THE COVID PANDEMIC: TRANSFORMATION OF UIA's PEDAGOGY- A CASE STUDY OF ORGANIZATIONAL CHALLENGES IN HIGHER EDUCATION

BANANI DEBNATH

SUPERVISOR
ODDGEIR TVEITEN

UNIVERSITY OF AGDER, 2021

FACULTY OF SOCIAL SCIENCES

COURSE PROGRAM- MASTERS IN GLOBAL DEVELOPMENT AND PLANNING

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This master thesis represents the case study of University of Agder's (UiA's) digital transformation during COVID-19 outbreak, and explores the factors associated with the digital shift in terms of development and quality education. The research was conducted in the midst of a pandemic era, between December 2020 to April 2021 at the Department of Social Sciences in the University of Agder, Norway. Foremost, I would like to offer gratitude to my supervisor, Professor Oddgeir Tveiten for his constant motivation, expertise suggestions, comments and perfect support during the entire thesis process. Additionally, I would like to thank my lecturer and Course Coordinator, Vito Laterza for his constructive advice, feedback and throughout the study semesters. I would also like to extend my thankfulness to all the professors, tutors and staff members from the study program of Masters in Global Planning and Development who provided their regular assistance in the academic year 2019-2021. Finally, my special appreciation to all the interviewees for sharing their proficient knowledge-inputs in my empirical study, and also UiA's administration for facilitating technology and managing student's wellness during the COVID-19. I also wish to thank my families, friends and colleagues for their inspiration and unconditional support in the research process.

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EXECUTIVE SUMMARY

In the 2020, the 'World Learning Summit (WLS)' addressed the challenges for higher education posed by the COVID 19 pandemic. An international conference gathering educators, entrepreneurs, managers and researchers from a wide range of countries, discussed the "reset" of higher education. The conference did so with a positive emphasis. This article represented the cross-sectional analysis of UiA's transformation during the pandemic, through virtual interviews within prominent departments of UIA. The scope of the study is to understand the digital transformation of higher education within Norway, through understanding the factors affecting the successful transition.

The study result showed optimized and vigilant digital growth in Higher Education, to be integrated with digital reforms in academic protocol. Fundamentally, understanding the newly emerged digital culture in higher education in corporation with socio-cultural aspect. Most significantly, how the whole change management in higher education during COVID-19 inspires dependence on digital tools. Also, it compelled the universities to look afar the pedagogical boundaries which included data and personal security; academic assessment and learning criteria; change in working environment; intervention of digital media and communication; and elevation of digital tools. Whereas, the digital transformation lacks social inclusion, and limitation in internationalization due to emerging digital divide phenomena, within developed and developing nations. In conclusion, the change is appeared to be prevalent and durable. To evolve in a predetermined socio-cultural setting of higher education, yet, it is mandatory to take the first step towards digital transformation. At the end, the article represented various opportunities for the universities to improve on a digital scale, and to accomplish quality based higher education from the development perspective.

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1: HIGHER EDUCATION AND DIGITALIZATION

1.1. Introduction

Since March 2020 when the corona crisis lock-down happened, the challenge and understanding of "digitalization of the higher education" has evolved globally, and become a key debate. The digital shift in the education system brought up the substantial shift in the learning protocol. It is undeniable that transformation has its consequences, and hence comprehensive learning of the elements associated with the digital change was appropriate. Firstly, to understand what the change appeared to be in higher education? Whether the alleged digital transformation was the temporary solution in accordance with the pandemic? Moreover, if digitalization is the future of higher education, then to what level of integration? How are societies going to cope up with the changes, what impact has it on the stakeholders? In simple words, what does the digital shift look like? As it would reflect shifts in the existing jobs, employment system, industrial outlook, current consumer behaviour and business models. This study also validated learning protocols with developmental factors in relation with higher education. Alternatively, reconstruction or customizing the ICT based educational system, based on their development capabilities varied from nation to nation which was evident during the corona era. In one way, the pandemic represented the digital gains but also recognized the detriments. As there were many inter-related factors and enormous possibilities emerged in terms of digitalization in the education sector.

In the year 2015, the participants of the United Nations declared, '17 Sustainable Development Goals (SDGs)' which is to construct harmonized and affluent societies by the year 2030. It included both developed and developing nations into its agenda. Their ambitions were decided; "No Poverty; Zero Hunger; Good Health and Well-being; Quality Education; Gender Equality; Clean Water and Sanitation; Affordable and Clean Energy; Decent Work and Economic Growth; Industry, Innovation and Infrastructure; Reduced Inequalities; Sustainable cities and Communities; Responsible Consumption and Production; Climate Action; Life Below Water; Life on Land; Peace Justice and Strong Institutions; and Partnerships for the Goals". (SDG, n.d.).

Therefore, this transition due to COVID-19 was stimulating to analyse and understand the impact of digitalization, and its significance in diverse categories. In order to achieve quality education which is referred to as the 'Sustainable Development Goal 4 (SDG 4)'- quality-education.

Quality education is also intersected with the eradication of poverty and inequality by achieving social well-being, additionally contributes for the economic growth of a country. In other words, social empowerment is dependent on removing poverty through providing quality education. According to Heeks (2014) ICT is an evolving contributor in the nation's growth, constituting employment and development of human capital. Author outlined the connection of removing poverty with three aspects; 'Economic, Livelihoods and Capabilities' (Heeks, 2014: 24) which is deeply integrated with quality-education prospectus. As human-being learned to play vivid roles to be a developer, producer, employer, employee and customer in a particular community through quality education (Heeks, 2014: 22). Hence, any change in the prototype of education would impact the entire circle of businesses, economic activity and social model. Relatively, Keller (2001) described the population growth and scarcity in income generation, thus it was stipulated for the developing and developed economies, to aim for advancing essential skills through suitable educational and vocational training. Why was it an alarming situation? As the author stated that in the U.S., the retirement age is shortened due to the absence of a competent labour force (ibid: 221). On the other hand, globalization (ibid: 222) phenomena led the immigrants to reposition themselves with adequate professional skills. Most significantly, inequality in perceiving higher education and following outcomes of higher education varied in terms of global north-south division (ibid, 2001). Meanwhile, development status also contributed to the certainty of inequality and quality-education. Adequate globalization of higher education prepares for economic development. Subsequently, any transition in higher education in the form of digital learning and teaching would impact the vocational skills of the society. In relation, it resulted in streaming of transitions in the job market and businesses. However, due to digital transition from COVID-19 university's curricula, teaching and learning concepts were challenged. Thus, it became eminent to map the transformation through assessing the digital endorsement. Moreover, positioning the quality undertaking of the higher education at prior within sustainable format.

Fundamental Research Objective

This study was built on the pre- COVID-19 anticipation of digital shift in higher education which was conventional due to predetermined notions, wherein digital transition was slow. Previously, the digitization was interpreted as ICT enriched innovation in the education sector in the form of digital tools. However, the outbreak of corona implied the loopholes in the traditional outlook towards digital based studies, and also represented the emergency and fast adaptation towards digitalization. Therefore, my primary aim was to search the criteria of transition in higher education. Furthermore, identification and determination of the associated actors, with the factors associated with each other. The secondary aim of the research was to anticipate, and analyse the options for major shifts in higher education; and lastly to find out the possibilities of outcome in this conversion process.

The highlights of the chapters represented the dispositions, and their outcomes in relation with the research questions. Chapter 1, consisted of a background study of obscure digital shifts in higher education due to COVID-19, and its pre- and post-connotations. Besides, elaborated with the historical understanding of higher education in Norway. It was then related to the importance of one of the 'Sustainable Development Goals (SDGs)' which is quality-education. Moreover, the introduction to the case significance of University of Agder (UiA), and its relevance to the study is described. Alongside, the global scenario on higher education crisis due to the corona outbreak is indicated, with additional case illustrations from global north and global south. Under this chapter, the speculation of social inclusion is measured specifically, under the lenses of quality based Higher education. The chapter 2 explored the theoretical framework in relation to various stakeholders, and factors reasoning for their digital commit due to COVID-19. It signified varied concepts in relation to pedagogical importance; learning culture and structure, Massive Open Online Course (MOOCs) invasion, universities interventions in ICT, digital tools and security related concerns are widely discussed. In this study, it is deliberated to be the fundamental outcome of digital transformation in higher education.

Furthermore, chapter 3 embarked on the methodology of the case study, and criteria of case analysis clarified with the validity, while considering the limitations. Relatively, chapter 4 mentioned empirical cross-departmental case analysis of UiA. This part depicted the outcome

and analysis of qualitative-centric, semi-structured and cross-departmental interviews conducted at UiA. Finally, chapter 5 described the ultimate outcome of digital transformation, with various stakeholders in the context of potential Norwegian outlook due to corona. And in the context of digitalization in higher education, quality-education and development goals. At the end, the article is concluded with the upcoming scope of digital transformation in higher education in the post-pandemic era. With a new horizon for development narratives, while depicting the potential of further exponential studies in the near future. The next section briefed on the significant transformation in higher education occurred in Norway so far.

1.2. Narrative of Imperative Shifts in Higher Education in Norway

My primary focus of the study is Norway, over the years there has been substantial changes in the form of digital teaching and learning in higher education. In here I presumed that digitalization corona crisis may add detailed contextual understanding. As accordingly, Dysthe & Engelsen (2004: 239) proclaimed that the digital shift in Norway needed more exploration. Thus, for understanding the background of dynamics in Norwegian 'Higher Education Institutions' (HEIs)', it is significant to know the history of transitions that appeared in Norway's Higher Education until the Corona outbreak.

Higher education in Norway was inaugurated in the year 1813, with its foremost university led by the state (Hove, 1967: 192). State funded Norwegian universities were associated with a 'research council' to administer research activities, and to facilitate innovative growth (ibid: 214). Moreover, students were directed to gain field experiences with their respective studies. Traditionally, prioritization of research inquiry in teacher's education for proficient outcome in the school education, became the first step towards the changeover in the higher education sector. Meaningfully, the secondary level of education was also composed of professional training courses named 'Trade schools' with the courses like; 'farming, forestry, cooking, engineering, teaching, home science, artistic child care, maritime, fishery' (ibid: 193). and many more which were declared on assorted and active learning modules. As the name suggested, trade schools were operated to develop wide-ranged procedural and notional learning of the students from diversified sectors.

Precisely, the educational streaming took place in teachers' education which was at prior accomplished in two distinctive ways; firstly, through specific teaching colleges and secondarily through universities (Gram & Karlsen, 2004: 734). Since the traditional era, teaching units were indulged in conducting activities on respective disciplines, concerning the learning protocol and subject awareness (ibid). Relatively, the area of teacher's competency, teacher's learning and teaching procedure became eminent and transformed periodically. The former and latter modifications until 2003 in Norwegian educational regulations were highlighted by (ibid). In the year 1992, the theme of the reform was augmented with standardized and wide range of subjects. Then 6 years later, the restructuring and enhancement of curriculum took place. Later, between the period of 2000-2001, emphasis on meeting international standards in higher education with qualified and independent approach of the universities co-existed, which equitably featured to follow both government and state driven agenda (ibid: 735). This regulation was passed in the year 2002 and consequently, after a year internalization of higher education became the prominent speculation point. Wherein, teacher's competency was measured on a wider scale. In this criteria, assessment of all the stakeholders in a Norwegian education system were considered on an international level, however with time Norway evolved discreetly through compliant arrangement in Education culture (ibid: 736). And, there was more scope to seal the crack within the political and local incorporation.

Prior, the educational amendment in the form of subject structure, curriculum and measurement of teacher's competency became the fundamental component in higher education. Moreover, within a short span of time efficiency in assessing students' tasks were also considered for best outcomes. The beginning of intervention of technology in Norwegian higher education launched in 2004, in the form of a portfolio assessment scheme. This opted for a result-oriented pedagogic procedure to witness and evaluate students' performance digitally. According to the study conducted by (Dysthe & Engelsen, 2004: 241) the digital based portfolio assessment of students specified electronic space for data storage. It is run by ICT based techniques and structured navigation through digital medium. For instance, (CANVAS, n.d.) is a digital tool whose function is to manage the key areas of educational institutions including student's assessment.

In the year 2017, at least '13 Norwegian universities' successfully installed Canvas (Canvas-EMEA, 2017) for functioning in the 'formative and summative assessment' (Dysthe & Engelsen, 2004). The significant features and provisions of formative assessment involved the model of the study program; classification of associated activities, students-teachers learning and teaching procedures, feedback based communication, and at the end reflection opportunity for the students. While summative assessment is the consequent consideration of the overall evaluation process and student's reflection, directing them for new learning possibilities (ibid: 241-243).

