with teaching "*soft skills such as motivation, team forming, leadership"* where lots of interaction between students and groups of students is expected. Respondent 2: "*I still don't know how to teach that online*".

At the start of the pandemic many lecturers didn't have clear vision and understanding how to continue with the learning process. Some used Zoom, some Google meets, Moodle platform etc. Respondent 3: "*Each subject was on different platform with different ways of teaching online*". In this situation Respondent 3 decided to prepare presentations with the voice recorded behind each slide and trying out to interact with students using quizzes, discussion forums etc. But it turned out very time-consuming. Respondent 3: "*A good asynchronous course is more time consuming then just go to Zoom and show a presentation*".

Problems related to study process (Radboud)

Respondent 6 faced the problem when tutorials using breakout rooms didn't work that well. With only two teachers available during the tutorial, limited tutorial time and 45 breakout groups working simultaneously, it was impossible to help everyone and answer all the questions. Respondent 6: "*Students stayed two hours asking for help and waited and they wouldn't get in and then they were frustrated and left… It's simply too many students and few people*". Respondent 7 shared experience about conducting two different courses, one is more theoretical but for big group of students and the other is for small group of people but more quantitative. In both groups it was necessary to encourage some interaction and some communication. In offline setting it is easy to get the feedback, based on how students are reacting. Online, with cameras off and especially in difficult subjects (quantitative research methods, statistics), it is impossible to understand how students feel about the subject, if they understand the lecture well enough. Respondent 7: "*It is really difficult to see if people are getting it or not*". Respondent 8: "*A lot of communication during the course is nonverbal and you lose so much of that online*".

Warsaw - Radboud

The main challenge for lecturers in both universities in terms of study process was how to ensure the same level of communication and interaction that was before the pandemic. Some

lecturers in Warsaw mentioned increase of workload due to full switch to online lectures. Some lecturers in Radboud mentioned difficulty of managing help function for many breakout rooms in Zoom.

4.2.4 Problems related to assessment process

Problems related to assessment process (Warsaw)

The most remarkable problem that was mentioned by all the lecturers is cheating, the problem that is very difficult to detect and to prevent especially when the test is online and there is no proctoring involved. Respondent 1: "*Students learned perfectly well how to cheat. In Poland this is the part of the academic culture. It is very unfortunate here*". Respondent 2: "*Cheating is the problem that many of our professors faced*". Respondent 3: "*The problem is of course with the students cheating during the tests, so it's easier to prevent cheating in class then online and in Poland the cheating culture is really strong, so students are doing everything they can to cheat and they are not ashamed of it*". Respondent 1 was also impressed by low student's engagement when working in the group: "*In every group there is a person who does a lot and then you have a person who does some and then you have two people who do nothing….I think that at some point they told me that they are fed up with group work, and that they would like to do an individual assignment*" and careless attitude of certain students when doing assignments: "*they copy paste that information from the website*" instead of doing it on their own.

Some lecturers also faced difficulty with checking all online assignments and giving feedback to everyone individually. It is very time consuming and slower than giving feedback verbally. Respondent 2: "*I had to kind of give individual comments to everyone, every person and when I have… like for example, last year in winter semester I had like over 400 students*".

Problems related to assessment process (Radboud)

Immediately after pandemic started, university faced the problem of conducting exams in online setting. The main problems online were how to avoid cheating and how to keep the quality of the exams high. The best solution was to ensure proctoring during exams, especially for a large group of 650 students. Respondent 7: "*We really needed to have a multiple-choice question exam that would be proctored*".

But this solution had lots of resistance among students, they considered it as a breach of privacy. Respondent 5 mentioned that the situation with proctoring was exaggerated. Respondent 5: "*If you really look at the risks and assess the risks. You can go to the University where there's a chance of getting virus or spreading virus or you can do exam*

from home with proctoring… and there were so many provisions". At the same time the quality of the exams with proctoring was much higher than open book exams. Respondent 5 questioned those exams that were without proctoring: "*I think there are a lot of students that got away with little learning, right. Because the exams were too easy*".

But many lecturers opted for no proctoring exams because it was an easy option, there was no need to defend such choice.

Respondent 5: "*I think there have been a lot of open book exams that were really not meeting any requirements, but a lot of teachers are choosing that because that was the easy option.*" On the other hand, open book exam means that it takes more time to check the results, especially for big groups. Respondent 6: "*You need much more time, more teachers*". Usually, students think that home take open book exam is easier than multiple choice. But it is not always the case especially in case with running SPSS analysis. Respondent 6: "*The students hated it…So the feedback was very negative that they felt extremely rushed, extremely pressured, because then they had to do real analysis*".

Warsaw - Radboud

Regarding assessment process problems, lectures in both universities faced different problems. On the one hand, lecturers from Warsaw confronted high level of cheating among students especially in the times of pandemic and online education when it was difficult to control both study and assessment process. On the other hand, lecturers from Radboud tried to implement Proctorio as a surveillance software program aimed at preventing cheating during exams.

4.2.5. Problems related to the quality of online education

Problems related to the quality of online education (Warsaw)

Cheating as the main problem mentioned by respondents is related to another one – quality of education. Respondent 1: "*It spoils the morale and if it lowers the quality of education, it is frustrating*". Researches revealed that students are afraid to return back to offline classes because they didn't learn much last year. Respondent 2: "*They didn't learn much last year because it was online and they didn't have to do much because nobody was really checking in the exams*". Another thing is that online education lacks social contact interaction, real communication between the students. Respondent 2: "*It just tiring, monotonous, repetitive and I think that people are just getting really bored with that form of learning and not getting a lot of it.*". Respondent 3 thinks that how students progress in studies is the question not of

online or offline but the question of their self-discipline: "*I think it is the question of students' motivation*".

Problems related to the quality of online education (Radboud)

Quality of online and offline lectures were the same, not much difference. Respondent 8: "*I was surprised by the quality of teaching you could still provide online…I really like the way people talk in the breakout rooms, they could have very good discussions in subgroups*". Students were also actively using chat function online. Respondent 8: "*Online students were much more likely to ask questions*".

As for quality of the exams, those with the proctoring were much better in terms of quality and meeting learning goals, but in order to use proctoring, lecturer needed to defend it. Respondent 6: "*If you wanted to use proctoring, if you want to have a good quality of an exam, you had to defend it*". Lecturers also agreed that to ensure the quality of education both online and offline is easier when group is small. The bigger the group, the more difficult it becomes to organize the learning process. Respondent 7: "*I would say for a group of 15 to 30 students you have more formats available, tools available of how you can teach content, you have more flexibility*".

The grades during pandemic year were higher. Respondent 7: "*if we would quantify quality of education by grades, it was higher, on average it was a full point higher than previous years*" Respondent 7: "*I think students learned more, or at least the same as in previous years*".

Warsaw - Radboud

Regarding the quality of online education, lecturers at both universities agreed that in general grades of students during online education were higher than before pandemic. In Warsaw quality of online education is strongly connected with cheating. Lack of motivation and possibility of cheating at the exams made it possible for some students from Warsaw to let go without much learning. Lecturers at Radboud noted that using Proctorio improved the quality of exams in comparison with open book exams when quality of the online lectures remained the same as in face-to-face learning environment.

4.2.6. Problems related to the lack of sufficient financing

Problems related to the lack of sufficient financing (Warsaw)

Financing is a problem here. Respondent 2 "*It is a public university, so the money is limited*". Respondent 3: "*The lack of sufficient financing is the problem all the time, like for example with getting access to the programs*".

University provided the software necessary for online teaching but access was limited. Respondent 3: "*I'm still begging to get the professional version of Kahoot or Slido that I'm using because in all of them I'm using the free versions and the free versions are really limited*". Respondent 2 wanted some software for online survey and got reply: "*It's too expensive, we're not going to buy it*".

University didn't provide laptops for working from home to the lecturers. Respondent 1: "*So at home I have all the equipment that I bought with my own money.*"

Respondent 2: "*I didn't expect anything even… it didn't cross my mind that I can ask for something because I knew that nothing will be given to me*".

Respondent 3: "*I don't even think that it is a problem of financing, It's more the problem of the university bureaucracy and tender procedures.*

Problems related to the lack of sufficient financing (Radboud)

No one from the respondents mentioned problems related to lack of sufficient financing. Respondent 5: "*Our university is in a good state financially*". University provided the lecturers with laptops to work from home, software for online teaching, it hired student assistants. Respondent 5: "*I felt there was suddenly a lot of money to spend in the university and faculty also. There were more people hired*". Respondent 6: "*So they are hiring, hiring, hiring and now we do have people*", "*So in terms of computers you can ask for anything, right?" That makes sense. And then you would relatively quickly get that*". University offered individual budget for improving working space at home. *Respondent 8 "I didn't even think of asking my employer to pay for the chair. And then in the end they decided to pay for it*".

Warsaw - Radboud

In general, there were no complains from the Radboud lecturers in terms of financing. Every respondent from Radboud whom I asked was satisfied with the level of financing, laptops, software, technical and student assistance and other help for organizing work from home. Warsaw university was in less favorable position in terms of financing and that was mentioned by the respondents at the interview. It resulted in lecturers using or buying their own equipment (laptops or software) that was needed for work.

4.2.7 Problems related to lecturers' experience in online distance learning

Problems related to lecturers' experience in online distance learning (Warsaw).

Some respondents had no previous experience with online learning. Respondent 1: "*I never offered and never did any teaching in the remote version, even blended also*". Respondent 3:

"*I also wasn't familiar with any professional programs how to, you know, to record the lectures. We were lost, we don't know these tools*".

Some respondents had little experience with online learning, mostly asynchronous.

Respondent 2:" *I didn't do any online learning as in like you know synchronous learning, meeting students online*"

Respondent 4: "*And I had some poor experience with other tools because in this project I had some meetings where they used such tools like Mentimeter or Slido or Padlet*".

In most cases after the start of pandemic lecturers needed to learn the tools for conducting lectures online.