Seemingly, in order to achieve the quality-reform and international standards, the first technical invasion occurred as a protocol for better assessment of examinations, and Canvas tool depicted the probability to counter timelessness, speediness and simplistic approach in day to day educational activities. With this exclusive approach towards digitalization, it made the availability of knowledge and knowledge-sharing at the fingertips for everyone. Additionally, who can access the internet has become the crucial standard for knowledge accessibility. Further, digitalization represented scope for futuristic possibility of development in the educational sector. Since 2012, the digitalization agenda scooped up, the establishment of University of Agder (UiA) notified to become a digital institution. In order to understand the transition from pre- corona times to the existing time period of the pandemic, it is vital to understand the ideology of digitalization in higher education at the beginning which is mentioned in the forthcoming section.

1.3. Pre-COVID Conception and Impact of COVID in Higher Education

Teaching and Learning are two fundamental features of quality education, and according to Swan (2001) it was learning connexion, within the learners and the online education archetype. The coherent digital courses required prioritizing the academic model, to blend in the criteria of interactivity between the knowledge-providers and the receiver. To amplify the qualified tuning of learning and teaching experience, it was potential to consider the standard expectation from both the parties. As a matter of fact, the unpredictability of digital classrooms and addressing of large scale online audiences, were the general concerns depicted by (Neuhauser, 2002 & Swan, 2001) respectively.

Evidently, the reliability and inclination on traditional setup i.e. Face-to-Face (FTF)' (ibid) classroom was the foremost choice of the peers and the teachers.

Additionally, in the perspective of diversity of learners, the academic expectations and lack of accessibility treated digital based learning as an alternative. In a way, the digital option kept the students intact with their education, depending on the circumstances of their economic and social surroundings, as some learners also opted for digital based collaborative education (Swan 2001). Although, digital innovation in the education sector instigated the shift in pedagogical models across the globe, it also exemplified switching of teaching approaches and learner's interpretational capabilities. It appeared to be, technical based communication and collaboration which was proficient in bringing together 'synchronous and asynchronous' setting of learnings (Beldarrain, 2006: 140). The author inferred that the latitude of technology spread would be stimulating for the universities and educators, also seemed to be demanding innovation in the education sector. (ibid: 150).

On a positive note, the global connectivity through digital networks was appreciated which simplified collaborative learning and catastrophe management (ibid). The teaching model and pedagogical frameworks were significant areas of digital transformation, two of them were development of critical thinking and inquisitiveness within the students as Garrison, Anderson & Archer (2001) highlighted the requirement and complexity to integrate. They implemented these factors in a computer– mediated communication (CMC)' education system. Moreover, Garrison & Innes (2005) signified the potentiality of online content and digital design, it must possess interactivity and psychosomatically in its prime features. The major concern of digital shift in the pre-COVID era revolved around the complexity in development of adequate educational models which seek out for skills in terms of incentive and attaining learning goals.

Inevitably, the sway of COVID-19 on higher education around the world exposed the susceptibility of communication, even though 91 out of 100 percent of educational institutes in Europe and Africa held digital substructure Marinoni, Land & Jensen (2020). The fundamental spectrum of issues identified in academia were malingering; in high-tech upgradation, digital enlistment and digital competencies (ibid: 11). These shortfalls demonstrated the prerequisite for appraising in the digital pedagogical techniques, accentuating to drill on these errors by providing constant training, and further work out for

quality end-result of an education. Digital education seemed to be a slow, complex and balanced process, moreover presumed to be a discretionary choice. However, due to the absence of holistic approach and necessitated persistent innovation, technological provision was visible. Precisely, scanty of periodic technological advancement was influential and protruding facets of the gap declared during the pandemic. Additionally, the dearth of data availability made the process sluggish for many institutes (Crawford, Henderson, Rudolph, Malkawi, Glowatz, Burton, Magni & Lam, 2020: 19-20). Reportedly, mixed responses were visible on the technical augmentation as some universities merged with the technical trait, while others learned the tough deficits triggered them to overcome the technical gap. While contextually, development status of a nation displayed the requirement for inclusive digital notion such as; internet readiness to isolated places, attainable online resources, user-friendliness of education, a lesser amount of intricate online modules and tools, nevertheless ample governmental provision (ibid). Despite these, handful of obstacles in the digital based were stipulation in education. COVID-19 impelled the digital transition more rapidly than ever. Relatively, the digital notion at UiA also changed which was visible during WLS summit 2017 and WLS summit 2020 held at UiA.

In an attempt to compare both agendas; in 2017, the key discussions were made on the basis of transitions and its challenges of education at social level, due to the emergence of technological tools. The discussion agenda was to analyse the capacity of interconnecting global north and global south through technology. It was deliberated that most of the ICT enterprises insisted on technological advancement and better learning options, to counter the technical advancement it is required from the HEIs to develop skilful individuals (Starcke, Shanks & Tveiten, 2017: 7-8). However, the year 2020 agenda was motivated for theoretical and practical analysis, on the techno-ability in higher education as the pandemic led to uncertainty, and pushed the world to look for new solutions. Both the WLS agenda demonstrated the pre-covid and ongoing corona version of digital milestones respectively in higher education, wherein the latter year became the representation of digital reality which is going to be explored in this article thoroughly. However primarily, below section 1.4 unfolded the quality amendments in Norway, to highlight the integrity and criteria of quality in higher education.

1.4. Quality Reforms of Higher Education in Norway

Additionally, the outcome of education must consist of excellency in the form of quality undertaking as higher education shapes economic development, by endorsing ranges of population and it needs. The higher education must provide equal opportunities to its inhabitants which must ensure for effective utilization of human capital for economic growth. Under the quality assessment criteria of the Norwegian universities, NOKUT conducted the verification to ensure that institution must achieve the end-result of an education through quality-driven disciplines. In both the higher education and 'Tertiary vocational' courses; by maintaining the quality working environment including employees and the institution (NOKUT, n.d.), and it must have the prototype for systematic evaluation of quality centric academic culture. According to the quality reforms the prominence was on the cross-border and transnational knowledge association, to facilitate the knowledge share and advocating the quality in the overall education system, wherein, research played an integral part. Due to this Norway's knowledge partnership was diversified with the EU; other Nordic nations like 'Denmark, Finland, Iceland and Sweden'; and outwardly such as 'USA, Canada, Japan, Brazil, Russia, India, China, and South Africa' (Government, 2020). To have a complete and quality results of higher education both the combination of practical and theoretical knowledge, required to acquire job related capabilities which was possible through consistent research. 'Horizon 2020' (Government & Horizon, 2020) an EU based research and innovation programme initiated on knowledge exchange, in the form of the consistent movement of technology and human capital, encompassing research activities in the field of ICT and social well-being precisely. Thus, Norwegian universities were entitled to meet the global standard through becoming the research facilitators and human developers.

The quality reform in higher education consisted of distinctive opinions and transformed periodically. Fundamentally, knowledge creation and its association with quality has versatile dimensions as explained by Strand (2000) knowledge is formed by a learner, and controlled professionally by an expert or institution. Later, the knowledge is disseminated at the social platform to testify the socio-political-economic notions which required collaborative actions of requisite institutes and research actors to empower the knowledge finder (ibid: 223). Seemingly, quality of the knowledge was effected and transmitted, by the visions of knowledge experts and knowledge players.

Consequently, research at local, national and global level are required. Commonly, from the past to the current era, it is verified that skill-driven and quality-based collaborative education, contributed to the constraint for constant research and innovation, extensively amplified with excellency in knowledge. Outwardly, the skill development criteria have evolved from face to face based practical training to a sophisticated digital module, sometimes wholly and mostly partially. The major episode of the Corona outbreak made the whole world re-think on the digital pursuit in higher education, and for Norway it's one of the challenges, while walking on the path to acquire digital goals in the education sector. In simple words, there are conspicuous factors such as Norway's digital transit in the teaching and learning culture, which adhered to digital shift in knowledge sharing protocol in a socio-cultural perspective. Therefore, it is significant to know the framework of impact in the learning and teaching environment, techniques due to COVID-19. Moreover, its effect on various branches of academia at UiA. The upcoming section 1.5 emphasised on UiA as a case example, and precisely explained its relationship with digitalization from the pre-covid era.

1.5. UIA's Institutional Background: Case Relevance, Selection and Significance

The ethnicity and outcome of this study, relied on the Cross-Sectional case analysis of UiA which is located in the southern part of Norway. UiA was established in the year 2012 wherein, the university was partially embraced digital tools and digital learning modes for definite courses. The first online module on 'Road Traffic and Vehicle Study' was developed by UIA's 'Media centre' and IT department, in association with 'Norwegian Public Roads Administration' (UiA, 2015). Before COVID-19, UiA launched ICT based collaborative programs anticipated the future trends of digital transition. The Research Council of Norway launched 'ICTPLUSS' projected for NOK 150 million per year until 2020, projected for the development and wellbeing of the society with the research endorsement and innovation in the public and private business (UiA, 2014). The new program was called IKTPLUSS, emphasised on superior and fundamental research, job enrolment through merging ICT solutions in the businesses and in the Norwegian Society (ibid). Relatively, from the year 2015 till 2020, 'The Directorate of Education (UDIR)' declared that 'National Rector's Education' is also a potential course at UiA which is focused on the preparedness for the challenges faced by the university, and practical aim for learning, assessment and transition occurring in Education sector (UiA, 2014).

After the corona outbreak, some of the significant steps were evident for the tightening and emergence of digital goals of the university. One of them is that 'Teachers Education Unit' formed a joint association with the 'University of Finance Administration in Prague' in order to enhance digital competitiveness of higher teacher's education' (Wevle, 2020). In contrast, another report of UiA survey on the students proclaimed, discontent due to absence of physical engagement (Landverk, 2020). UiA focused initiation for broader-cultural social alliance for knowledge creation, while holding research advancement through national and transnational association for the development of societies and industries (UiA, 2016 & 2020). It resulted in enabling knowledge sharing and development by assisting students with information, critical thinking and occupational requirements, for their personal and professional advancement (ibid). At the same time, connecting research with education, determined the crucial progression to process knowledge- based society, while the other aspects such as; effort for innovations with global participation and local involvement are considered equally (ibid). Moreover, earlier in the year 2017 at UiA, 'World Learning Summit and LINQ Conference' encountered the understanding and proceeding of digital education. In the publication 'Smart Universities: Education's digital future' authors elaborated on the potential digital transition for technical, art and creative academia which would cause a shift in the teaching methodologies (Starke, et al. 2017: 7). The focus of the meet was based on the possibilities of futuristic ICT based curriculum and universities. It was represented in the conference that future academics were estimated to shift as enterprises and technological enthusiasts represented the upcoming digital age in higher education, Wherein, the transition was calculative and rather optional, for most of the disciplines and professionals as some seemed sceptical on many contexts related to the impact on socio-cultural exemplary and its power structure (ibid: 8). Therefore, the questions revolved on the sustainability of digital education in the modern world and its response rate across the globe, moreover its efficiency in dealing with the inequalities in context of North-South divide (ibid).

Relatively, within the pandemic 'WLS 2020' out-reached for upcoming both the positive and negative influences of digitalization. In addition, specifically in the year 2021-2024, the strategic highlighted the contribution for 'UN's sustainability goals', and 2025 is missioned for an expansion on research, skills-set and artistic abilities (ibid). Evidently, significant changes were brought up into action during the peak period of pandemic (2020 to 2021), and strategic

reformation on the ambition for digital university stayed resilient. Hence, it became utmost essential to analyse the areas of digital transition from both the pre-covid and ongoing corona circumstances which had the potential to lead towards post-pandemic.

Case Selection and Research Significance

Wholly, the consideration of UiA's case example had the potentiality to explore the digital shifts made by the institute so far, and what lies ahead in the transition process. The corona impact on the organization affected every stakeholder within and incorporated with it. UiA as a Norwegian university have a diverse group of stakeholders both nationally and globally. The university also represented collaboration of global north and south at distinct levels, and its responsibility for capacity building through community development. UiA became my definite selection as the midpoint of my study, primarily I'm the current master's student of the Global development and planning department. Moreover, this study program of social science is a hybrid course with the flexible options for distance learning and face to face teaching. And due to the covid, all the lectures were shifted to fully online course. Nonetheless, significantly experiencing the mayhem of pandemic with my fellow students and staff members gave me an insight to look into the matter in-depth. From a sustainability view point and caused immobility, it provided me an advantageous opportunity to check the ground-breaking understanding of the situation while experiencing the digital shift. Meanwhile, it is also vital to understand the crisis from global perspective, in order to conceptualize a standpoint towards the factors influencing the digital transformation on wider scale. Thus, it would be easier to comprehend the findings at regional level, and elaborate on the scope of development within the quality based higher education. The segment 1.6 comprise of focusing on the global impact of corona on HEIs, by illustrating on various cases from global north and south. Additionally, it portrayed the decisiveness of the digital functionality of various universities across the globe

1.6. COVID-19 Catastrophe and Global Responsiveness of the HEIs

The sudden outbreak of corona in different countries responded dissimilarly to tackle the academic policies towards problem solving attitude and crisis handling phenomenon. In other words, quality education is a combination of 'social inclusion' comprising 'social equality' (Camilleri, Hadjichambi & Parakeva-Hadjichambi, 2020) which enables the learners for life

skills, and their integration into the job market. Standard internationalization of higher education is also another essential component of quality education which can be achieved through collaborative research. Hence, interconnectivity of social development in the form of capacity building, through quality education with the economic growth of the nation was the fundamental doctrines. It should continue with the digital transition in the higher education sector. Another report by Marinoni et al. (2020) revealed poorer influence on globalization and liberalization, due to immobility of students across the globe in this pandemic. It distraught the campus investment on infrastructure, in the form of its design and educational prototype (Tesar, 2020: 556). Indeed, the curriculum and course outcome got shifted and studies cordiality in this emergency abided by inequality in the education system, as it was available for privileged class mostly (ibid). Though online teaching was economical, higher institutions lacked the technical backing and approach to inaugurate schemes like 'digital literacy and digital pedagogy' allied with the digital protocol (Tesar, 2020: 557). Expediting, simplifying and incorporating digital learning into society was the greatest challenge in this corona times. Thus, understanding the frequency of digital change is mandatory to obtain.

Crucially, every nation had altered impact in terms of availability of resources; infrastructure development; utilization of assets due to their demographics, geographic and socio-political and economic scenario. The availability of digital resources is of limited concern for digital development, there are cohesive factors such as digital planning, awareness, its content and monitoring process in higher education. Respectively, these factors relating to digital development, and its challenges and opportunities in the global north and south varied for scheduling digital shifts. Other than that, some specific country had different approaches due to the proximity and priority of the issue. Global south had issues with infrastructure, inequality, poverty and absence of resources on a large scale. However, it is also undeniable that developed nations also lacked in providing higher education for diverse communities in the absence of systematic digitized code of conduct. The specific focus on the cases from global north and global south would determine the descriptive factors, and their roles to recognize the standardized transitions towards development and quality education.

Global North: Case analysis of Scandinavian Countries

There were various factors associated with communities in Nordic countries at the initial stage of the outbreak, and one of them included unavailability of instant information related to COVID-19, and poor data management in crisis handling. As per Loima (2020) when in comparison, alike Finish and Swedish students are exempted from tuition fees on elementary education. Although both the countries faced the analogous trials, they shortlisted differential approach in dealing with the pandemic in terms of socio-political regulations with response to higher education. The trust ability of socio-political structure was distressed in Sweden. As the country faced social backlash for following obsolete educational conceptions which undermined the requirement to digital shift in the education system (ibid: 68). Whereas Finland through legitimate philosophy worked on its digital learning environment with substantial data reporting and curriculum shift (ibid). The contrasting tendencies of policies in Sweden and Finland, evidently forecasted the relationship between the dynamics in higher education and political support in the form of policy intervention. Thus, the circumstances indicated that digital transit in higher education also involved efficient data management from the social framework perspective. This represented one of the internal variants of the crisis management in higher education during the pandemic.

Externally, the concern on the wellness of the international students was notified at mass. In a study which include Nordic Countries; 'Sweden, Finland, Norway, Iceland, Denmark' (Velde, Brukke, Bracke, Hal, Somogyi, Williems & Wouters, 2021) and from the multiple 'twenty-six countries, 110 higher-education institutions (HEIs)' pointed out; the degraded living standards, financial crisis due to unemployment, overburden of education commitments, lack of access to data and resources in relation to Covid-19. They indicated the psychological catastrophe of the international students and apprehension of job crisis for the students are at rise. Specifically, in Finland year 1990 and 2009 were the financially difficult periods and due to the recent outbreak. the social inequality persisted even longer (Greve, Blomquist, Hvinden & Greven, 2020: 14). Relatively, when reinstated on the 'Nordic Welfare Management' during the corona, it is found that some transformation at the fundamental level was done to continue the economic activities, through protecting jobs and standard of living for the inhabitants (ibid: 15). Nordic nations represented various similar factors in terms of social welfare manifesto, but distinctiveness in the implementation of socio-educational

policies, during the pandemic caused social inequality and exclusivism. Especially, when it comes to divergent international student's group.

Global South: The Outrage of Corona in Higher education

Undoubtedly, developing countries crashed harder with the outbreak, for the students both at national and international levels. The restrictions on student's mobility to the global north for pursuing their higher education decreased tremendously, and they were provided with digital tools to continue with their education from their home countries. One of the claims of educational consultancy based in Toronto; on an average six million international students looked for education and employment in countries like 'US, UK, and Australia annually. And over '1.5 million' gets admission by paying tuition fees of approximate 'US$40,000'yearly, with the additional living costs and it lead to recession for developed countries during the pandemic (Wolinsky, 2020: 2). There were greater economic concerns at both ends for instance 'University of Michigan-Ann Arbor informed US$1billion losses' (ibid: 5). According to OECD (2020) 90 institutes relating to the young groups, and forty-eight different countries conveyed similar issues such as; psychological nourishment in the form of self-security and motivation, their employability, loss of disposable incomes, displeasure on education system and limitation in maintaining healthy relationships.

Apart from the displacement of academic activities, the linkages between the global north and south in the form of research collaboration existed, as most of the research grants were usually received from northern universities (Halvorsen & Nosum, 2016: 176). The authors allegedly confronted with investment issues in the higher education sector to the global south. It is due to the response of the economic reset as financiers prioritized the developed nations (Hausmann, 2020). Whilst coping with the core concerns of outbreak, it became the immediate apprehension for the developing countries. It automatically kept the higher education sector isolated from sponsorships. Although, the inequality was existing in the usual education protocol, as referring to the UN (2018) report of the 'World Youth' which pushed the 2030 agenda, determining the various categorical rights within the education model namely; availability, accessibility, acceptability and adaptability. These rightful approaches in the global south were vandalised in the pandemic which comes under

availability of digital setups; adequate teachers training and administrative support; and adaptability by the minor groups.

One of the marginal groups were ‘differently- abled learners’ and however, they come in susceptible categories for all nations which vary to many degrees. During the pandemic it worsened for the global south, in Uganda the students with disability were became the victim of the crisis as they were having concerns to meet up with regular physical activities along with learning, and their earning opportunity became null. Moreover, the parents were unable to provide adequate learning support as their inaccessibility to the educational resources (Mbaazi, Nalugya, Kawesa, Nimusiima, King, Hove & Seeley, 2020). During pre-covid these marginal students received ‘FTF’ learning experiences from the experts who are entitled to make them learn with care, and keep the parents at ease moreover, the body impairment varied. Typical identification of disability related conditions are either; genetic or developed through sickness or mishaps, which have diverse components with the mental and physical needs while learning (Kabuta, 2014:16). Consequently, the therapies and the education prototype are distinctive in nature. Due to the pandemic existence of bounded mobility, lack of transportations, less income opportunities for the care workers, and facility centres to access education which used to be participative in the key roles in their lives were challenged (Mbaazi et al., 2020: 4). As a result, regardless of any age and financial background every student with disability also had to discontinue their institutional learning, and imposed upon digital based home education.

These marginal learners were already isolated from the privileged students from the developing countries. Hence, restrain the positivity of digital transition in higher education. Before, the corona aspect of pedagogy for these individuals was designed in the FTF educational model, and when the pandemic occurred their circumstances weakened with no other possibilities. In one of the studies in South Africa (2011) represented the fact that ‘differently-abled’ unlike normal learners depicted that even though HEIs are equipped with supportive amenities but still lacks in many aspects, and they are drastically isolated in the race of international admission in the global north (Kabuta, 2014:18-21). The marginal groups of disability have the capability of extended divergence in this category for instance, gender inequality.

Other than that there is infrastructure, security and accessibility concerns of digital based education. With an overview on Indian context (Jena, 2020) the impact on higher education started with stagnation of many important activities ensuring security, one of them was conducting and assessment of examinations. Many student's admissions to the next academic year were postponed for a year. The research collaboration with global north also decreased, and became conditional due to travel restrictions (ibid). At an economic stance, the country faced reduction of staff members in the education sector and a digital divide is seen within the students. As some may belong to high income groups as compared to less-privileged students, wherein the latter groups were distant from facilities like consistent internet connection, issues with affordability and possession of user-friendly equipment, whereas, it was forced to the low-income households due to digital transition in this pandemic (ibid: 80). These factors were significant to comply with the usefulness of digital based higher education to the marginal groups, as they were majorly affected in accession and adaptation of digital tools. In terms of right to education, the possibilities and expectations are diverse from the pursuit of developed and developing nations; and universities along with the government have to take drastic steps to connect the dots. Nonetheless, the notion of digital education seemingly contrasted, and have the possibility to overburden the developing nations causing prominent inequality in higher education.

Factorial Illustrations on COVID's Global on HEIs

The responsive protocol to contain the causes of pandemic in higher education by the universities were diversified in several aspects. Majorly countries have considered a mandatory quarantine period for everyone, and to facilitate continuity in academics, the universities revised their curriculums to suit the online pedagogical requirements. Although the action was an immediate response to the corona crisis, reportedly there was estimated space for betterment and systematic planning. At the initial stage of outbreak, the universities around the world responded conveniently based on the available resources. There were other vital reasons like government regulations directed at the policies of universities. Likely, from the perspective of a developed and developing country; Germany's University of Passau and Pondicherry University of India postponed the teaching and examination (Crawford, Henderson, Rudolph, Malkawi, Glowatz, Burton, Magni & Lam, 2020 :13). Seemingly, China was subjected to delay in the spring semester and short-term shift was unsuccessful in many

attempts due to lack of transitional components for digitalization. Australian Universities found the dilemma of facilitating international students, amongst some institutes like; 'University of Western' eased domestic students for non-isolation, and university gathering were limited as per government norms (ibid). As a result, common trends of crisis for international students became innumerable due to imposition of travel restriction by most of the countries like Australia, UK, US and EU countries. Some educational institutes such as 'The University of Indonesia' proceeded for campus closure, with the focus to increase the online competency of staff members via. virtual training. (ibid). There were many other issues that erupted as many students on a large scale were extradited from their studies. In countries like Egypt 'University of Cairo and Alexandria University' faced a prominent issue like absence of infrastructure in data storage and internet speed moreover, the technological tool such as 'Blackboard, Moodle, Zoom' etc. were available but these techniques required substantial, and adequate planning for its utilization in the higher education (ibid:11). Therefore, global understanding on expanding the digital aptitude of the teachers and staff became the utmost priority to apply digital curriculum and learning. Relatively, Jordan universities shifted to empower the teachers with digital skills but lacked student's strategic intervention in the digital drive of higher education. (ibid:14). It became evident that digital implementation in higher education required strategic movement, and sudden digital shift is a temporary action to meet the crisis.

The crisis management of less developed and developing nations can be distinguished when analysing the contradictory cases such as Nigerian institutes which suspended all teaching activities whereas, Irish Universities digital transitions were swift for both students and staff (ibid:15). The core academic practices like; teaching and learning were highly affected, whereas the areas like academic research shifted to explore its potentiality during the pandemic. South African institutes aimed to progress on research activities while keeping the campus close. At the same time advocated digital upgradation through expansion of digital potential for the future. Nonetheless, teaching shaped through digital tools like; canvas which was followed in 'The Pontificia Universidad Católica de Chile (UC) in south America'. There were recently evolved digital centric universities in the pre-pandemic period, one of them is 'Hamdan Bin Mohammed Smart University labelled as foremost e-University' in the UAE with its potential for digital pedagogy, and they supported other universities to conduct online

programs (ibid:18). Disproportionation can be seen at various degrees as some institutes were at the phase one with partial online conduct, and others lacked the systematic coordination, planning and monitoring for digital implementation in higher education. At a very lowest level there were countries, they reportedly had to suspend their whole education system.