Problems related to lecturers' experience in online distance learning (Radboud).

There were respondents who had previous experience with distance learning and were quite confident about that. Respondent 5: "*I started working with that in 2011, so that's quite a while. I did some flipping the classroom*". Respondent 6: "*I had already experience with these kinds of formats already beforehand…I'm very interested in digitalization*". For some respondents distance learning was quite new experience. Respondent 7: "*No, no, not real experience in distance learning now. All of the teaching that I did…was mostly on campus*". Respondent 8: "*With teaching yes but not with distance learning*".

Warsaw - Radboud

With regard to lecturers' experience in online distance learning, lecturers in both universities had the same challenges. Some lecturers had previous experience with distance learning and some did not have at all. Therefore, for lecturers with zero online distance learning experience it was more troublesome situation.

4.2.8 Problems related to student's academic performance and well-being

Problems related to student's academic performance and well-being (Warsaw).

Students were multi-tasking when staying online, especially when turning cameras off.

Respondent 4: "*They could spend the whole day in their pajamas…it made them more sleepy and less focused*". Respondent 1: "*I also noticed that students are reluctant to ask for explanation. They are less focused so they don't really listen…they are less attentive*".

Respondent 2: "*Our memory is context dependent…but when you're sitting in front of the computer for eight hours, there is no context, everything is the same… everything blends and there is not that much that you can take out of it. And it's just tiring*".

Online studies and cheating during the exams gave students opportunity to combine studying on different faculties or start working. Respondent 1: "*You could see that they were multi-tasking students, they took different kinds of studies, they could study business and law and something else. Then they tell you that they are overloaded*". Respondent 2: "*I think they just got lazy and they just got used to the fact that I'm just will be able to cheat and you know many of them I think during this time started working*". Respondent 3: "*Cheating is a huge problem in online testing.*"

Problems related to student's academic performance and well-being (Radboud).
Adjusting to the online setting meant that some exams were open book exams. Respondent 5: "*I think there are a lot of students that got away with little learning because the exams were too easy. And I also think there were some exams that were testing other skills during the exam".* When staying online students were missing interaction with each other, with peers and it is also important part of the learning process. Respondent 6: "*So loneliness, not enough social interaction, not having this student study experience you would like to have...that was the hardest challenge*". Respondent 8 expressed concern that students didn't visit classes anymore and online it is more difficult to check how they are feeling and behaving. Respondent 8: "*I think now because all non-verbal communication is lost, I'm a bit worried that we're going to lose some students, because we just don't see them, we don't talk to them. You don't have these informal contact points before class, after class and during the breaks and there is something that I do worry about"*

Warsaw - Radboud
It is important to note that lecturers in both universities took into consideration students' academic performance and well-being as a crucial factor in the learning process. What was common for students in both universities is lack of peer interaction, not enough motivation, loneliness. In general problems with academic performance and well-being for students in both universities were the same, they missed social activities of before pandemic time.

4.2.9 Problems related to balancing work and family

Problems related to balancing work and family (Warsaw).
Some respondents mentioned that working from home was not convenient because they didn't have working space. Respondent 2: "*We don't have a big apartment and I have my partner living with me, so he also was working, so we were sharing this small space*". "*These two lives - the work life and home just blending into one*".

The biggest challenge for lecturers who have kids was to combine lecturing and work with children who stay at home and need attention.

Respondent 3: "*The biggest problem were kids, I have three kids…The kids were running around and I was trying to record asynchronous lectures…It was crazy time…complete nightmare*", "*I quitted any type of scientific work, I stopped doing anything because I haven't got any time for it*". Respondent 4: "*Actually I have two children and they were also online and my husband went also online so we were all in one house*"

Problems related to balancing work and family (Radboud).

For lecturers who have children staying at home, it was quite difficult to combine both work and taking care of children. Respondent 6: "*So at the times when the schools were closed, that was quite a challenge…Children needed constant monitoring…it was hard*".
Respondent 8: "*I don't have kids, and my work life balance was in that sense not really in danger because I think those with kids are at a lot more trouble*".

Warsaw - Radboud

Balancing work and family was especially difficult for lecturers in both universities who have children and needed to combine taking care of children with lecturing and working. It was especially challenging when lecturers were limited in space at home. In this regard, all lecturers were in the same situation of organizing working process from home in the most efficient way.

4.2.10 Problems related to the mental well-being of the lecturers

Problems related to the mental well-being of the lecturers (Warsaw)

Because of new format of lecturing, more time of preparation to the lectures, more time for giving feedback to the students, all respondents felt more pressure, more tiredness, more anxiety.

Respondent 1: "*It also became less fun for me to work if they there is no human interaction.*", *There was very little interaction and that, as it turned out, that was very physically tiring for me. You still have to be very focused and yeah…so that was very mentally tiring. I had also physical issues because you keep sitting*". "*It became more extensive and very time consuming*"

Respondent 2: "*There was a lot of extra like burden*", *I'm overwhelmed with this and I'm not dealing well with it*", "*I'm working much more than I used to*".

Respondent 3: "*We were on our own with the kids and with the work, so it was terrible.*"

Problems related to the mental well-being of the lecturers (Radboud)

Problems that were mentioned in terms of mental well-being apart from managing work and family life in times of pandemic are being under pressure with lots of tasks to do and overworking, working long hours.

Respondent 5: "*My impression was that there was a lot of attention to students and not that much for us. We actually had more pressure but we also had to help each other and magically make things work".*

Respondent 8*: "I had this tendency and I hear it from a lot of colleagues who work too much.", "I see that people that are single they sometimes have burnout or got even more into that working too much atmosphere.*"

After overview of the problems that lecturers in the universities experienced, the overview of solutions will be outlined below.

Warsaw - Radboud

Lecturers in the universities admitted that working life after the start of pandemic indeed changed. Almost all lecturers mentioned that they were working longer hours than before in order to establish working routine, make learning process more interactive, get used to the unknown software, give feedback to the students' assignments etc.

4.2.11 Comparison of categorized problems in the universities.

When comparing the problems lecturers in both universities faced, it was possible to detect certain similarities. All respondents were concerned, for example, about the problems at the operational level: how to organize online classes after the start of pandemic, what will be the most convenient software for work, how to ensure the same level of interaction and communication as during the offline classes. Full table of similarities in problems that lecturers in both universities experienced is in Appendix 6.

At the same time, it was also possible to detect certain differences in problems that lecturers in both universities experienced in times of the pandemic.

The main difference and the problem that was mentioned by all respondents of the university of Warsaw is cheating. Respondent 1: "*In Poland it is a part of academic culture. It is very unfortunate here*". It is the problem that influencing not only the assessment process but also the quality of education and academic performance of the students. It is also the problem that

has become more difficult to detain and to prevent in times of distance learning and online examination process. As it turned out exams during the pandemic were not proctored.

The main difference and the problem that was mentioned by the respondents of Radboud university is bureaucracy in decision making process. It has influenced on how decisions in the university were taken and how they were communicated to the lectures. Respondent 5: "*I think the bureaucratic processes through which these systems would have to be approved were difficult. That's where the problem for me was. Another problem was that decision making was always too late and very inconsistent*". It was also difficult for the lecturers to combat bureaucracy or to find optimal solution when they couldn't agree with the management decision. In certain situations that were mentioned during the interviews the lecturers of Radboud felt powerless to change something.

One more difference between universities is in financing. No one from the respondents in Radboud complained about lack of financing. Respondent 5: "*Financially it was…I felt there was suddenly a lot of money to spend in the university and faculty also. There were more people hired*". In some cases, respondents didn't even expect a refund of their expenses aimed at organizing working space at home but they got it. Respondent 8: "*I think at some point I invested in a good office chair… I just decided to buy it myself because I thought it was important for my own health and then at the university decided to refund.*

Different situation in terms of financing was in Warsaw. Respondent 3: "*The lack of sufficient financing is the problem all the time, like for example with getting access to the programs. So, for example, me having this basic Zoom for six months and couldn't ask to get this better version because there was no money to buy the better licenses for everyone. I'm still begging to get the professional version of Kahoot or Slido or other programs that I'm using because in all of them I'm using the free versions and the free versions are really limited*". Some respondents mentioned that they even didn't dare to ask and tried to fix problems on their own. Respondent 2: "*I didn't expect anything even… it didn't cross my mind that I can ask for something because I knew that nothing will be given to me. It is just how it is here, right? Because, you know, like money is always a problem here in the university. It is a public university, so the money is limited*"

A summary of all the problems and solutions in both universities is attached in a separate file. Full table of differences in problems that lecturers in both universities experienced is in Appendix 7.

4.3 Solutions to the problems

After presenting the problems that lecturers in both universities experienced in paragraph 4.2, it is possible to move forward to the solutions that they developed to cope with experienced problems. In order to answer research question: *How did lecturers at universities respond to organizational problems they experienced when facilitating learning process in times of pandemic?* (paragraph 1.2), all solutions are presented below in the same order as in the final template (Appendix 5) and are supported by the original quotes of the respondents.

4.3.1 Solutions to organizational problems

Solutions to organizational problems (Warsaw)

Facing the new realia and working in the times of pandemic, the lecturers adapted their classes for online setting. Respondent 2: "*I knew that my next class was on next Monday and I just started to prepare the online version of it for students. I was one of the first, I remember*". In order to engage students and to ensure interaction different quizzes were developed. Respondent 2: "*I tried to use more interactive methods*". Lecturers who couldn't work from home due to different reasons had this opportunity to go to the university and to do livestreaming from there. Respondent 4: "*I know that university offered the room with the computer and infrastructure and also offered the support from our IT staff*", Respondent 3: "*I had to separate home from work*". Later on, the university developed rules how to organize distance learning and how to conduct lectures online. Respondent 4: "*They prepare lots of regulation also for students to ensure that these lectures were quite comfortable also. So it was recommended to have their camera on so that the lecturers could require this for students….how to proceed if during exam something happened*", Respondent 3: "*They did the rules that we are using only this platform, all the classes need to be synchronous*".