Apart from the institutional impact of COVID-19 undertaking on the digital teaching, freedom of expression and critical thinking, the online platform appeared to be severe in the fundamental framework of quality-education during corona. Moreover, the impact of the outbreak varied depending on the development criterion of a nation and digital compatibility of its educational institutions. Reasonably, the factors relating to create the future digital doorway were also diversified, yet it is significant to hypothesize, and look for the stimuluses in higher education to create a sustainable society. However, to figure out the factors to be considered, it is crucial to understand the transformational; framework of digitalization appeared at various level at HEIs distinctively during the pandemic which are discussed in the forthcoming chapter.

2: COVID-19: DIGITALIZATION AND CHANGE MANAGEMENT IN HEI'S

2.1. Corona Centric: An Evolution of Digital Culture

The digital transformation in Higher Education is an ongoing process from the past few decades, and present digital solutions are allegedly temporary crisis handlers for most of the HEIs. Alongside, undeniably the world is unleashing towards post-pandemic pedagogy. Wherein, digital tutoring is estimated to be the centre point of the education system to a large extent, and faster than expected, as compared to pre-corona times. However, the transformation is a complex process and HEIs are digitally evolving for many decades, this time it is the intensification of digitalization in higher education. It was foremost crucial to support the present crisis, and then to prepare the future generation for sustainable HEIs development.

Due to the pandemic, the change in management of HEIs and digital pedagogy, is likely to continue its relationship rapidly in the coming decades. 'Complexity theory' of organizational change is applicable in the digital transformation of HEIs, as the factors influencing the changes are tenacious and composed of complex matrices, for instance; the changes at 'Alpha Organization' were planned logically, but the external environmental factors resulted to look for multifaceted angle in matching with the shifting variables (Styhre, 2002). Similarly, in HEIs due to corona based digitalization, the notion of higher education was inevitable due to a restructured digital shift with the combination of various factors such as; institutional leadership, research-activity, collaborations, and technological medium to facilitate learning and teaching. Moreover, re-interpretation of pedagogy, course curriculum, skills advancement in a secured environment became the focal point of immediate digital consequence. Therefore, the digital transition based on complexity theory of change management (Styhre, 2002) in HEIs would occur, based on the breakpoints in the existing digital infrastructure, while understanding them in the transformative process. More or less, the impact of COVID-19 on higher education was controversial with the academic values. It is due to alleged digital education in many aspects but digital pedagogy was the hub of this digital transformation. As discovered about the unpredictability and scantiness during the

corona times, in relation with various factors and stakeholders associated in the process. In this chapter, the diversified factors affected in teaching and learning aspect are discussed thoroughly, and further its components resonating the ICT transformation in various areas of higher education. Significantly, the digital transition in the corona era has transformed the working environment, which was the basic feature of digital transformation in COVID-19 times.

Compared with pre-covid times, digital culture depicted that primarily digital practices and communication has transformed human behaviour, and many were still struggling in a higher education setup during the pandemic. Even though digital culture has trended globally over a decade, in the form of social media and digital communication. The higher education sector was most likely accustomed to social media, as a partial tool to support academic communication or information. Mainly, it has been the platform for universities' marketing strategies, which was due to the youth habits for using digital social networking in their daily activities. For example, African and Asian universities were hugely reliable on digital platforms for marketing the academic courses, and to portray their potentiality in the market. It is also seen that reliability on social network platforms differentiated, in terms of strategic adaptation and the intensity of technology advancement (Paladen, 2018). The author agreed that diversity of students can be reached through social media, and it is very effective hence, many HEIs developed digital strategies to connect with the students on platforms like 'Facebook, WhatsApp, LinkedIn, Twitter, YouTube and Podcast'. Interconnected, the impact of social media on higher education was influential, in terms of learning prototype as digital communication and collaborative methods were highly accustomed to transformation. The social media networks became the space for online learning mechanism, and evolved as the new 'Learning Management System (LMS)', moreover 'Online social networks (OSN)' evolved partially in terms of external collaboration, connecting with the stakeholders within the higher education setup but contained scarcity of pedagogical, and learning based activities in these platforms (Zachos, Kollia & Anagnostopoulos, 2018). The authors expressed the popularity of Facebook in Indonesian Universities for commencing academic related communication, coordination, collaboration, and exchange of educational principles which were seemingly optimistic consequences of social media influence. On the other hand, faculty members disagreed with the OSN activities, as it encompassed chatting and gaming

fundamentally, which was non-beneficial in terms of pedagogical ethics (ibid: 13). Additionally, during Corona, Egyptian Universities witnessed and recognized 'Facebook and WhatsApp', as effective tools for online teaching and learning, in comparison to 'Google Classroom and Zoom' but it lacked the professional approach in OSN platforms (Sobaih, Hasanein & Elnasr, 2020: 18).

However, in all the scenarios there was an absenteeism in the learning activities based on pedagogical principle, and formal learning environment for both teachers and students, to carry out professionalism. Pre-pandemic, it was used strategically for marketing and communication purposes, and eventually during the pandemic the social networking sites gained more popularity in the higher education sector, in spite of criticism and setbacks. The immediate effect of the corona pandemic on higher education led to the transformation in rethinking the utilization of Social Media and digital communication to its fullest potential. Though, it is conditional on which level the universities around the globe would develop their post-pandemic inspired digital communication and social media strategy.

The radar of digital culture is a wider concept which is much more than digital communication and social media. In Neuwirth, Jovic & Mukherji (2020) stated the gap between the teachers and students which prevented the delivery of quality education, they evaluated the student's psychological barrier and teacher's hopefulness, both were disproportionate as the students were unwilling for camera presence, and online participation during virtual classes. Thus, working on an empathetic approach and setting standards also became necessary for the educators. So that the students continue to interest the course structure, and their expectations remain unchanged due to the possibility from prolonged, and advanced digital teaching in the post pandemic era (ibid: 7). Other than that, it was highlighted by the authors about the privacy norms which were also required to be understood, as some students faced issues in disclosing their living backgrounds, and self-reflection of their lives to avoid social judgements. It was identified that the students must learn the value of social engagement, by showing compassion towards each other in a digital setup. Adjacently to accomplish quality education, teachers were furthermore entitled to train, fix boundaries and strategies to ensure that the online decorum, professional responsiveness were followed, and vitally must be understood by the students in a digital learning environment. Uzelac (2008) outlined the

understanding of different cultures to cultivate humanity and every individual must be given the opportunity for rightful education and to express themselves peacefully. The depth of digital culture is also aligned with the diversity as the students and teachers belong to different nations and cultures.

Due to digital teaching and continuation of the ideology of internationalization of education, the consideration of diverse participants in an online learning platform is quite common. For instance, marginal students are often challenged due to the lack of social enclosure during teaching, obstacles in adapting languages for proper perceptivity in a virtual teaching environment (Yebaoh, Dogbey &Yuan, 2019). As described by the authors, 'Culturally Responsiveness Teaching (CRT)' (ibid: 8) is an inclusive approach to conduct the cultural activities, becomes an alternative option and work as a tool to collaborate online with the participants but also interferes within the teaching-learning time frame and objectivity.

Therefore, quality education also included the teacher's digital competency in training students due to the evolving digital culture. It is unlikely, to state that digital culture is just about social media platforms and digital communication. As in an academic world, it is more of a formal setup where the students must be trained, to develop the online etiquettes with the employability tactics. Whereas, digital culture has prominent characteristics for the faculties; like identifying, understanding the social culture, and mannerism for a diverse group of students on a digital platform, while teaching digital centric professionalism; social behaviour; skill development; and subject knowledge; altogether for the best learning outcome.

On common grounds, multiple factors were associated with the susceptibility to digital based higher education. It is depended on the credibility of governing bodies for agile national, and international policies, in accordance with accessibility, availability and affordability. However, ordinarily these decisions also determined by geographies and demographics of any region, which are the fundamental means to sustain the transformation. Thus, with an existing paradigm of digitalization in HEIs, the scope of digital development in higher education intensified more than before.

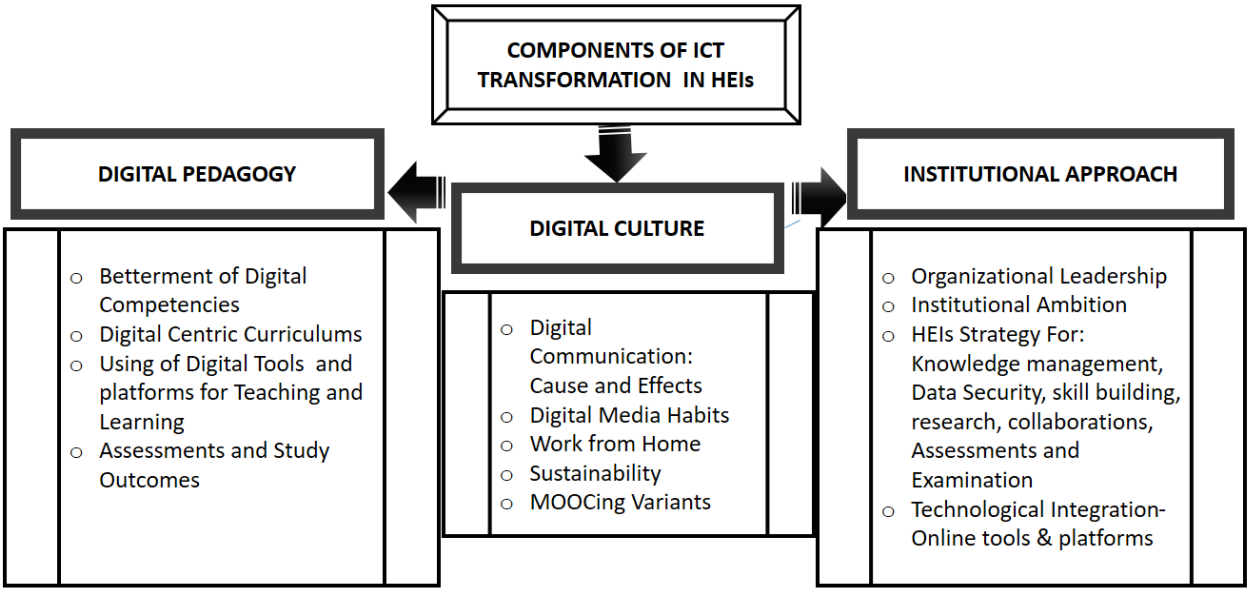

Figure 2.1. Framework of ICT based Tranformations in Higher Education Institutes

The further part described the elements of ICT based transformation in the universities due to the pandemic, and anticipated the consideration while looking for deepening the digital transition in higher education. In the figure 2.1, there are three significant criteria of digital transformation in higher education which were prominent during this corona crisis. The centralised and fundamental point of the transition was the digital culture phenomena; responsible for pushing the higher education to sustainability, flexible work from home opportunity, anticipated MOOCs for another level of upgradation, and explored the potentiality of digital communication from diverse angle. Additionally, digital pedagogy and institutional approach were responded to the consequence of newly advanced digital culture. Wherein, digital pedagogy extended to more than just virtual learning and online resources, demanded for course curriculum which must suit the digital learning culture.

Moreover, the digital learning also increased the requirement for skill development of the teachers primarily, to facilitate the successful digitized knowledge transfer and prepare the students with skill sets. Nonetheless, the assessment and examination notion were also likely to shift, as a result of digital curriculum and flexible digital environments. Significantly, to accomplish the target of digitalization while nurturing the change, HEIs role play is crucial in the form of leadership, tactics to handle the digital culture and learning, lastly the integration of technology to its requirement. To comprehend, the above figure 2.1. demonstrated the

components that are essential to broaden our understanding towards digitalization in a higher education and must setup for achieving accessibility, availability and affordability. Seemingly, digital culture has its direct impact on teaching and learning protocol, section 2.2 figured out various impactful factors associated with it.

2.2. COVID-19: Digital Pedagogy and Learning

Outwardly, there were three crucial analytics involved; firstly, the digital based teaching competence, secondly, their relationship in context of awareness about the student knowledge-ability, and third factor was technological competency of the learning centre (Stein, Wanstreet, Calvin, Overtoom & Wheaton 2005: 105). In the digital framework of higher education, these are the pillars of successful application of digital learning resembling LMS which helped in identification of the gaps in detailed manner, for instance; 'Mizoram University in India' practiced 'MZU-LMS portal' (Misra, Gupta & Shree, 2020 :7) during the pandemic, and it assisted the institute to recognize three vital issues; primarily, limited timeframe while teaching and conducting academic activities; furthermore, requirement for prior customizing the digital tool favouring the online teaching content, and techniques; and lastly, the concern in teaching practical courses as it required prompt instructions to the learner by the lecturers.