Solutions to organizational problems (Radboud)

Lecturers got students assistants who helped them in conducting online lectures. Respondent 8: "*I actually got approached whether or not I wanted student assistant*". They helped lectures with letting students in online classroom, assigned breakout rooms. In this way lecturers were not distracted from their main job -conducting lecture. University also helped lecturers in organizing their working space at home by offering to buy what is needed and required for work from home. Respondent 6: "*I'm not sure who organized this, whether it*

was the University or the faculty but we could get 250 euros for something to improve our office space". In order to provide interaction during lectures, the lecturers opted for live streaming of the lectures instead of pre-recorded ones. Respondent 5*: "I life streamed them just for the students to be able to ask life questions".* Respondent 7 also wanted to stream lectures: *"there needed to be that interaction, meaning that you need to be able to at least ask questions to me"* that's why prerecording or using last year lectures was not an option.

In business administration there is 5 departments. With representatives from every department, they made regular meetings where they discussed problems and possible solutions. Respondent 6: "*We were more advising voice because we didn't have any decision power*".

Warsaw - Radboud

Lecturers in both universities faced the main problem of adapting classes to online setting and ensuring the same level of interaction that was provided during before pandemic times. In both universities, it was agreed that live streamed lectures are more beneficial in terms of interaction than pre recorded ones. In both universities it was also possible to use working space of the university to live stream the lectures when it was considered more convenient by the lecturers themselves. Respondents from Warsaw mentioned that set of regulations from the university helped them to organize their study process better, it was guide with rules and obligations both for students and lecturers. Respondents from Radboud noted that they found help provided by technical and student assistance crucial. What was also beneficial is regular meetings of lecturers where they could discuss their problems and find resolutions.

4.3.2 Solutions to digital problems

Solutions to digital problems (Warsaw)

Lecturers organized their working space at home by themselves. Respondent 1: "*At home I have all the equipment that I bought with my own money*". To make online lectures possible university provided with licenses. Respondent 1: "*We got the licenses and we got access to platforms that already existed*". Respondent 2: "*Zoom was bought by the faculty*". To improve internet connection at home lecturers were buying new router. When internet was not stable in the university then Respondent 2: "*just used my personal hotspot*". Some lecturers in order not to waste time and before clear university's strategy was defined, started to make asynchronous classes on university's Moodle platform. Respondent 3: "*So I was having this asynchronous course on Moodle, I was prerecording the lectures.*", "*I was just*

using the PowerPoint functions, so the PowerPoint presentation has the function of recording voice to your slides and I was using this in the beginning".

Solutions to digital problems (Radboud)

University provided with laptops, licenses and student assistants to make work from home possible. Respondent 8: "*I have laptop from the university*". Lecturers were usually familiar with how programs are working, they also had support from TIP (Teacher's information point) and technical support. Zoom was picked as the main platform for work. Respondent 6: "*University decided to focus on Zoom and not to have Webex*". But Zoom couldn't accommodate 650 students simultaneously and Respondent 7 was looking for solution how to livestream the lecture. Respondent 7: "*That's how I got into YouTube*". And to get better internet connection Respondent 7 went to the university: "*The university has excellent connection that works properly*".

Respondent 6 was also in a group of lecturers who were regularly meeting and discussing different problems: "*So for example in this digital support team we would then try out all kinds of things*", "*Also within the department we were the people that other teachers could go to with their technical problems*".

Warsaw - Radboud

After trying out different software solutions, both universities agreed that Zoom will be the main platform for conducting online lectures. Wherever Zoom was not possible due to the limited capacity of online participants, YouTube was preferred as a temporary solution by the lecturers from Radboud. Lecturers from Radboud also mentioned that assistance provided by students' assistants during the classes helped them to concentrate on lecturing itself, the rest was organized by students' assistants (making breakout rooms, letting students in virtual classroom etc). When internet connection was not stable some lecturers in Warsaw were using their own hotspot for the sake of good internet.

4.3.3 Solutions to the problems related to the study process

Solutions to the problems related to the study process (Warsaw)

At first lecturers in the university were trying out different solutions and learning techniques so they could empirically understand what is better. Respondent 1: "*The first semester, the semester of 2020 was kind of testing the waters".* Grading took lots of time especially when it is not automated process but manual. *"I decided to limit the number of the assignments to simplify it", "I tried to adapt the course material, to make it more interactive and I used*

more surveys". Respondent 3 also mentioned that using interactive breaks and also Google Jamboard, breakout rooms helped with making students focused and not bored. Respondent 3: "*I know that you can't focus on online presentation for more than 10 minutes. In the class you can't focus for more than 20 minutes max. So I was trying to interrupt, so I'm talking for 10-15 minutes max and then we are doing discussion, we're doing quiz, we are doing Kahoot or we are doing some voting on Slido and so on.*" Respondent 3 was using discussion forums to engage students and it was even better than offline. Respondent 3: "*I would say because some discussions went even better on these online forums, then in the class, because some are controversial topics*". Lecturers also encouraged students to have their cameras on. Respondent 3: *The classes were more human for me that I can see that I speak to the people not to the wall*". Respondent 4 was asking students to write oh the slides and it permits all the students to work simultaneously which is normally not possible offline. Respondent 4: "*I started to enable my students to write on my slides*".

In many situations lecturers tried to solve the problem on their own without waiting for or asking for help. Respondent 2: "*I just used to the fact that I have to do on my own and if there's a problem -have to find a solution, right? And I have to pay for it.*",
"*I just purchased, you know, advanced version for me on my own*".

Solutions to the problems related to the study process (Radboud)

Lecturers were using discussion forums, chatting functions in Zoom and Breakout rooms in order to ensure students' engagement. The main issue all of the lecturers wanted is to ensure interaction during the lecture. Respondent 8: "*So especially the breakout rooms I like a lot especially for the work group sessions… rooms, they could have very good discussions in subgroups*". Respondent 6: "*Make use of the discussion board, post your questions there…which is our preferred mode because usually students have the same problems*", "*We made heavy use of the chat function, that actually worked surprisingly well.*

Warsaw - Radboud

Lecturers in both universities agreed that interaction was the main thing they wanted to ensure during online lecturing. Without interaction they used to during face -to -face classes it was impossible to reach the learning goal.

Lecturers in Warsaw mentioned different interactive software platforms they used, for instance: Slido, Jamboard, Mentimeter, Kahoot. And they were getting favorable reaction from the students after using such interactive breaks. As for this additional interactive software that was needed for online classes, lecturers in Warsaw were sometimes using free

trial version or were buying it on their own. Moreover, they also encouraged students to have cameras on wherever possible in order to establish eye contact, the same as during offline classes.

Lecturers from Radboud mentioned chat functions, discussion forums and breakout room as a way of engagement students during lectures.

4.3.4. Solutions to the problems related to the assessment process

Solutions to the problems related to the assessment process (Warsaw)

The main problem was cheating at the exams. And even if lecturers can't fully control that they still invented some methods to prevent that. Respondent 2: "*Every student receives different set of questions*" from the pull of possible questions, Respondent 4: "*each student gets for example 20 randomly chosen questions*". They made exam time limited and it is not possible to return back to the previous question. Respondent 3: "*I was giving them 30 seconds to answer the question. You know you don't have time to look at the answer, it's either you know it or you don't know*".

Due to the fact that Respondent 4 didn't have many students at the exam, it was possible to do online surveillance. Respondent 4: "*They had to have camera on. I could see them writing and not looking around. And they had also to be unmuted*"

As a way of convincing students to be more focused on the lectures and be active lecturers were rewarding students with extra points for participation in discussion and having their cameras on. Respondent 3: "*You are getting one point that you have participated in the discussion*", "*I came up with the only solution that you need to give rewards to students for putting the camera on and it worked*".

In some cases, lecturers instead of giving just points, they were giving feedback. Even if it was time-consuming process. Respondent 3": "*I was trying to write feedback to each one personally on what I like and what I don't like and not only, you know, the points, more to have this human contact with them as well.*". At the same time Respondent 3 could make the process of grading more automatic: "*you don't have to do it by hand in Excel, all the points, calculate them, then transfer them to this system with Notes*".
There were problems where lecturers couldn't find solution very quickly and they just accepted that, for example, how to teach soft skills like leadership online (Respondent 2), how to make process of grading automatic and less time-consuming and at the same time

give personal feedback to everyone (Respondent 1), how to make sure that student indeed didn't cheat at the exam.

Solutions to the problems related to the assessment process (Radboud)

In order to prevent students from cheating Proctorio was introduced that made it possible to make exam from home under surveillance. Respondent 5 was strongly advising for using Proctorio during all exams: "*if you cannot invigilate the environment of the students, then they can cheat, and it would not be fair because then everybody can look up the answers of the exam".* In fact, when doing exam with Proctorio lecturer needed to defend it that it the only best solution to conduct the exam. That's why to avoid "defending" some exams were open-book. It was students'resistance against Proctorio as a breach of privacy but eventually court accepted that it is legal to use during pandemic. Respondent 5: "*There were also so many provisions. If you felt like you do not want to show your room, you could come to university to make the exam in a room there that they would provide like a neutral workplace*".

Warsaw - Radboud

In terms of assessment, lecturers in both universities had different problems. For lecturers in Warsaw the main problem was cheating during exams, for lecturers in Radboud the main problem was to implement Proctorio during online exams.

Lecturers in Warsaw tried to combat cheating by limiting time, disabling returning back in questions, making random set of questions etc.

Lecturers in Radboud needed "to defend" the necessity of proctored exam. In order to persuade students that exam proctoring doesn't mean breach of privacy, the educational campaign had started and set of provisions was made.