Furthermore, on the effective digital interaction through digital content Garrison & Innes (2005) portrayed the eminence of digital design, which creates psychological relationship with the participant. Thus, evidently the instructor's knowledge and its application, through the technological enrolment with personnel technique is well-known for assessing the adroitness of lecturer potential (Winch et al, 2015). Apart from lecturer's standpoint, 'Glocal-model' Caniglia, John, Bellina, Lang, Wiek, Cohmer & Laubichler (2018) focused on the academic activities of the students, in relation with courses objectives with a medium of technological tools and standardized technological approach, can be considered as action-plan for digital transformation in higher education. The tactics in glocal model must be incorporated with the student's engagement activities with the help of the technology. The authors insisted upon the potentiality of this model as it has the capability to attest the overall education procurement with the lenses of technological amendments (ibid: 375). Moreover, research and pedagogy goes hand in hand, as the faculties witnessed the changes at the socio-cultural

level and simultaneously transcended the knowledge awareness. Whereas, the teaching techniques that must comprise of both practical and theoretical based learning, inter-connects with the lecturer's understanding on their role as evaluators (Winch et al., 2015: 213). And the outcome of the research on 'transactional distance' indicated that learners must obtain knowledge, through its digital content and suitable course plan (Stein et al., 2005). Consideration of outdoor studies such as environmental, sports, social work and nursing etc. are few of them listed here which are based on practical and experiential pedagogy 'OEE' (Quay et al., 2020 & Berry, 2020) and are conditioned to search for new potentials in the digital transformation of higher education in these areas. As the courses are entitled to face-to face interactions, discussions and bonding within the peers on an outdoor facility is the main agenda of the course pedagogy. These co-creational activities are a significant part of learning protocol through practice and experiential learning must be re-discovered to new frontiers.

Additionally, the quality of education must include student's engagement and must provide substantial space for expressing their viewpoints. To arrange the opportunity for critical thinking, one of the factors in the learning process in a quality education. Winch, Oancea & Orchard (2015) described technological incorporation to facilitate knowledge capacity, and to amplify learner's critical thinking and platform to express in a digital framework.

Garrison, Anderson & Archer (2001) addressed the components of critical learning in digital based education which must ensure investigative approach in the learning conventions. The emergence of questionability in the knowledge acquisition process is also entitled to effective digital tools to support online higher education. Thus, they suggested that through computer –mediated communication (CMC)' integration of critical thinking, and investigation in the learning process can be achieved through converging of digital centric teaching principle with the community initiative, but it also encroached the struggle to find out the hidden factors which may intervene in the end-result (Garrison et al., 2001: 21). At the same time, the teacher's dexterity to fulfil this whole process of knowledge transfer also connected to their own critical thinking and ability to scrutinize the student's shortcomings.

During the pandemic students' psychological, social and security related needs were disrupted, and the connectivity with the learner's mental health through physical engagement and effective communication was interrupted. The adequate data on online content in lieu with quality education has largely disclosed, and demonstrated the emotional need of the students which was one of the significant criteria which questioned the competency of digital learning. Relatively, a teacher's knowledge awareness technique and their personal satisfaction of course goal facilitated the peers with research and collaborative learning activities. However, highly dimensional in the digitally conveyed higher education, and must be considered at its fullest possibilities during the transformation. By developing LMS, HEIs can accomplish the course agenda with the essence of quality Education such as; social inclusion, freedom of expression and critical thinking to achieve, while compacting with the density of the new phase of ICT transformation in HEIs. Digital pedagogy is a single phenomenon in higher education which is combined with other relevant factors, and associated stakeholders in the education system. The enriched digital curriculum must be combined with digital competency, and suitable technology by considering the variables of collaborative measures through flexible policy-driven institutional approach. It is to empower the students and provides experiential learning for the teaching in a quality based digital education. In relation, upcoming section 2.2.a. insisted on the requirement of digital awareness, to accomplish digital proficiency which is possible through appropriate digital policies.

2.2.a. Advocacy of Digital Competency

Digital Literacy is the crucial practice to manage the digital transformation in HEIs, although building digital competencies were slow paced during the pre-pandemic era. Due to the corona catastrophe the need to accomplish the agenda became more prevalent. The critical aspect of digital knowledge in relation with the digital pedagogies were disengaged, as lacked the comprehensive approach in understanding the integration points and areas in higher education. Moreover, there are two distinctions of digital literacy, one to train the learners and profoundly generate teachers. It is to disclose the expertise in digital knowledge, along with the courses digital requirements. As the digital literacy for teachers also consisted of planning the digital integration into their courses.

During pre-pandemic 'Norwegian Centre for ICT in education' Ottestad, Kelentrić, & Guðmundsdóttir, (2014) resolution for implantation of digital proficiency in the overall education systems, included formal staff training and reforming the educational model in accordance to the digital needs. This also included applicable technological inputs to support the course structure, curriculum, assessment and outcome. The scheme was initialized at least to begin with the context of 'formative assessment' from teaching and learner's perspective, towards the professional development of digital competence Ottestad, et al., (2014). The authors outlined the magnitudes of digital competencies namely; 'Generic, Didactic and Professional' digital competencies which included; installing digital knowledge to conduct their daily actions, learning the course related digital specifications depending on the disciplines, and expertise digital literacy in creating frameworks for the course planning (Assessment, curriculum, communication, interactions, integration of stakeholders) respectively (ibid:7). The final outcome of digital literacy is 'Continuous Professional Development (CPD)' approach (Kennedy, 2005), categorized the digital development of nine CPD models into three phases; Transmission, Transitional and Transformative' (ibid: 248), precisely transformative model leads to sustain capacity building. Thus, in the case of digital transformation in higher education due to corona, it became a necessary step to cover all the phases of the CPD model for the teachers. Additionally, Teacher Digital Competence (TDC)' Falloon (2020) prototypical which must be considered to restructure the digital policies, through discussions and intervention towards accomplishing the appeasement for ICT transformation in higher education, as per the need of the digital pedagogy and students' expectations. In addition, the digital literacy and skill development is possible through competent digital curriculum. It provides an appropriate platform to attain digital competency thus, section 2.2.b. elaborated on the significance of digital curriculum with social inclusion.

2.2.b. Advancement in Digital Curricula

In the pursuit of a virtual learning system; virtual curriculum should be envisaged to fulfil the skill development criteria of the learners to accomplish professional requirements. It is only possible when the digital curriculum is designed to outreach the course outcomes and learning agenda. The outrage of pandemic proved the requirement for an eloquent digital

curriculum in the post-pandemic era. Moreover, there are additional components attached with the digital curriculum one of them is the digital content, and another criterion is the outlook of the course design. Both must complement each other, and facilitate students or faculties to function daily with ease. Basically, the digital curriculum must aim for the course agenda, consist of simplified course models which have the potential of interaction, learner's engagement in the pedagogy, and at the same time must consist of social participation in the form of active discussions (Swan, 2001 & Xiao, 2017).

Interrelated, 'Glocal Curriculum' Guido, Beatrice, Leonie, Lang, Wiek, Cohmer, & Laubichler (2017) were initiated by the joint venture between 'US and German University of ASU and Leuphana' respectively, based on their supportive-common technological infrastructure nationally. The prominent sustainable features of glocal exemplary are applicable in a local and multicultural environment, moreover required for petite prerequisite to travelling overseas. As the learners were trained to collaborate with national and international groups through online interactions, it helped them to identify the local needs of their regions (ibid: 375). It is distinguishable from MOOCs, the author suggested as it is based on in-depth interaction, and local assignation. Hence they emphasised on HEIs capacity building, for e.g. internal space with video conferencing facility which further required faculties to arrange the learning sessions in different countries, and to navigate the whole program. Whereas, at the same time the teachers must supervise and train multicultural students to engage and interact, in accordance they should obtain similar competencies to manage the whole course of action, in association with subject knowledge and technology which is applicable for 'formative assessment' (ibid). On the other hand, Xiao (2017) reported on the negligence of the active digital content to integrate with the course resources. Thus, it is significant to understand the habits and preferences of learners to obtain online resources, in order to participate in an online education, set up (ibid), furthermore relativity with course content led the students to develop the course objective. Therefore, it becomes significant to validate learner's knowledge in accordance with the course outcome. The next section elaborated on the notion of digital examination.

2.2.c. Digital Examinations and Assessment Criteria

The Method of monitoring and evaluation of student progress is a crucial and critical technique, and it unveiled new prospects of shift to ICT based digital evaluation with learning opportunities for both examination attendees and examiners. During Corona, the universities experienced many setbacks in the assessment protocol which are represented in two criteria namely, 'formative and summative assessment' in terms of 'Norwegian Digital portfolio' (Dysthe & Engelsen, 2004: 255) system. The technology had re-invented examinations in the form of home examinations, online centric presentations, oral tests and written assignments. It was the simplistic approach for an impartial and inclusive evaluation mechanism with the focus on feedback and collaboration viewpoint. Furthermore, the authors conveyed ambiguity in the progression of operative rejoinder, included integration of the analytical aspects such as; thinking, observations, and clarifications aspects. It required to be restored in the post-pandemic digital assessment protocol. Along with the perspective of reflective and collaborative necessitated examination, García, Corell, Abella, & Grande (2021) highlighted that the existing examination tools were offered on the criteria of pre-pandemic teaching, due to corona the intensity of technological invasion disrupted the basic notion of assessment criteria and understand-ability. However, understanding the transition due to corona helped in identifying the obstacles for online assessment methods.

García et al. (2021) explained in general that the courses were fundamentally evaluated regularly with final examination with the integration of assignments throughout the study period, and these assignments were planned by the faculties based on their subject requirements and courses agenda. The final examinations mainly acted as a conclusive evaluation protocol which was based on assessing and preparing the candidates throughout the year. Then enable them to certify the whole course or direct them to re-appear in case of discontent performance. On an average 40 percent or higher were allotted for final examination, and these tests varied in features and several of them consisted of descriptive, while others consisted of multiple choice questions depending on the course outcome and requirement (ibid: 86). Whereas authors added that in some exams the students were allowed to access resources or otherwise. However, authors defined the significant pitfalls in 'E-proctoring' (ibid: 89) and online examination which surfaced during the corona pandemic; firstly the presence of certified examination framework for home examination varied from

peers to peers; existed gaps in assisting the special learners in a home substructure; possibility of only engaging small group of students at a time; required options for using multiple devices to support the task; and calculative as well as flexible integrating HEIs regulations in the mode of examination. Wherein, specifications of online assessment criteria should match with the teaching method and course agenda. In addition, the factors like assessment varied from technical courses to practical courses; the course agenda and requirement are distinguished from synchronous to asynchronous pedagogy. Moreover, the process must be transparent and explanatory to the learners with the clarified objectives of study courses, so that both students and the teachers must develop confidence in the technology inspired examination tool. At the same time, these practices were uncertain and precarious, as it requires to be authenticated with the principle of pedagogy, examination prototype and assessment validity. In overall section of 2.2, digital pedagogy represented its reliability on the additional components such as; digital competence, digital curriculum and digital examination. However, the forthcoming section demonstrates MOOCs phenomena, as one of the prevailing format of digital pedagogy in recent times.

2.3. Emergent of MOOCs in Higher Education

Notably, 'Massive open online courses (MOOCs)' came into existence in the pre-pandemic period and suggestively, it became the popular knowledge acquiring platform. The infusion of technical tools, technical players, and higher education is the centre point for the reason for MOOCs adaptability in recent times. MOOCs is one of the present digital models which has inspired many nations and universities to develop their own versions for certain university programs. For instance, international universities like 'Georgia Institute of the technology developed Masters in Computer Science' on MOOCs model which contains tuition fees and academic requirement for the students and Small Private Online Courses (SPOCs)' can be considered as miniature of MOOCs with considerate number of learners (ibid). It is seen that the evolution of MOOCs and the concept itself have transitioned into many levels. Fundamentally, as the name suggests, this is a ICT based module consisting of providing a platform for everyone to acquire knowledge through lectures on videos; Questions and answers via Multiple choice questions; or interactive formats within the users, it showed the potential to collaborate with a large number of participants (ibid: 11).

However, there are diverse variants which broadens the MOOC classic and therefore, it becomes significant to understand the interpretation of HEIs' in Nordic nations which is reliant on socio-economic, political and cultural interpretations. The countries like Denmark, Norway, and Sweden are usually conjoint on the basis of guiding principles and course of action in higher education, but foreseen MOOC from distinctive admiration (Tømte, Laterza, Pinheiro & Avramovic, 2020: 234). Ultimately, the vital characteristics of MOOCs programs are its informality and incomplete approach towards learning, due to the lack of conclusive test format which lead to several changes in the format of MOOCing.

Due to the absence of national recognition in Global south as compared to Nordic Countries, it has contradictory sides which depended on the reforms, protocol and considerations in order to implement MOOCs in HEIs (ibid: 236). The study from Scandinavian countries itself, represented the varied results of MOOCs potential while considering digitalization in higher education. Swedish universities action-plan was aimed for a global based approach in MOOCs but followed by lack of government intervention, and in contrast Denmark and Norway took similar approaches (ibid: 239). The similar policies were countered with distinction obstacles in both the nations. In particular, Danish universities indulged in global MOOCing, found its potentiality in the HEIs course with an aim to create a standard model with a blend of MOOC with regular courses, however it is discovered that the challenges from the student's perspective (ibid). The mode of communication was selected as English language which is appropriate for high-level speaker, and moreover fixing the financial structure for the courses seems contradictory between the universities and governmental policies (ibid). In Norwegian context the obstacles were institutional, in terms of elongated responsibility for increment of digital competencies along with digital based innovative teaching and the dilemma in consideration of number of students for each courses were visible (ibid: 237-238). However, MOOCs courses were available in optional contexts; whether can be opted for examination and certification, as well free of cost.

Relevantly, the recognizable factor of MOOCing is its potential for social innovation which originated from virtual way of teaching and learning. It facilitated opportunity for the corporates to invest in rightful talent-acquisitions by infusing technical tools, and they acted as the technical players to assist higher education correspondingly. The reason for MOOC

adaptability in recent times, as it is one of the influencing digital academic prototype which has inspired many nations and universities, to develop their own versions for certain online university programs. As online learning is upgrading itself to sophisticated approach, digital security related issues are surfacing, section 2.4 explored the importance of data management and relevant policies in HEIs.

2.4. Digital influence: HEIs Approach in Digital Security and Data Management

'Higher education institutions (HEIs)' funding in digital security, digital tools for teaching and learning purposes varies based on the economic priority and importance, along with the technology availability, feasibility and adaptability with the existing educational system. To comply with that, it is very essential to notify on the challenges, faced by the institutes in its basic functions such as; Knowledge creation in the form of research, and knowledge awareness as learning and teaching. On the other hand, the requirement of knowledge management has positively led to data management, AI related business models, collaborations and digital services. Wholly it also referred to the implementation of policies which must be logical, flexible and composed of social values (OECD, 2018). Thus the digital securitization is one of the important variables in Knowledge management which must be updated and learned with the technological transmission.

The complexity of cyber security at institutional level is wider and more than just to preserve the organizational data. Specifically, it is the subject to protect the organization's server system, data protection of the devices, private networks and online tools. The elements can be precise such as; internet connection, online services, online tools, online platforms, antivirus, integrated software systems, smartphones, personal laptops, computer devices, sim cards and biometrics (ibid). Hence, the overall data management is primarily becoming vigorous in HEIs, while managing and maintaining knowledge with security and continuing with the social innovation which is apparent due to the digital transition.

In simple terms, at a personalized level individuals are unaware or negligent about the data perseverance thus, digital security at universities must secure the digital footprints of their subordinates and associates. Data security is a matrix of information and code of conduct wherein; social identification is unavailable which required a holistic approach. Hence, it is significant to identify the factors causing the threats to procure data security at HEIs. The

below cases describe the various segments of digital security, and awareness which is crucially connected to the higher education sector. Wherein, the illustration of Sweden's effort for desecuritization' (Murphy, 2020 and OECD, 2018) over a month before the pandemic surfaced, underlined the fundamental digital strategy representing the factors associated with digital security. However, 'Norway's security awareness findings in the rural setup' (Gunleifsen, 2018) provided rudimentary considerations about cybersecurity among the inhabitants.

In the year 2017, Sweden focused and introduced alteration in the educational regulations, to develop digital competencies and technological tools to facilitate the digital transformation, with the importance of having transparent visualisation of digital threat management (OECD, 2019: 116). It was to strengthen the ties between the institutes and government for policy formation; developing a forum 'Digitalization Council' to deal with the cyber threat issues; and lastly maintaining the policy coordination and maintenance, with continued studies in accordance with various countries (ibid). When the digital strategy of digital threat management was established for a month in an educational setup. The OECD report showed a major disconnect; primarily, it appeared to lack social awareness about digital threats; secondarily, institutional approaches were also recognized absent as the Digital security models are understandable and limited to top level. It was due to the fact that these prototypes were usually complex matrices and it involved only specified stakeholders at various phases of digital security.

Relatively, other disconnects OECD (2018) were identified on the non-inclusiveness and lack of amalgamation of stakeholders, in policy making and within the framework for implementation of digital security, as Swedish Government was conceptualizing the policies and were implemented by external agencies. The power structure and criteria of desecuritization at HEIs is an additional aspect to look into as in contrary to politicisation or maintaining academic ethics. For instance, Canadian aviation security explained the unpredictability of broadcasting security measures, due to indecisiveness; whether to channelize education ethics by the academics over political policies (Murphy, 2020: 494). The author emphasized desecuritization for even face-to face learning, and Deloitte Insights (2018) explained the significance of HEIs leadership and strategy, in understanding these

categories to bifurcate the cybersecurity criteria. As per the stakeholders and deciding the involvement of technical experts in the strategic development towards digital security.

When compared with the data of cybersecurity threat awareness in rural Norway, with NorSiS survey report' depicted several identification of factors at socio-cultural level (Gunleifsen, 2018). In general, the study showed that the inhabitants having high level of education possess more cyber security related awareness. The top level educators had substantial knowledge as compared to the mid and low level subordinates; gender gaps such as men have more awareness than women on cyber security; and many individuals choose null effort to identify any digital threats, due to psychological barrier and mainly due to their trustworthiness with the governance, institutions and service provider (ibid). Therefore, the concept of digital securitization and desecuritization in higher education elaborated on the scarcity of digital security, needs to be concealed for successful digital transition. From a HEIs perspective, the successful digital transition must mitigate knowledge creation and knowledge awareness by attaining democratic, critical thinking and globalization norms, while keeping the proficiency of higher education for capacity building and knowledge sharing. Therefore, digital strategy on digital security in terms of online learning and teaching tools were the intervening part of the digital mechanism of higher education. Apart from the factors impacting digitalization in higher education, digitalization must empower societies through developing capabilities. These interconnected elements like globalization, wealth creation are explained in the next segment.

2.5. Relationship between Digitalization of Higher Education and Development

Higher Education and development are interrelated when it comes to digital transitions, as it has the potential to transform the nation in terms of capacity building, which in turn is responsible for restructuring of businesses; resulting in social innovation, entrepreneurship and employment generation within the society. Education protocol works as an intermediary to bridge the gap between skills and professional requirements. Career and globalization are common trends in recent decades as education empowers the youths to select their professions and train them accordingly. According to Alexender et al. (2018) the countries like Greenland and Faroes are small islands, the migration of the inhabitants outside their territories were reported at 40 and 60 percent respectively in the year 2012.

In contrast, Greenland followed variety of language learning programs which includes 'West Greenlandic', Danish and English', and as compared to Faroese this was the only medium till higher education, moreover career guidance' module was introduced to facilitate the students to select relevant professions (ibid: 68). The proficiency in various languages gave optimum latent to move for better earning possibilities, and migration. It seemed that people's mobility was designed through a prevalent academic model to facilitate wealth creation and regional development.

The characteristics of academic disciplines are significant to gain rightful work guidance and endure work skills. For instance, University of Cagliari, Sardinia, Italy introduced a course under the 'European Social Fund (FSE POR 2014-20)' which was web based mobile application course, and it was a part of various study program including non-technical disciplines such as philosophy (*OECDiLibrary*, n.d.) The vision was to attain digital competencies within the learners to fit with the digitally evolving economy, as the university has the collaboration with the area's digital centre for social innovation. In this scenario, it is evident that the skill development must be the outcome to secure jobs in the future, and universities are the interim platform, processes individual's knowledge to social innovation and for the growth of the nation's economy.

From the above case of Greenland and Faroe, the education system seemed to provide the opportunity for globalization, and open the means of diversity through providing versatile language skills. Additionally, the Italian University developed courses to mend the division between the learners and their professional skills. Altogether, it was depicted that the education prototype must be idealized for social, regional and national economic growth, and proved its deep connection with the development.

HEIs are the contributors to facilitate the increase in the capabilities through providing essential training to achieve the development goals. If considered, where the transformation occurred initially? It is at the economic and social level due to the 'fourth industrial revolution' (*OECDiLibrary*, n.d.). Due to the outbreak of COVID-19 the phenomena extended to re-modelling existing societies and designing of future societies and economic activities. Therefore, higher education necessitated itself for digital transition to create a support system. However, the process of digital transformation was spasmodic for HEIs in many

fundamental ways as discussed in this chapter. One of them was the sector of knowledge production within HEIs which were also transforming widely. The connection between academicians, scientists and researchers from the universities have specifications, and limitations in collaborating with the corporate sector, in spite of optimism and clearer association with digitalization (ibid). Factually the countries like the United Kingdom, and United States were intensely administered with HEIs, to carry out economic activities in relation with globalization, conversely some European Universities were reluctant due to the historic and cultural based educational principles of university sovereignty and academic liberty (Strand, 2000: 119). The value based education system is likely to endanger due to lack of conviction between HEIs, Corporate sector and governance which would occur due to digitized higher education. The capacity building is effective, if HEIs develop efficacy in dealing with the challenges, and aims to increase digital competency which is limitless to teaching and learning, additionally to assist in social enterprises, innovations, technology and development. In simple terms, the income-ability of individuals facilitates social responsibility and disciplined division of employment, with the help of authorised organization. And thus, the universities play a role of certified institutions to assist in generating wealth within the framework of education. The upcoming chapter 3 elaborated on the research methodology, to explore the empirical evidences through UIA case analysis, based on the digital factors discussed throughout the chapter 2.

3: RESEARCH METHODOLOGY- THE CASE STUDY OF UiA's DIGITAL TRANSIT

3.1. Project Brief and Case Objective

Referring to the sustainable development goals (SDGs), in order to achieve Quality and equality in education, it was rational to understand the impact of digitalization diversely. As COVID-19 resulted in the global pandemic, the digital shifts in the higher education sector brought substantial changes in the society. Primarily, this is a cross-sectional case study at University of Agder, located in Norway, entitled to represent the understanding of the digital shift from Norwegian perspective. Secondarily, it is combined with available documented pandemic crisis data from global north and south from the chapter 1, represented various socio-educational issues and its dimensions, in the context of developed and less developed nations.

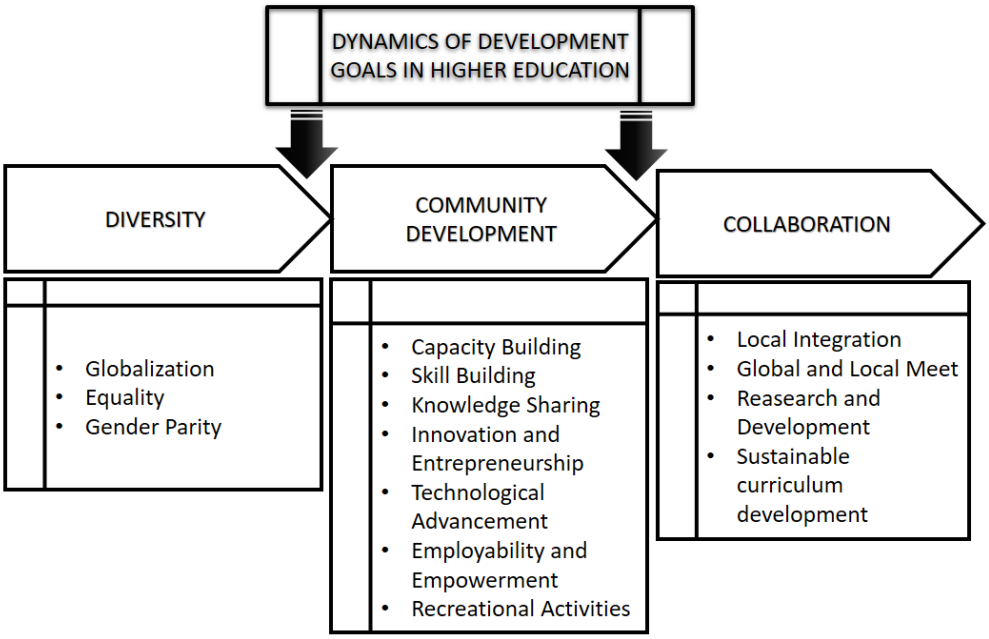

Figure 3.1. The expected transitions in higher education with digital shift while focusing on quality education prospectus.