4.3.5. Solutions to the problems related to the quality of online education

Solutions to the problems related to the quality of online education (Warsaw)

All lecturers agree that cheating decreases the quality of education. And if in terms of the quality of lecturing, it remained the same or became even better due to different interactive software. In terms of the quality of education, it became worse due to the cheating. Respondent 2: "*I just feel it went down*". Respondent 3 described situation with obvious cheating when two groups of students were doing the same exam with two hours difference. Respondent 3: "*It's obviously cheating… the average. grade difference between these two*

groups is two points higher…. authorities told me to do nothing". The reason for that was that it was difficult to prove without direct evidence. In this situation, the solutions to improve the quality of education were the same as solutions to the problems with assessment described above.

Solutions to the problems related to the quality of online education (Radboud)

In general, both offline and online it is better for the quality of education when group is smaller. Respondent 6: "*You have more formats available, tools available of how you can teach content, you have more flexibility*." Respondent 5 has the opinion that quality of education can be guaranteed when high quality of the exams is ensured. Respondent 5: "*I've spent quite a lot of time on writing advice for other teachers and how they can move their exams online in a reliable way so the quality of the examination should be guaranteed*". Respondent 7 also mentioned about guiding document that helped with argumentation for proctoring at the exam. Respondent 7: "*they also set up a document and wrote kind of motivations that you could pick to motivate why it was necessary to have Proctorio for your course. So that was helpful.*

Warsaw - Radboud

Problems related to the quality of online education are interconnected with the problems of assessment. Lecturers in Warsaw struggled with combating cheating because it decreased the quality of exams and online education. They recognized that impossibility to implement proctored exam decreased the quality of exams. Unfortunately, no definite solution was found to combat cheating and to ensure high quality of the exam.

Lecturers in Radboud mentioned that they had set of guiding rules developed by lecturers for lecturers and that helped them to ensure high quality of exams and to defend the necessity of proctoring during the exam if needed.

4.3.6. Solutions to the problems related to the lack of sufficient financing

Solutions to the problems related to the lack of sufficient financing (Warsaw)

There was diverse opinion among lecturers. Some lecturers were satisfied with what they had. Respondent 6: "*I didn't have to make any investments for the purpose of online teaching I already had everything*". Some were provided with better version of software (Zoom) later. Respondent 3: "*I think I was begging the management department for six months to get it*" but they also think that it was more problem of bureaucracy than finance. Respondent 3: "*I don't even think that it is a problem of financing. It's more the problem of the university*

bureaucracy". Respondent 2 didn't wait for university to buy certain software for learning purposes but was buying it for her own money. Respondent 2: "*money is always a problem here in the university".*

Solutions to the problems related to the lack of sufficient financing (Radboud)

In terms of financing lecturers didn't have any complains. They had enough student assistants, laptops, software and budget to improve their working place at home.

Respondents from Radboud mentioned no problems related to financing of what they needed for work. On the other hand, lecturers from Warsaw were using own money to buy software that they needed or using their own equipment for work. They also mentioned that software for lecturing online was provided late or provided with limited functions. They couldn't wait and that's why they found solution in buying what they need using their own money.

Warsaw - Radboud

Respondents from Radboud were in general satisfied with the level of financing in the university. As for respondents from the Warsaw university, they tried to manage on their own in terms of finding solutions without waiting or asking for extra financing. They were either using trial version of software of buying something on their own when it was extremely needed for the online classes. The same thing is about equipment: in the most cases lecturers from the Warsaw university were relying on their own equipment for lecturing from home.

4.3.7 Solutions to the problems related to lecturers' experience in online distance learning

Solutions to the problems related to lecturers' experience in online distance learning (Warsaw)

There were trainings organized by the university and aimed at developing skills in online distance learning. Respondent 2: "*Yeah, there was a training in zoom on how to use zoom, how to use breakout rooms, how to do also polls and the stuff".* Respondent 3: "*Two courses that I have participated, so these were for free. We're just asked to, you know, to enroll and you can participate in these online classes".* Those lecturers who needed some skills could join the trainings and get some practical experience. The courses were also diverse aimed at the participants with different level of preliminary experience. Respondent 3: "*From the basics up to the more complicated things for a lot of additional applications that you can use for online teaching".* Respondent 2: "*It was useful to me because I didn't use that before".*

Some lecturers didn't wait for the university courses to be provided, they tried to learn by themselves. Respondent 3: "*I didn't need a Moodle course because I learned it by myself and it is quite easy*"

Solutions to the problems related to lecturers' experience in online distance learning (Radboud)

Some lecturers said that they already had some previous experience and some understanding necessary for distance learning. Respondent 5 "*I had a training on examination and examination techniques and didactics underlying that, it was quite extensive and that helped me a lot*". They helped each other and shared ideas. Respondent 6: "*I have one colleague within marketing who's very motivated to try out things and do things but he simply doesn't have the overview so much how these things work, so I helped him a lot in the beginning*". University also provided with different trainings in order to help lecturers to adjust to the current situation. Respondent 8: "*In the beginning, what I really liked, that in the department they made an overview of all the different programs that were available and of the trainings available and it also really helped a lot*".

Warsaw - Radboud

In both universities lecturers attended trainings organized by the universities or tested new software individually. They didn't have differences in approach how to overcome the problems related to experience in online distance learning.

4.3.8 Solutions to the problems related to students' academic performance and well-being

Solutions to the problems related to students' academic performance and well-being (Warsaw)

Lecturers tried to get some feedback from students to understand how they feel about the e-learning and in general, they also tried to introduce gamification into classes to make them more amusing for the students, they were regularly asking how students are feeling. Respondent 1: "*I did talk to students and I asked them and I also got feedback from them*". Respondent 1: "*I decided to start each class with a question how people are feeling. But instead of asking them how are they feeling I showed pictures and let's say I used animals or flowers…. I feel like a funny cat, or like a curious cat, or like a lazy cat.*". Respondent 3: "*I started to think really about how to use this Internet and computers and smartphones*

techniques during your classes. And I think, it's more interesting, more involving for this Generation Z students".

Solutions to the problems related to students' academic performance and well-being (Radboud)

Lecturers of the university tried to enable discussion between peers, helping them to communicate in breakout rooms. Respondent 6: "*In digital marketing we taught it online, we tried quite some things that were maybe not always in the interest of teaching a particular content, but just to enable a bit of discussion between peers".* Respondent 8: "*I put people in breakout rooms during the breaks, so that they could talk with each other.*" Respondent said also that she stayed after the class as well online in case some students just want to talk. Respondent 8: "*If people had personal questions, if they were experiencing any problems, they could linger and I could talk to them at the end of their class*".

Warsaw - Radboud

Lecturers of both universities paid attention to how students feel and how they study in the times of pandemic. In Warsaw they were creating questionnaires and surveys aimed at getting students' opinion about the current study program and study load and also asked what can be improved. Lecturers in Warsaw also used gamification in the study process in order to keep students focused, involved, engaged in the class and also to cheer them up.

Lecturers in Radboud organized peer discussion in breakout rooms that was supposed to decrease the feeling of loneliness students had when studying from home. Some lecturers also mentioned during interview that they made themselves available after the class in case of any questions even personal ones from the students.

4.3.9 Solutions to the problems related to balancing work and family

Solutions to the problems related to balancing work and family (Warsaw)

In order to structure working process and separate it from home some lecturers preferred to go to the university to livestream lectures in more formal setting. And for questions they asked students to write e-mail or use consulting hours and not to use chats or messengers. Respondent 2: "*I started to go to work instead of work from home or not giving students my Skype, but just asking them to write emails and setting time for the consultation.".* Those with kids were in difficult situation, combining parenting and lecturing. They asked their spouses to help them when needed. Respondent 3: *"he'll just take care of the kids because I need to record my lecture now".*

Solutions to the problems related to balancing work and family (Radboud)

In order to ensure productivity and protect themselves from being interrupted during online learning process, lecturers preferred to isolate themselves in a separate room. Respondent 6: "*So we have a cellar room, the internet there was still ok, so I would usually go there and teach so that children could have the house for themselves.*" They also tried to convince children that it is important for the lecturing process not to be interrupted. Respondent 6: "*So we had a couple of serious talks… "Look, I'm now gone for two hours, don't interrupt me*"" Some lecturers also preferred to livestream from the university because the internet connection in the university was more stable and because it was more formal setting.

Warsaw - Radboud

The most difficult situation was combining working from home and parenting duties in times of pandemic and isolation. Nevertheless, in general lecturers in both universities found the same solutions to the problems related to balancing work and family in the times of pandemic. They were going to university for lecturing in the formal setting when lecturing from home was impossible, they were isolating themselves in a separate room whenever possible for conducting lectures from home, they were asking partner to help with taking care of children when needed etc.

4.3.10. Solutions to the problems related to the mental well-being of the lecturers

Solutions to the problems related to the mental well-being of the lecturers (Warsaw)

When recognizing the problem and stressing that they were "exhausted", "frustrated", "stressed", felt "anxious", lecturers at the same time didn't mention any kind of solutions to the problem of mental burn-out. They just tried to do their best in the situation that happened.

Solutions to the problems related to the mental well-being of the lecturers (Radboud)

Lecturers of certain departments in cooperation with San Paolo (Brazil) university organized joint online community together with students and Phd candidates where they could discuss different problems and also talk to each other. Respondent 5: "*It really allowed us to come together and to share that anxiety and stress and especially when this situation was like mad".* Other lecturers mentioned that they tried to organize meetings together with other colleagues just to discuss different things, to have this social contact together. Respondent 8: "*What was organized was that, how we call it, social moments. So every two weeks there was this hour that colleagues from my department we're meeting on Zoom and then we would just*

talk about how everyone is doing and what we were facing, what was difficult". Lecturers also tried to find time for themselves, to had breaks from computer. Respondent 8: "*I tried to walk three times a day from 10 to 20 minutes*".

Warsaw - Radboud

What is common for the lecturers in both universities – they tried to have their work done no matter what: sometimes without waiting for extra support, by sacrificing their own free time, by working long hours and looking for the solution on their own.

Lecturers in Radboud tried to get regular online meetings with colleagues and not only for discussing working problems. They also mentioned to have regular breaks for walking or switching tasks in order to prevent burn out.