Consequently, the above figure 3.1., represented the predetermined transformation at socio-academic level in terms with development goals and quality education such as; social inclusion stating diversity, development at the community level, and various phases of collaborations. In this model, diversity is interconnected with the development objectives under the lenses of open mindedness, internationalization, and equal opportunities for everyone; irrespective of gender, age, ethnicity and economic background. The 2nd phase showed the development of community through HEIs which must be capable of social empowerment. It can be accomplished through developing skills to generate income. Meanwhile, sharing the learnings with their communities by providing income opportunities to others, through entrepreneurship, technical growth and social innovation. The final phase consisted of local, regional and international collaboration which must be capable of a sustainable approach. This consideration facilitated me to draw a broader picture of the fundamental areas for the purpose of case analysis. However, due to the pandemic based digitalization in higher education UiA witnessed the institutional transformation, and faced persistent issues in accomplishing these development goals. Therefore, to simplify both benefits and detriments of digital upgradation in higher education at UiA, this project is indulged in concerning ICT notion in various segments of higher education, to answer on how the digital shift looked like? As it seemed to be necessary for learning the digital changes occurred during COVID-19. It was estimated to be evaluated later for the successful transition of digital protocol in higher education. Hence, determination of research question and specification of research problem is vital as shown in section 3.2.

3.2. UiA's: Research Problem and Research Questions

The research problem of the study was to identify the changing factors in higher education due to corona which developed certain institutional questions such as; what are the criteria of the transition and who were the stakeholders associated with fundamental changes in this process? The research problem was presumed towards the variety of factors affecting the digital transition at UiA due to the pandemic. The research questions represented, for instance; integration of stakeholders, as for some they faced deep concerns over digital shift in corona times in comparison with others. Moreover, those impacts on various stakeholders which were directly linked with pedagogical techniques, educational quality and skill requirements, for acquiring jobs and regional-national development. In addition, institutional

approaches to attain and sustain digital transformation are the key research questions, as shown in the below Figure 3.2. Further, section 3.3 signifies the sample recruitment methodology.

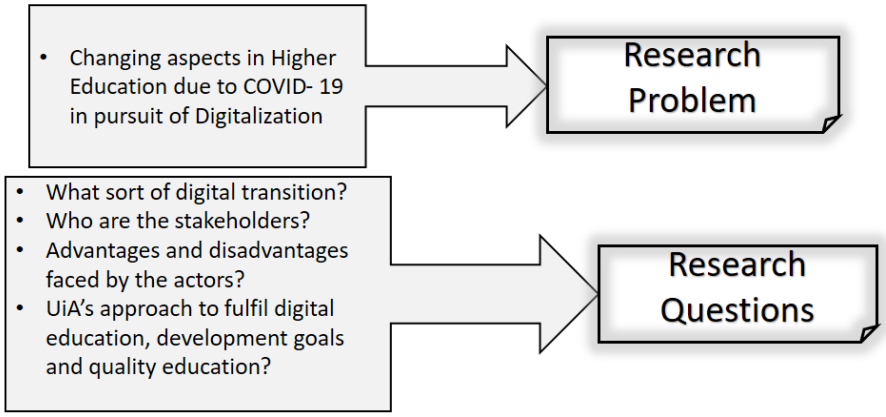

Figure 3.2. Specifications of Research at UIA

3.3. Research Samples: Size, Selection and Background

Sample selection was precisely driven by three basic educational stakeholders at UiA; students, teachers and other staff members which was non-random and implemented logically. Adjoining the inductive tactic to necessitate the interconnectivity of these participants, it was significant to select the departments or centres which included three of them inclusively. Hence, the recruitment of the sample size of 10 participants from significant departments was identified, to focus on receiving the departmental, administration, teaching and learning aspect single-handedly. These 10 respondents were the key coordinators and handlers at UiA during corona crisis management, within their specific departments. They were preferred to be selected based on their direct contact with the other stakeholders within or outside their department. As I estimated that they have their potential to represent every perspective, and they cover all other vital departments which contributed in dealing with the corona phase. For an overview, for instance, the key primary sample departments were recruited based on teaching and learning aspect such as; Multimedia courses, and other non-technical disciplines. At secondary level, analysis of administrative role was prioritized, hence the departments like 'PULS', (UiA, n.d.) Media Centre, Communication Office and Strategic Management were selected as information variants. In the last segment, the digital tools and

academic platforms such as; 'IT', and 'CANVAS' at UiA were focused. Significantly, recipient's expansive knowledge about their departments, core-actions and strategy initiated during the pandemic were the potential sources of data.

Accordingly, my prime choice was to retrieve data through qualitative means, and to understand the pedagogical related concerns. I divided it into two categories; e-learning courses and regular courses, and under these categories two of the candidates were recruited for the interview. Respectively, SU1 and SU2 were directly responsive to students and teachers on a daily basis, and had the potential to give the ground reality of the pedagogical and study programs related issues. Precisely, SU1 and SU2 were proficient in providing information for various technical or non-practical courses, moreover, whether they were hybrid or non-hybrid, synchronous or non-synchronous in undertaking. The recipient SU3 represented the media centre perspective, who fulfilled the capacity to facilitate the digital teaching within the organization, and at the same time capability to measure the integrity of digital communication and responsiveness in the pedagogy. SU4 from the department of strategic management was the point of contact for central administration of all courses, and in the digital shift respondent addressed the administrative and functional aspect of UiA. SU3 and SU4 were well-suited to describe the situation from administrative and technical point of view, altogether both facilitated the commencement of digital teaching. SU3 represented tangible means which included providing technology; digital platforms, equipment and online tools for teaching and learning. Wherein, SU4 facilitated for non-tangible platform which involved the strategic decisions for utilizing the resources effectively.

The next sample was the pedagogy department, and the participant was selected on the contrary of their knowledge on three significant actors in an academic world; students, teachers and administrative. Moreover, SU5 was one of the representatives of PULS-Centre of teaching and learning, who facilitated research and development in the field of pedagogy. In addition, recipients ensured the quality of the education through updated technology and global collaborations (UiA, n.d.). SU6 from the communication department, potentially reflected upon the brief understanding of digital communication, both from the internal and externally aspect of UiA. SU7 was aimed to get the response from social science understanding. The recipient's experience with sociology added, specific outlook of teaching,

learning and its implementation during covid. Sociology, as a department, included social connectivity, that is why it was necessary to know the consequences of immobility. SU8 represented the organizational standpoints, and policies during the Covid through the eyes of management, focused on the quality of higher education at UiA. SU9 personnel was related to CANVAS, the digital platform for teaching and learning at UiA. It was to know the transition in the digital platform, and its impact on various courses and its utilization in the pandemic. Lastly, SU10 the IT department as the name suggests, it created a domain for facilitating technology and communication to each aspect of the organizational function. Hence, this department had the capacity to depict the degree of technological intervention, and concerns associated with the incorporation of institutional activity. The discussion on the interview questions and the procurement to reach at the case analysis is shown under 3.4.

3.4. Semi-Structured Interview: Methodology for Case Analysis and its Significance

The semi-structured interview question was generalized for every department, while targeted to measure the outcomes through general theoretical analytics, as referred to Appendix 1. The questionnaire is divided in three segments; the first part of the questions probed departmental view point and individual observations during the pandemic period, while working with their particular department at UiA. This part covered the issues like challenges, opportunities, organizational functions, strategies, decisions and outcomes. It helped in understanding how different departments and stakeholders were associated with each other and to what extent. Then, the upcoming part of the interview questions consisted of development related questions, in order to gain specific case experiences. It was further required to analyse the factors of digital transit in higher education, through the focus on digital inclusion in different societies and countries. The final agenda of the study is to track down the changing aspects, and determinants responsible for the digital shifts. The prominent development factors included in the interview question were linked to perspectives; factors influencing higher education; learners, teachers and learning process; Local vs. Global integration; Diversity and Equality; capacity building. The last segment were conclusive questions with one word answers, also gave the recipients to express their

opinions moreover, helped them to conclude their view points, and also clarified the outcome of the interview for the study.

According to Thomas (2006), the general inductive approach represented simplistic and practical technique for qualitative outcome. Therefore, I decided to form standard phenomena referring to the interview questions, which helped in receiving specific explanation of the interviewees' experiences, during the pandemic. Altogether, the fundamental study began with cross-sectional case analysis of UiA through semi-structured interview, and then logically segregating the common phenomena from the interview in order to generalize and describe through narrative approach. The next part depicted the importance of cross-sectional case study in this scenario.

3.5. Criteria for Shortlisting Cross-Sectional Case Design and Methodology

In particular, 'Typical Research' (Bryman, 2011: 70) approach is the case design which was applicable here, conducted through semi-structured interviews with the timeframe from 45 minutes to one hour. The time varied as some departments had larger connotations to discuss upon, and also depended on the answers received from the subjects. Due to the corona situation, the interview was conducted over zoom and recorded over an external device with no internet. Since, this case was a representation of UiA's pandemic response. Thus, contextually fell into a wider criterion of department and favoured for extracting relevant information. Alternatively, UiA was chosen because of the relevant research question, which enabled me to find the complex juncture of my research problem through cross departmental analysis. This case study is essentially labelled as 'typical case' and analytics through 'external validity' (ibid).

Shortlisted for cross-sectional case design as the university's functionality contains strategic movement of various courses and departments. Therefore, digital impact in every section was also integrated with other platforms and stakeholders at UiA. If considered a particular department, then it would provide partial information, due to its limitations in relationships with other stakeholders. Therefore, a cross-sectional model was applicable here, for descriptive analysis on the fundamental understanding of the background in digital based education.

Moreover, it covered the notion of quality education for its relationship with various participatory actors. It is to learn the differentiated factors associated with the development agenda, concerning the validity and reliability of the case research. Depending on the outcome to assess research quality, this qualitative case-study of UiA is testified on the external validity category. The applicability of external validity as UiA case study can be elongated through an inductive approach. Whereas, the generalization of sample selection within one of the universities in Norway and its classification under corona centric digital shift, can be considered for enumeration purposes in higher education. The strategic elaboration on case study design, and the procedure to develop the outcome, through selecting samples and stakeholders, are fundamentally representing the digital shift at UiA. Further, collected response from various UiA's departments through semi-structured interviews consisted of focusing on development goals, education quality, and functionality of the university during corona. It assisted in shortlisting the factors in each department at University. At the end, logical assimilation of data through identifying common trends worked as the interpreter towards generalization.

For specific outcomes of the study, the fundamental research questions were enthralled at UiA which became the preliminary level of the analysis. Then, the end-results determined representation of transformation at UiA. The common factors are then processed, to gain generalization and all-rounder information towards the digital shift in higher education, from Norwegian perspective by UiA's case analysis. The outcome of the case analysis comprehended, on the common trends of determinants in quality-based higher education, by Nordic countries and global connotations due to the digital shift during COVID-19. The last section of chapter 3, shows the prospects of cross-sectional case study, in context of case analysis. Besides, the study limitations are also outlined.

3.6. Research Expectations and Limitations

My estimation on this project was to conduct a narrow study of UiA's as an empirical case, and then to draw a comprehensive illustration of the factors affecting the stakeholders. By highlighting distinctive phenomena in the theoretical framework, towards specifying the trends of digital transit at the end of the study. In order to simplify the findings on digital phenomena, and to figure out the digital transition in the post-covid era. Typically, I faced

psychological barrier and mental turmoil in focusing on my research activity, in the midst of a pandemic crisis and due to lack of social meeting. Additionally, the prominent limitations were that the interviews were conducted digitally which made the conversation limited to some extent, and sometimes in-depth inquiries on particular issues were dropped due to digital constraint.

The other limitations were, as refer to one of the disapprovals on the case study research, is its criticality to 'generalize' (Bryman, 2011: 70) which concerns its validity and reliability. Thus, focused on the outcome to assess research quality, this qualitative case-study of UiA was testified on the external validity category. Here, representation of UiA was unable to determine every cornerstone of the issues was a setback, however, according to Bryman (2011) the critics of external validity also specified the reliability of its results as every case is unique. Therefore, the case of UiA and classification of its variants, departments and subjects drew an outline for specifications, on covid crisis in higher education which can be considered for future research in a similar context. The Chapter 4 narrated the findings of the interview with digitalization related factors in higher education which was discussed in the Chapter 2.