The summary of all problems and solutions and named as "Categorization of the problems and their solutions in two universities: Radboud University, the Netherlands (Radboud) and the University of Warsaw, Poland (Warsaw)" is in separate attached document.

4.3.11 Comparison of developed solutions in the universities

After the start of pandemic, both universities faced the uncertainty and unpredictability of the situation. There was no ready plan in place how to continue with the learning process. The lecturers in the universities faced the same level of confusion caused by irregular interruption. What was common for the lecturers in both universities is that they did not wait for instructions and dived into unknown immediately, trying to figure out what every one of them can do in this situation in order to continue lecturing.

Respondent 1: "*We didn't have any precise instructions yet because the whole university was trying to figure it out*".

Respondent 3: "*They weren't even telling us anything that we should move them online or something like this. This information came after two weeks or something, but I remember that I started immediately so I didn't wait for this, for the authorities to tell us to go to the online. And I knew that my next class was on next Monday and I just started to prepare the online version of it for students. I was one of the first, I remember.*"
Respondent 7: "*This is a challenge, I still have a bit of time to find the solution, and then I thought, well, I'm sure that we will find something that can be done.*"

All the lecturers were taking personal initiative in order to solve the problem, how to organize classes when offline was not an option anymore. The common answer for all of them was online. And online had many variants. They were trying different software until the most suitable and affordable solution was found. In both universities it was Zoom that was decided by the university management as a software to be used for the online classes. Before the final decision was made by the university, other different types of software were used.

Lecturers in the universities had different experience in terms of online lecturing. One more common thing: the more experienced the lecturer was in online learning, the easier it was for him or her to switch to online.

Respondent 6: "*I would say that I'm someone who likes to try out these things and then I'm very interested in digitalization... I would say I'm relatively tech savvy, so I don't fear, you know, trying it out and handling these technological aspects of it*".

Those lecturers who had some previous experience with online learning, they had already some ideas how to organize online classes in the most effective way and the switch to online for them went smoothly. For those who required some additional skills, special trainings in both universities were organized.

Respondent 1: "*They provided us some trainings, so I had colleagues who already had experience in teaching these courses and they showed us how to use the tools*"

Respondent 3: "*I haven't used many of them but I know that the university headquarters had prepared a lot of courses for teachers, they have started I think from May…there were courses for Moodle, for Zoom, from the basics up to the more complicated things, a lot of additional applications that you can use for online teaching.*"

Respondent 8: "*In the beginning, what I really liked, that in the department they made an overview of all the different programs that were available and of the trainings available and it also really helped a lot.*"

Lecturers in both universities also benefited from discussing their problems with the colleagues and learning from each other. They were also getting support from their colleagues in the same department which was required especially for those who are less experienced in online learning.

Respondent 1: "*I also talked to my colleagues who did have some experience and they kind of instructed me and showed me some fun features*".

Respondent 6: "*Also within the department we were the people that other teachers could go to with their technical problems*".

What was also similar is that lecturers in both universities paid lots of attention to interaction and interactive breaks during online classes. They wanted to reach the same level of interaction that they had before in offline classes. Respondent 2 even stopped teaching class where lots of interaction between peers was expected and she couldn't reach the same level of interactivity online.

Respondent 2: "*How to teach somebody, or to practice leadership when you're online on Zoom? So this was very, very difficult. And I must say that I still don't know how to teach that course online. And like for example, last year I decided not to teach this course, I said I don't want to do this*".

Respondent 6: "*Because I do that learning is not only about the content of the course, it's a lot also about the format. it's a lot also about the interactions that they have with me, but especially also with their peers. So especially this peer interaction I really felt uncertain about: "OK. How can we organize that if we move completely online*?""

The full table of similarities in the solutions to the problems in both universities is in Appendix 8.

As for differences in developed solutions, lecturers in Radboud, for example, received more external support from TIP, from regular lecturer's meetings and from student's assistants.

Respondent 8: "*I think in is beginning, the communication was very focused on trying to get everyone on track and getting everyone helped, so it was very nice.*"

Respondent 6: "*They, especially for the online teaching, they hired really a lot of student assistants and organized that so that teachers could focus on the content*"

In Warsaw lecturers in many cases relied on themselves, they were using free trial software or buying software on their own in order to implement, for example, interactive breaks and gamification in online classroom.

Respondent 3: "*I'm still begging to get the professional version of Kahoot or Slido or other programs that I'm using because in all of them I'm using the free versions and the free versions are really limited*"

Respondent 2: "*I can do that only because it is provided to me by a different university with which I collaborate. But here you know, they just said it's too expensive, we're not going to buy it.*"

Lecturers in both universities had different problems in terms of assessment and therefore, they developed different solutions. For instance, the main problem for the lecturers in Warsaw was to limit cheating at the exams. They developed some solutions like limiting the time of the exam, no possibility to return back to the previous question, random set of questions etc. At the same time, Radboud university was using proctoring in order to combat cheating and to ensure fair exam environment for everyone. In Radboud every teacher who wanted to ensure the quality of the exam and insisted on using Proctorio during the exam, needed to justify its necessity. For students, who were not feeling comfortable due to infringed privacy, special set of provisions was developed, they could come, for example, and do proctored exam in the university, in a separate room.

Summary of differences in developed solutions in both universities is in Appendix 9.

4.4. Future perspective

Answering the research question comprises three interconnected parts (paragraph 1.3) what kind of organizational problems lecturers of universities experienced when performed their work in times of pandemic, what solutions they found to overcome the problems and how they intend to facilitate distance learning process in the future. Problems that lectures faced were presented in paragraph 4.2, solutions to the encountered problems in paragraph 4.3 and the last part of the research question about future perspective will be outlined below.

The interviews with the respondents for the purposes of this thesis were conducted in October November 2021 when universities were reopening campuses and considering possible learning perspectives for the future in an answer to relaxation of pandemic measures (academic year in the Netherlands starts in September, in Poland -in October). Therefore, universities as well as lectures were reflecting on the possible learning models and future perspectives of the distance learning. Accordingly, "*models being considered include in-person, remote learning, or some hybrid model. Remote learning could be synchronous, asynchronous, or a combination of them*" (Sahin and Shelley, 2020, p.14).
Most of the respondents, that were asked, supported the idea of blended or hybrid learning - combination of distance learning with on-site learning.
Respondent 1: "*I pretty quickly realized that online components are here to stay. And that we probably will go towards, you know, like this blended or hybrid mode of teaching*".
Respondent 3: "*I'm going to use this blended learning. So, for example, now we came back to the classroom, we are having the normal meetings, but I'm using still the Moodle platform,*

Kahoot, Slido and so on. I'm still giving them prerecorded lectures, so they can listen to them again and I think that giving them freedom is also important".

Respondent 5: "*So I offer everything: they can come to class, there's a live stream and there is recorded. So they can make a choice what they feel fits their life best*".

This vision of the lecturers is supported by other researchers. For example, already in 2002, it was predicted that 80-90 % of higher education courses will become blended soon (Porter et al, 2014).

At the same time, lecturers stressed the benefits of both learning models. Face-to-face education gives the possibility of social interaction between peers, having eye contact, non-verbal communication, on the other hand online education gives flexibility, possibility to use chats, polls, voting etc. Consequently, lecturers agree that education should be on campus especially for the subjects where interaction and practical component are the key factors. It doesn't eliminate the benefits of online education that can be incorporated alongside on-site classes. Respondent 4: "*I think there are advantages in both and it is better to use some advantages from online teaching and apply it in on site teaching to raise the quality of teaching. I think you can teach more and show more if you are on site*". Respondent 1: "*I just thought that we have to physically go back to the university because this is the way it should be performed*".

4.5 Discussion

After all parts of the research question are presented in the paragraphs 4.2, 4.3 and 4.4, it is necessary to interconnect theory from paragraph 2.2 and practical results and to discuss organizational problems that lecturers experienced and developed solutions in the context of organizational resilience.

The key point of organizational resilience is the ability to return to the normal functioning after unexpected disruption (paragraph 2.1.2). An outbreak of pandemic, as a threat to humanity in general and learning process in higher educational establishments in particular, can be considered as an unexpected disruption to the normal educational process that affected both students and lecturers. In paragraph 2.2 four different perspectives of resilience are presented. Below they are supported by the quotes of the respondents.

A. Change perspective.

Episodic change perspective anticipates changes as an irregular and unexpected interruption (paragraph 2.2).

Respondent 1: "*It all started quite suddenly in March*".

Respondent 3: "*I even remember that the first information that we were given it was just the classes are cancelled for two weeks, but they were. They weren't even telling us anything that we should move them online or something like this*"

Lecturers in their interviews also mentioned high level of uncertainty and complexity they faced after the start of the pandemic.

B. Uncertainty.

Respondent 1: "*We didn't have any precise instructions yet because the whole university was trying to figure it out*";

Respondent 6: "*But at the same time also, of course, uncertainty how we organize this. How can we organize this not only for me but also as a team*?"

C. Complexity.

Respondent 3: "*They told us basically nothing. They gave us no tools, no help, nothing. Just go online and do whatever you like. You know, so it was... It was really cloudy. So a lot of people were doing different things*".

Respondent 6: "*You know what kinds of things can I do online? What do I handle? But in the very beginning it was also: "OK. What's the platform we're going to use? Will it be Webex? Will it be Zoom? Will it be, we had this in Brightspace, this virtual classroom*?""

The lecturers faced new problems in the times of pandemic that no one was prepared for. Nevertheless, this unexpected disruption in the learning process accelerated lecturers to do something, to cope with the anxiety, unpredictability and tension, to move forward with the aim to return back to the normal functioning of the learning process.

They demonstrated organizational resilience in line with perspective

D. Resilience time frame (paragraph 2.2). This perspective has three different types of organizational resilience: situated, structural, systematic. The difference between them is in implementing solutions in time. Furthermore, in the current situation the only possible and reliable option to continue with the studies was to go online and lecturers instantly started to look for possible options. The immediate reaction was the following (situated type of organizational resilience):

Respondent 6: "*How can we organize this not only for me but also as a team*?".

Respondent 3: "*I remember that I started immediately so I didn't wait for the authorities to tell us to go online…I immediately started to look through the options that the university is giving us for distant learning*".

Respondent 7: "*I did have the luxury that I could just invest the full two weeks in finding out what exactly can be done with this*".

At the same time, after trying out different things, lecturers wanted to find the best solutions, the best practice in order to implement them both in the study and assessment process (structural type of organizational resilience).

Respondent 6: "*So we tried out a lot of things and we were kind of the people who did that and then a try to advise TIP what's the best*".

When the pandemic just started, some lecturers already expected that not only temporary or instant solutions are needed, they were already looking forward for the long-term perspective if the pandemic continues during the next academic year (systematic type of organizational resilience). Respondent 7: "*I immediately knew that this was something for the longer term*".

How lecturers reacted in both universities is apparently a sample of organizational resilience that they demonstrated in the times of pandemic. With rather limited resources in place, every respondent tried to facilitate the learning process and to make interruption in the studies as short as possible. The university at large including management team supported the lecturers in their willingness to conduct online lectures and to transform the learning process but direct instructions and clear vision was not provided immediately. Respondent 3: "It was really cloudy", "*And then from the October we have the clear rules and tools and trainings. And it was all prepared*".

Some lecturers also used current situation as an opportunity to develop distance learning and new ways of teaching online. They were working through three stages of digital resilience respond-recover-reimagine (Figure 2)

Respondent 6: "*I relatively early realized that this can also be an opportunity also to move things forward because I've always been someone who likes to try out things who wanted to bring, you know, blended learning and digitalization forward*".

Respondent 8: "*In the beginning, what I really liked, that in the department they made an overview of all the different programs that were available and of the trainings available and it also really helped a lot*".

Even those lecturers who were not much familiar with the online learning before the pandemic were ambitious in testing different software and learning it.

Respondent 3: "*So you know a new challenge just for me, it was quite interesting to learn how it all works, what interesting options I can give to students there?*".

In this way lecturers proved to be digitally resilient, they were not afraid to try out new software, to get new knowledge and to dive into unknown. Their willingness to learn the software offered by the university and to adapt the course to new online setting helped them to develop new ways to recover operational capability in short term and long-term perspective.

Chapter 5. Conclusion and outlook

This concluding chapter 5 of the thesis summarizes everything relevant for the answer to the research question. In chapter 4 all the findings in terms of organizational problems, developed solutions and future perspective were presented. In this chapter the main part is a conclusion (paragraph 5.1). Limitations of the research are outlined in paragraph 5.2, practical implications are presented in paragraph 5.3 and implications for the future research - in paragraph 5.4. The concluding paragraph 5.5 is devoted to reflexivity.

5.1 Conclusion

The research question was: *How did lecturers at universities respond to organizational problems they experienced when facilitating learning process in times of pandemic?* stated in paragraph 1.2. consists of three components: first, to identify organizational problems that lecturers of the universities experienced after the outbreak of pandemic when facilitating distance learning process (paragraph 5.1.1); second, to present solutions to these problems (paragraph 5.1.2), and third, to outline future perspectives of distance learning (paragraph 5.1.3).

5.1.1 Organizational problems

The potential problems were categorized in the theoretical chapter (paragraph 2.3) and then compared to what respondents in two universities witnessed (paragraph 4.14.). The problems encountered in practice were described in detail in paragraph 4.2. A special paragraph was devoted to a comparison of the problems in both universities (paragraph 4.2.11). There were certain similarities in problems at the operational level: how to organize online classes after the start of pandemic, what will be the most convenient software for work, how to ensure the same level of interaction and communication as during the offline classes. There were also differences in organizational problems. All respondents in Warsaw mentioned cheating as a problem that decreases the quality of assessment process and quality of education in the university. It is the problem that difficult to detect and difficult to combat especially in online setting. The main problem that was mentioned by the respondents of Radboud university is bureaucracy in decision making process. It was also difficult for the lecturers to combat bureaucracy or to find an optimal solution when they couldn't agree with the management decision. In certain situations, that were mentioned during the interviews, the lecturers of Radboud felt powerless to change something.

The categorization of problems and their solutions are presented in a separate file to the thesis, similarities and differences in problems that lecturers in both universities encountered are in Appendix 6 and 7.

5.1.2 Solutions to organizational problems

The results of this study indicate that lecturers indeed faced certain organizational problems which they mentioned during the interviews and which influenced the facilitation of distance learning process. Nevertheless, they also managed to develop certain solutions to these problems when and wherever it was possible, some solutions to the organizational problems were developed on their own and some were supported or advised by the university management team. Solutions to the problems were not categorized in the theoretical chapter (paragraph 2.4). They were presented in paragraph 4.3 based on the information provided during interviews. A special paragraph was devoted to comparison in the solutions developed by lecturers in both universities (paragraph 4.3.11).

What was common for the lecturers in both universities is that they did not wait for the instructions from the university and started to look for possible solutions to the problems from the first day of pandemic. They demonstrated personal initiative and started preparation to the online lessons long before compulsory online education was announced by the management of the university. Lecturers in the universities had different experience in terms of online lecturing. Nevertheless, all of them tested different software and decided on advantages or disadvantages from the practical point of view. Generally, the transition to online went easier for more experienced and more technically savvy lecturers. Those lecturers who were less experienced and needed extra learning could gain from consultations with peers within department or from the trainings organized by the university.

In this study it is also highlighted the interconnection between organizational problems, solutions and organizational and digital resilience (paragraph 4.5).
The categorization of problems and their solutions are presented in a separate file to the thesis, similarities and differences in solutions to the problems that lecturers in both universities experienced are in Appendix 8 and 9.
What was also similar in solutions is that lecturers in both universities wanted to compensate for the lack of communication by organizing interactive breaks, discussion in breakout rooms or gamification during online classes. They wanted to reach the same level of interaction that they had before in offline classes.

The main difference in terms of solutions to the problems was in financing. Radboud university provided better financing for the lecturers to facilitate distance learning process. They ensured TIP and student's assistant support, invested into organizing working place for the lecturers to work from home, provided laptops and required software for lecturing from home. On the contrary, lecturers in Warsaw in most cases used their own equipment and relied on free trial software or software with limited functionality. In some cases, lecturers were also buying software they needed for work on their own.

5.1.3 Future perspective of distance learning

As for the future perspective for distance learning, the main idea all respondents agree upon is that learning process should be offline wherever possible with distance learning advantages being used to enhance the on-site learning. It is impossible that distance learning process can fully replace face-to-face learning without quality of education, interaction between peers and students' academic performance of the students being infringed. The same ideas are supported by other researchers. "*Interaction in distance education is not sufficient*" (Sahin and Shelley, 2020, p.116). Most of the respondents, that were asked in both universities, support the idea of blended or hybrid learning -combination of distance learning with on-site learning. They also stressed the advantages of interconnection of online and offline learning models in the learning process after the end of pandemic (paragraph 4.4).

5.1.4 Back to the research question

Taking above mentioned into account, the research question: *How did lecturers at universities respond to organizational problems they experienced when facilitating learning process in times of pandemic?* announced in paragraph 1.2 can be considered partially answered. Firstly, the analysis of organizational problems that lecturers experienced in Radboud university and the Warsaw university was presented (paragraph 4.2). Secondly, the solutions to the problems as a way to respond to organizational problems after the start of pandemic were outlined (paragraph 4.3). Thirdly, special attention was paid to the future perspective of distance learning (paragraph 4.4) and the interconnection of the organizational problems, developed solutions and organizational and digital resilience (paragraph 4.5). Therefore, the research question is considered to be partially answered in this thesis. Taken together, these results also suggest that the objective of the thesis was achieved.

It was possible to gain insight into what problems lecturers in universities encountered when (further) implementing online education during pandemic and what solutions to these problems they eventually developed.

The research question is considered to be partially answered due to the following reasons: limitations mentioned below in paragraph 5.2 and also due to the fact that the list of organizational problems and solutions indicated in this thesis is not exhaustive, can be updated based on information and experience from the other respondents in the same universities.

5.2. Limitations

The research has a number of limitations that are presented below. Some limitations are related to the type of qualitative analysis that was preferred – template analysis. Template analysis, as it was mentioned in paragraph 3.2, doesn't have fixed position in induction-deduction balance, there are also no strict number of a priori themes derived from theory or exact number of interviews that should be performed, it all depends on the research question and the scope of the research. That's why some researchers consider this type of analysis rather flexible (King and Brooks, 2017). In other words, there is no such thing as "perfect template analysis". The only factor that is indeed important is to follow the steps of template analysis (paragraph 3.3). Within the scope of this research, it was conducted eight interviews and derived four main themes with "organizational problems" as the most relevant one for the research question. Different number of interviews or the same number of interviews but different respondents would possibly lead to different results. As unit of analysis (paragraph 3.2) these two universities (Radboud university, the University of Warsaw) were preferred. Therefore, results of this research are applicable in terms of these two universities and research itself has limited transferability.

There are also limits with regard of timeframe. The research was aimed at familiarization with the problems and solutions to these problems that lecturers experienced at the beginning of the pandemic (both in Poland and the Netherlands it was middle of March 2020). It is anticipated that the lecturers had different or new problems along the way (in the process of writing this thesis pandemic still continued in waves). Comparing the organizational problems at the beginning of the pandemic and in two years afterwards would provide different results but it falls outside the scope of this paper.

Another limitation is that data collection is based only on the interviews. Observations and analysis of the documents would ensure triangulation, enrich the research and bring different results but it was not possible due to pandemic travel restrictions at the time when the

interviews and analysis were done. The problematic part and analysis could be done in more detail and with more quotes from the respondents, illustrating the situation, but due to the limited space of the thesis some parts in analysis were shortened afterwards to fit into the limit of pages that required for thesis.

5.3 Practical implications

As for practical implications, since the nature of this research is more descriptive and exploratory, it was not the goal of this research to give practical recommendations to the participating respondents. At the same time solutions that respondents developed when adapting to online learning (paragraph 4.3) might be helpful for other practitioners and lecturers in the universities. These solutions were developed based on individual experience of the respondents and proved to be effective for the future. They are the following:

1) provide livestreaming of the lectures whenever possible and enable chat function in the process of livestreaming leaving the possibility for students to ask the questions simultaneously. The lecturer should also encourage students to ask question during the lecture. Respondent 6: "*Probably 95% are happy you asked the question because they are struggling with the same thing*". At the same time let students who can't attend online lecture possibility to watch recorded lecture. Even those students who attended virtual lecture online can benefit from the recording by watching lecture or some parts of it again before the exam or when something still remains unclear.

2) Imbed interactive assignments for students into the lecture. These interactive exercises help students to be involved in the learning process, to stay focused on what the lecturer is saying and presenting. This interactive engagement also enables students to remember better and to draw their own conclusions. Respondent 3: "*I used gamification in a classroom, where we are covering things like Kahoot, Quizlet and Mentimeter that are making class more interesting*".

3) Monitor regularly how students feel about the lecturing, assignments, exams; ask for their feedback. It is extremely important in the time of offline classes but it also becomes essential in the time of online learning. Receiving constructive feedback helps the lecturer to draw the final conclusions, to make the changes and to improve online learning process. It also gives the idea of what students liked and with what they struggled. Respondent 1: "*And students complained at the end. They told me in feedback that it was simply too much for such a short course*".

5.4. Implications for future research

Regarding possible future research, it is necessary to mention several directions. This research was not concentrated on giving practical recommendations to the lecturers of both universities. But it is the field that can be further developed. What are the practical recommendations that can be adopted by the respondents in both universities in order to overcome problems that they experienced? These recommendations can be based on the practical experience from the other European universities or derived from theory. It is also possible to make a list of recommendations what is needed for the lecturers and universities to stay organizationally and digitally resilient when facing possible disruption in the normal working process like for example pandemic or war.

This research can also be developed by including respondents from the other European universities or from one of the Asian universities. Initially, the plan suggested in the research proposal was to compare Radboud university (European) with Hanoi National University of Education (HNUE) (Asian). They could possibly have different solutions to the same problems due to cultural and geographical differences.

Further quantitative research in the same field could probably empirically prove the suggestion stressed by respondents of this research that distance learning can't fully replace offline learning and can be used only in case of emergency and necessity.

Certain patterns in the categorized problems and developed solutions were detected (paragraph 4.2.11, 4.3.11) but they can also be developed. The categorization of the organizational problems presented in this research could also serve the future research in exploring underlying patterns. Organizational problems originally were derived from theory (deduction) but developed solutions to the problems were not reflected in the theory and were presented based on the information provided by the respondents (abduction). Deductive approach in categorizing solutions would enrich the research but was not applied in this research in respect of developed solutions.

5.5. Reflexivity

As it is advised by Symon and Cassel in order to cover reflexivity part of the research these questions should be answered: "*What is the motivation for undertaking the research? What underlying assumptions I'm bringing to it? How am I connected to the research theoretically, experientially, emotionally*?" (Symon and Cassel, 2012, p.78)

During study period in Radboud, I always experienced learning process from the students' perspective. However, I was also interested in how the learning process is conducted from the

point of view of the lecturer. It was the reason I opted for this topic from the list of topics available for the research. I didn't know at that moment what challenges I would face very soon. The topic was not that simple and I also had difficulties in structuring thesis, in finding relevant theory, connecting theory with practice and in finding the university and lecturers for the interviews. When in case of Radboud the choice of the university seemed obvious, the other university was very hard to find. I made my efforts to reach as far as Vietnam, agreeing for interviews and writing my research proposal based on the information provided by Hanoi National University of Education (HNUE) in Vietnam. But eventually it didn't work out, bringing me to the starting point again, to the point of finding the university for conducting research. Nevertheless, I kept on trying and after visiting the University of Warsaw on the 27th of September 2021, I finally established necessary contacts and agreed for the interviews with the lecturers of this university and later on in October 2021 conducted interviews with the respondents. I also think that for me performing interviews was the most significant part of thesis writing process. It was both exciting, challenging and demanding part. Exciting - because this time I was not questioned as a student but created and asked questions by myself. Every time I started the interview process, I was only partially aware where it would lead me. Challenging -because I was not much experienced in conducting interview and demanding because of the conclusions that should have been derived later on. It was one and only chance for me to get information I needed. Every interview and every lecturer, I was talking to, is unique in their way of speaking, rendering the meanings and answering the questions, I felt that in such situation the role of the researcher is crucial and I was trying to lead the interview, making it a live process with additional questions asked along the way. I'm grateful to every interviewee, whose names I can't reveal, firstly, because they agreed to participate on a voluntary basis, were honest and sincere; secondly, that they agreed to do interview in English and saved me from the translation; and thirdly, because they found time and possibility to talk to me.

I started my studies in Radboud in 2019 with pre-masters' degree when education was completely offline. And then I witnessed switch to online education in March 2020 due to the pandemic. When I was picking the topic of the thesis in December 2021, I was almost sure that pandemic is almost over with vaccination on the way, saving mankind from spreading the virus and bringing to the end of pandemic. Now, one year later, I'm less sure about the end of the pandemic and it seems that my topic of the learning process in times of pandemic is still the order of the day. It is also proved by the respondents, saying that the research question and the topic in general is still relevant. Everyone was also interested in the results of the research.

The pandemic influenced my study process and process of thesis writing as well with all my ups and downs. But since the focus of this thesis was on the answers of the lecturers, who were in the same pandemic situation as me but with different duties and responsibilities, all my experiences were left behind. During every interview I was focused on the problems that lectures encountered and also on the solutions to the problems, trying to visualize the whole situation through every respondent's lenses. This research and discussions we had during the interviews arose even more respect to the lecturers who were facing challenges after the start of pandemic and also showed resilience no matter what.

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Publications.

Appendices

Appendix 1

The University of Warsaw. Faculty of Management (Warsaw, Poland)*

* No copyright infringement, photo made by Kolomiiets Iryna

Appendix 2

Radboud University. Het Academiegebouw Berchmanianum (Nijmegen, the Netherlands) *

* No copyright infringement, photo made by Kolomiiets Iryna

Appendix 3

Initial template

Main theme	Defining scope of theme
1.Distance learning	1.1. Different types of distance learning before pandemic: • E-learning • M-learning • Online learning • Blended learning 1.2. Different types of distance learning after pandemic: • E-learning • M-learning • Online learning • Blended learning
2. Organizational resilience	2.1. Episodic change: • Irregular interruption • Changes in the working process • Organizational structure transformation 2.2 Uncertainty: • Unpredictability of the environment • Confusion about the future 2.3. Complexity: • Many interrelated factors • Diversity of external factors 2.4. Time frame • Immediate reaction • Purposeful redesign • Longtime oversight
3. Digital resilience	3.1. Digital response: • Temporary switch to online • Online training 3.2. Digital recovery: • Technological changes • Re think of learning models 3.3. Digital adaptation: • Promotion of technologically enabled teaching • Development of sustainable advantage
4.Organizational problems	4.1. Categorization of the problems based on theory (10 categorized problems). 4.2. Solution of the problems. 4.3. Interconnection of problems and resilience. 4.4. Future perspective.

Appendix 4

Interview protocol

Introduction part

Good afternoon. My name is Kolomiiets Iryna and I'm a Master's student of School of Management in Radboud University (the Netherlands).

Thank you for devoting your time to talk with me today. The purpose of this interview is to get insight of the problems that lecturers in universities experience (experienced) when facilitating distance learning process in the times of pandemic and how they responded to those problems. Currently I'm in process of doing my research in two universities Radboud University (the Netherlands) and Hanoi National University of Education (Vietnam) and your input will be very much appreciated. This interview will take approximately 45 -60 minutes. It will be used solely for preparing my Master's thesis. I can share with you results of the research and interview transcript upon request.

Consent for recording.

Before we start, I want to obtain your formal consent for recording this interview. It is necessary for transcribing and analysis later on. I assure you that all the answers to the questions will remain confidential and I will compile thesis report which will contain quotes from the interview without reference to the individuals. *(After obtaining consent from the interviewee, recording starts).*

Questions.

Basic questions.

Q1. What is your position in the University?

Q2. How long do you work in the University?

Q3. What subjects do you teach?

Main questions.

Q4. Did you have as a lecturer previous (before pandemic) experience with distance learning?

(In case the answer of the respondent is 'yes", then goes follow up questions at the end of the interview. In case if the answer of the respondent is "no" – move to the next question).

Q5. It brings us to the start of pandemic I want to discuss. Do you remember when university switched from offline to distance learning at the start of pandemic? What were your feelings/emotions when you heard the news that from now on no more face-to-face education is possible? (*This one and all further questions are related to the period after the start of pandemic in the Netherlands and/or Vietnam*).

Q6. After the start of pandemic what kind of distance learning (from the below mentioned) did you use?

Kinds of distance learning:

a) e-Learning - learning through electronic media or supported by electronic resources such as tapes, CDs, DVDs whether in class or remotely;
b) m-Learning – a sub-set of e-learning using mobile phones or tablets without permanent network connection;
c) online learning – remote learning using the Web as an intermediary;
d) blended learning - combines traditional face-to-face teaching with e-learning"

(This question is asked in order to establish with what kind of distance learning interviewee had experience after the start of pandemic and switching to distance learning: e-learning, m-learning, online learning or blended learning).

Q7. I'm interested in organizational problems lecturers of universities experienced. Tell me what problems you experienced after switching to distance learning?

(Here it is expected that interviewee will mention and describe the problems he/she experienced. Some follow up or clarifying questions may follow depending on the answer. If respondent has difficulty with the answer, the list of ten expected problems from paragraph 2.3 of the research proposal can be mentioned).

Q8. How did you respond to all the problems that you encountered?

Q9. Did you have problems related to technical support/digital sphere: for example, weak internet connection, low internet speed and capacity, lack of computers and other equipment necessary for conducting teaching process, lack of necessary software and licenses? *In case if the answer of the respondent is 'yes", then goes follow up question Q9a. In case if the answer of the respondent is "no" – move to the next question Q10.*

Q9a. How did you respond to the problems related to technical support/digital sphere that you encountered? *(This question is asked if it is not touched upon in answers to the previous questions)*

Q10. Did you have problems related to the assessment of students /examinations?

(In case if the answer of the respondent is 'yes'', then goes follow up question Q10a. In case if the answer of the respondent is "no" – move to the next question Q11.This question is asked if it is not touched upon in the answers to the previous questions)

Q10a. How did you respond to the problems related to the assessment of students/examinations that were mentioned above?

Q11. Do you remember any problems that couldn't be solved quickly due to the lack of sufficient financing?

Q12. Let me return back to distance learning before pandemic. You said that you had previous experience with online learning. Can you tell me what kind of experience it was?

Q12a. What amount of time approximately you were doing online lecturing when comparing to offline lecturing (in percentage or proportion)?

Q12b. How many years/months of experience in distance learning did you have (before pandemic)?

Q13. Do you have anything that you can add to the topic of distance learning in times of pandemic, problems that you as a lecturer experienced and how you coped with them?

Closing part.

We came to the end of our interview. Thank you for participation (*Stop with recording*). If you have any questions, you may ask them now. If you need a copy of your transcribed interview, I can send it to the electronic address you provide.

Appendix 5

Final template

Main theme	Defining scope of theme

1.**Distance learning**	1.1. **Different types of distance learning before pandemic**:
	    1.1.1 E-learning
	    1.1.2 M-learning
	    1.1.3 Online learning
	    1.1.4 Blended learning
	    1.1.5 Asynchronous
	    1.1.6 Synchronous
	1.2. **Different types of distance learning after pandemic:**
	    1.2.1 E-learning
	    1.2.2 1.1M-learning
	    1.2.3 Online learning
	    1.2.4 Blended learning
	    1.2.5 Asynchronous
	    1.2.6 Synchronous

2. Organizational resilience	**2.1. Episodic change:**
	    2.1.1 Irregular interruption
	    2.1.2 Changes in the working process
	    2.1.3 Organizational structure transformation
	2.2. Uncertainty:
	    2.2.1 Unpredictability of the environment and future perspectives
	2.3. Complexity:
	    2.3.1 Diversity of interrelated factors
	2.4. Time frame
	    2.4.1 Immediate reaction
	    2.4.2 Purposeful redesign
	    2.4.3 Longtime oversight

3. Digital resilience	**3.1. Digital response:**
	    3.1.1 Temporary switch to online
	    3.1.2 Online training
	3.2. Digital recovery:
	    3.2.1 Re think of learning models
	3.3. Digital adaptation:
	    3.3.1 Promotion of technologically enabled teaching

4.Organizational problems	**4.1. Categorization of the problems:**
	    4.1.1 Organizational problems
	    4.1.2 Digital problems
	    4.1.3 Problems related to study process
	    4.1.4 Problems related to assessment process
	    4.1.5 Problems related to the quality of online education
	    4.1.6 Problems related to the lack of sufficient financing
	    4.1.7 Problems related to lecturers' experience in online distance learning
	    4.1.8 Problems related to students' academic performance and well being
	    4.1.9. Problems related to balancing work and family
	    4.1.10 Problems related to the mental well-being of the lecturers.

	4.2. Solutions of the problems.
	    4.2.1 Solutions to organizational problems
	    4.2.2 Solutions to digital problems
	    4.2.3 Solutions to the problems related to study process
	    4.2.4 Solutions to the problems related to assessment process
	    4.2.5 Solutions to the problems related to the quality of online education
	    4.2.6 Solutions to the problems related to the lack of sufficient financing
	    4.2.7 Solutions to the problems related to lecturers' experience in online distance learning
	    4.2.8 Solutions to the problems related to students' academic performance and well-being
	    4.2.9. Solutions to the problems related to balancing work and family
	    4.2.10 Solutions to the problems related to the mental well-being of the lecturers
	4.3. Interconnection of problems, solutions and resilience.
	4.4. Future perspective.

Appendix 6

	Table of similarities in problems that lecturers experienced in the University of Warsaw and Radboud university	
	Categorization of the problems	Similarities
1	Organisational problems	Organizing online classes after the start of the pandemic
2	Digital problems	Choosing the most convenient software for work, internet connection problems
3	Problems related to study process	How to ensure the same level of interaction and communication as in offline classes
4	Problems related to assessment process	No communalities detected
5	Problems related to the quality of online education	Lecturers in both universities agreed that quality of the lecturing remained the same. At the same time average grade of the students in both universities increased during online learning and it was not always due to more learning
6	Problems related to the lack of sufficient financing	No communalities
7	Problems related to lecturers' experience in online distance learning	Some lecturers had previous experience with distance learning and some did not have at all. For lecturers with zero online teaching experience, it was the most challenging situation
8	Problems related to students' academic performance and well-being	Students in both universities faced the same problems: loneliness, lack of motivation, not enough social activities. Lecturers in both universities considered students' academic performance and well-being as a crucial factor in online learning process.
9	Problems related to balancing work and family	Lecturers in both universities had the same problems in combining taking care of children with organizing working routine in the same work from home space.
10	Problems related to the mental well-being of the lecturers	Lecturers in both universities admitted that working life after the start of pandemic changed. Almost all lecturers started to work longer hours than before.

Appendix 7

	Categorization of the problems	Differences	
		Radboud university	The Warsaw University
	Table of differences in problems that lecturers experienced in the University of Warsaw and Radboud university		
1	Organisational problems	Bureaucracy and inconsistency in decision-making process at the management level	Organizing working space at home
2	Digital problems	Streaming lectures for a large group of students	Trying out different new software
3	Problems related to study process	Difficulty of managing help function for many breakout rooms in Zoom simultaneously.	Increase of workload due to full switch to online lectures
4	Problems related to assessment process	Implementing Proctorio and problems related to privacy breach	High level of cheating and difficulty to control it during assessment process
5	Problems related to the quality of online education	Open book exams in comparison with proctored exams had worse quality	Lack of motivation and possibility of cheating at the exams made it possible for some students to let go without much learning
6	Problems related to the lack of sufficient financing	No problems related to financing	Lecturers mentioned that they were using their own equipment and sometimes they were buying software that was needed for work
7	Problems related to lecturers' experience in online distance learning	No differences	
8	Problems related to students' academic performance and well-being	No differences	

9	Problems related to balancing work and family	No differences
10	Problems related to the mental well-being of the lecturers	No differences

Appendix 8

	Categorization of the problems	Similarities
	Table of similarities in solutions of the problems that lecturers experienced in the University of Warsaw and Radboud university	
1	Organisational problems	Lecturers agreed that live streamed lectures are more beneficial in terms of interaction than prerecorded ones. They did livestream of the lectures from the university when it was not possible from home
2	Digital problems	Zoom was agreed to be the main platform for conducting online lectures.
3	Problems related to study process	Interaction during lectures was ensured by using different interactive software.
4	Problems related to assessment process	No communalities
5	Problems related to the quality of online education	No communalities
6	Problems related to the lack of sufficient financing	No communalities
7	Problems related to lecturers' experience in online distance learning	Lecturers tested new software and also attended online trainings organized by universities when needed.
8	Problems related to students' academic performance and well-being	Lecturers tried to organize discussion between peers in breakout rooms or chats.
9	Problems related to balancing work and family	Lecturers found the same solutions: attending university for lecturing in formal setting, isolating in a separate room to conduct lecture from home, asking for help with taking care of children from partners
10	Problems related to the mental well-being of the lecturers	Lecturers tried to have their work done sometimes without waiting for extra support, sometimes sacrificing their own free time.

Appendix 9

	Categorization of the problems	Differences	
		Radboud university	The Warsaw University
1	Organisational problems	Lecturers got support from students' assistance and technical assistance teams. Regular meetings of the lecturers to discuss organisational problems that occurred.	Set of regulations developed in the university helped lecturers to organize their study process better, it was guide of rules and obligations both for students and lecturers.
2	Digital problems	Students' assistants provided help letting lecturers to concentrate on the lecturing itself. YouTube was a temporary solution for organizing lectures for big groups of students.	Using their own hotspot in case of unstable internet connection during online classes.
3	Problems related to study process	Engagement of students via chat functions, discussion forums, breakout rooms.	Engagement of students via interactive platforms (Slido, Mentimeter, Jamboard, Kahoot). Some interactive software they were buying on their own. Lecturers encouraged students to have their cameras on in order to establish eye contact.
4	Problems related to assessment process	The necessity of proctored exams needed to be "defended". Educational campaign and provisions as a way to educate students.	Preventing cheating by limiting time, making random set of questions, disabling returning back to the previous question etc.

Table of differences in solutions of the problems that lecturers experienced in the University of Warsaw and Radboud university

5	Problems related to the quality of online education	Guiding document that helped lecturers to ensure the quality of the exam.	No possibility to implement proctored exam decreased the quality of exams. No definite solution was found to combat cheating and ensure high quality of the exam.
6	Problems related to the lack of sufficient financing	No problems related to financing	Lecturers mentioned that they were using their own equipment and sometimes they were buying software that was needed for work
7	Problems related to lecturers' experience in online distance learning	No differences	
8	Problems related to students' academic performance and well-being	Lecturers stayed after class to make themselves available for any questions or problems that students might experience	Lecturers created surveys to get students' opinion on how they feel on certain study issues and what can be improved. Lecturers used gamification aimed at students to stay focused, engaged and involved in the study process
9	Problems related to balancing work and family	No differences	
10	Problems related to the mental well-being of the lecturers	Having regular online discussions with colleagues. Having regular breaks, switching tasks in order to prevent burn out	No particular solutions were mentioned