4: UIA ‘s CROSS –SECTIONAL CASE ANALYSIS IN PURSUIT OF NORWEGIAN SOCIETY

4.1. Introduction of the Case Analysis

This chapter is going to reflect upon the transformational narratives described by the participants, due to covid outbreak at the University of Agder. The interviewees were the representatives of 10 distinctive crucial departments at UiA, responsible for taking initiatives, decisions and application of pandemic solutions at UiA. The descriptions were based on the experiences shared by them in accordance with the institutional responsiveness and departmental action-plan. Moreover, depending on the outcome of the decisions taken by the university, their learnings and future expectations are discussed by the candidates during the interview sessions. In general, research problem was raised demonstrated, “Changing aspects in Higher Education due to COVID- 19 in pursuit of Digitalization''. There are four rational research question based on which the semi-structured interview questions was formatted; firstly, the crux of digital transitions faced by various stakeholders; secondly, the key actors who were the forefronts of the digital shift; thirdly, the issues and opportunities that were identified from the pandemic situation; and lastly, the approaches by UiA during corona with ultimate narratives for future anticipation of post-corona, in terms of digitally based development goals and quality education.

The below table 4.1 highlighted the sample codes and the departmental aspect and area of the expertise of the respective respondents.

SAMPLE CODES	SAMPLE DEPARTMENT AND PERSPECTIVE
SU1	Multimedia and Educational Technology: e-Learning and E-teaching
SU2	Pedagogy Department of Education: Study programs and its teaching and Learning
SU3	Media Centre of IT Department: Digital Media
SU4	Strategy and Management: All courses
SU5	'PULS'- Centre for Teaching and Learning Pedagogical related technology and R&D, Educational quality and collaboration
SU6	Division of Communication: Digital communication
SU7	Department of Social Science: Administration view on teaching and learning
SU8	UiA ; Overall Organization and Leadership
SU9	CANVAS: Digital platforms, tools and communication
SU10	Media Centre of IT Department : IT-Technology

The findings served the interview questions which were distributed in three specific categories; the first section of the questionnaire depicted the organizational or departmental action-plan, in terms of various academic activities such as; communication, research, collaborations, pedagogy, and examination. The second part of the questions consisted of development and quality education related issues in higher education. And the last section, represented the conclusive outcome of the overall replies with the individualistic assumptions and expectations related to the question. In the below table 4.2 the interview themes and the questions relevancy are identified with the possibility of outcome in terms of research questions.

INTERVIEW SECTIONS	***IDENTIFIED KEY THEMES***	***INTERVIEW OUTCOMES***
Institutional and Departments	○ UiA: Pre-Covid scenarios ○ UiA's action plan: During Covid ○ Department responsiveness: During Covid ○ Identified Opportunities and challenges faced ○ Examinations and Assessment ○ Digital Pedagogy: Courses, Curriculum and Competencies ○ Digital Communication: Digital Tools and Techniques ○ Research, Development and Collaboration	○ What sort of digital transition in higher education at UiA? ○ Who are the stakeholders? ○ Advantages and disadvantages faced by the actors and key departments?
Development Goals and Quality Education	○ Digital Communication: Effectiveness in terms of Quality Education ○ Social Inclusion: Marginal and Diversified ○ Job skills and Job Markets ○ Globalization and Sustainability	○ UiA's approach to fulfil digital education, development goals and quality education?
Conclusive and Individualistic Opinions	○ Preferences and Expectation from Digital shift in higher education: Socially and Individually? ○ Partial or Fully digitalization in Higher Education? ○ Specifications for their choices?	○ Is it the era for the Digital reset at UIA? ○ What is the anticipation for the future of digital shift at UiA? ○ How digital transition looks like at UiA? ○ What are the unstable factors in digital transformation at UiA?

Basic Overview of the UiA's Action-Plan at Corona Times

To begin with, a fascinating description made by **SU3** was humorous to consider, he described that one of his colleagues from another Norwegian institution. He was conducting research on digital education for the past 20 years, stated that "Now they want us to do everything in 15 minutes, it's not right". Interestingly, it was the situation and happened to be true during covid outbreak. From the leadership standpoint, **SU8** detailed about the initial strategic move and ongoing crisis handling tactics. He stated that "at the beginning, University's responsiveness was framed with a Strategic crisis management team" which consisted of key personnel at the top level management representing significant stakeholders. **SU8** specified, "when the outbreak appeared to the other parts of the globe, the crisis management group and top most leaders at UiA were prepared with their action-plans". **SU8** said "the significant decision was to call the key employees at the campus" in order to assist the others to work from home. The initial decision, he specified, "shifted all the teaching into the online forum" and on other hand, **SU8** said that "thinking about student's mental well-being the campuses were kept open" while instructed to follow the social distancing measures. Nevertheless, he added that "the head of student leader exchanged information through various meetings" to conceptualize the further decision on "how to organize teaching and learning in the crisis moment", the recipient added. **SU8** signified that "UiA focused on their two important stakeholder's students and teachers". **SU9** comprehended it as "The cycle of significance" he labelled and stated, "for teacher's students are important and for students it is social well-being".

When asked about the distinctive nature of strategies as the pandemic continues, **SU8** replied that "the approaches were similar as compared to the early plan", moreover due to the prior experience of initial pandemic, "managing crisis and the basic strategy remained unchanged" he clarified. The participant elaborated on the strict protocol maintained by the university in terms of, he specified, "number of students permitted to be on the campus auditorium and number of students digitally" which were effectively pre-determined. However, the campuses became closed on several occasions when the infection rate peaked up. **SU8** highlighted that "there were almost zero infections at the campus till Spring 2021". One of the incident was mentioned by **SU8** that "when few students appeared to be ill, they were tracked including

the fellow students, and teachers whom they contacted", he said "fortunately the sick student tested negative". The UiA's dominant hurdle was to provide students with laboratory equipment which they had to discontinue initially. **SU8** mentioned, **"**especially, field work for teachers and nurses were terminated**",** then he notified that "the initial fundamental issue was planning the time frame of the action-plan", as he said "the pandemic was uncertain in nature, so how long we must carry out the plan". However, **SU8** implied "we were ready with our crisis management team until February, and as soon as March occurred, the institute started following the plan".

The Fundamental Digital Transformation at UiA During Corona

The first area of speculation was the digital transit within itself, which means digital intervention in the HEIs existed during pre-pandemic but in distinctive outlook. It was identified by **SU9**, he said, "it's a myth that pandemic lead us into digitalization in higher education", the recipient elaborated that "it was already existed from past 25 years, particularly in Norway", he clarified, "the digital dependability went unnoticed by the faculties". **SU9** mentioned that "except for lectures everything was digitized in some or other way" and now due to corona "the last phase i.e. the lecture part" also tends to transform. According to **SU9**, UiA being aiming for digital transformation for a long time, it was digitally integrated for he specified, "feedback mechanism, submissions, formative assessments and discussion forums mainly". As I indicated in the beginning of chapter 2, transformation is always challenging and HEIs are progressing digitally. During the corona pandemic, the potentiality of digital usage at UiA extended to the final stage of teaching and learning.

However, due to the emergency from the corona outbreak, the whole system was forced and expected to change overnight. Although as claimed by SU8, over the preparedness for corona, the pandemic positioned itself and struck the university's teaching activities. For the lecturers, it was the most transitional moment in three dimensions; pedagogically, psychologically and literally. Seemingly, Styhre (2002) also recognized the complexity of organizational change which he represented through the example of Alpha organization' that in spite of assistance and motivation from organizational leaders, the organizational functions were disrupted in various ways. Indeed, corona surged for digital transformation at UiA from various levels which impacted the stakeholders in many ways.

According to the author, the transformation is generally complicated in nature due its involvement with inequivalent factors and mistakenly common strategies are assumed for all purposes (ibid: 348). That's why, I assumed that there is the randomness of obstacles and opportunities, when it comes to various stakeholders which makes the digital transition at UiA a complicated procurement.

It seemed that university had a well-defined action-plan to counter covid situation, although the plan existed but the integration and individualistic acceptance, for the immediate implication kept many jarred. Significantly, the strategies for initial plan and latter phase remained unchanged but the initial experience enriched the stakeholders, with more definite preparedness in the later stage of the pandemic. The students and teachers were the main point of concern as students were susceptible to stress, and teachers were baffled due to immediate requirement to transform pedagogically. Hence, primarily it is important to understand the digitally dominated work culture at UiA to understand its impact on teaching and learning components. The above sections an and b, are the first phase of identification of various stakeholders, as referred to the research question. Wherein, identification of issues faced by the stakeholders during the pandemic are highlighted, triggered the beginning of a transitional process at UiA demonstrating the LMS approach (Misra et al, 2020). In this forthcoming part, the significant areas or department linkages with the digital transition are portrayed. Indicating the influencing issues, advantages and disadvantages faced by these departments, resembling the research question. Primarily, started with the phenomena of advancing digital culture which was the outcome of the corona crisis.

4.2. Evolving Digital Work Culture at UiA

With reference to chapter 1, IKTPLUSS was launched as a collaboration scheme in the pre-corona era aimed for ICT resolutions in businesses (UiA, 2014). However, flexibility in the form of work from home culture was declared during the pandemic. It is required for a solution in online teaching and learning protocol. Other than that, co-creational activities, research and collaborations along with every administration activity also succumbed to evolutionary digital work culture. One of the example on digital collaboration was 'World Learning Summit 2020' which was digitally organized at UiA. Under this theme, the interpretation of basic transformation in the work environment occurred during corona. Whether due to the

strategic action-plan by the stakeholders, either UiA as a whole institution or from the consequential elements of challenges, faced by them are considered. The area of research and collaboration are focused upon to understand the outcome of academic activities in a newly evolving digital culture. The following are the questions approximating the work culture phenomena.

Theme 4.2.

a) *Is the work culture changing into fully digitalization and everyone must be prepared for the same?*
b) *Whether the Corona times make the digital transition faster or slower?*
c) *Is there any major impact in the co-creational activities, research and collaboration sector due to digital work culture?*
d) *What are the collaboration model in the upcoming future?*

Distinctive Versions of Digital Work Culture Transitions during Covid-19

All the respondents approved that the corona situation made the progression towards digital transition much faster in higher education at UiA. Moreover, the stakeholders also described the positivity and downsides of "agile" **(SU10)** "home offices'' **(SU8).** For the teachers and administrative staff, the lectures and daily meetings or discussions were shifted to zoom lectures and zoom meetings respectively. As **SU1** mentioned, "I get a lot of time to prepare for my lectures with my colleagues'', she continued, "we bring food and coffee during our online meetings''. She represented zoom call became the virtual space to collaborate with the faculties while being in a homely environment. It was highlighted in the chapter 2, during pre-pandemic era, digital culture was merely associated with the notion of social media platforms, as (Zachos et al. 2018) admitted that OSN became the tools to communicate and collaborate in the higher education, and Paladen (2018) approved that the digital platforms became the marketing channel for the universities to pass on information digitally. On the other hand, OSN activities were considered informal in terms of educational institution's integrity (Zachos et al. 2018: 13). However, due to covid the work culture became flexible and casual in nature. As **SU10** also stated "work culture is changing it is more agile now". It was confronted as the major form of distinctiveness which was "corona triggered" **(SU1)** digital work culture. **SU2** added "there is no other alternative to sustain in this situation" and "people don't have much of an option as of now" **SU3** also outlined. The other matters like collaboration and research

activities also shifted to international virtual seminars, and moved to online mode in an informal setup. As attendees are attending virtual conferences from their own home spaces. Similarly, Sobaih et al. (2020) also questioned the uprightness of social online platforms like 'Facebook and WhatsApp, Google Classroom and Zoom' in an HEIs framework

COVID-19- Impact of Digital Work Culture on the Stakeholders and their Activities

Due to already existed social media based digital culture from the perspective of communication, **SU6** informed that "digital communication department was working like before, nothing changed" as digital communication was already the interim part of the external and internal communication of the organization. **SU6** specified that "but the amount of communication was increased" which was due to digital lectures and research online activities. Agreeing with Zachos et al. (2020) I presumed that digital culture is much more than digital communication through virtual platforms which surfaced during the corona period. It has both positive and negative impact on UiA's stakeholders Neuwirth et al. (2020) also agreed with the existing breach in terms of quality education.

Advantages of Digital Work Culture at UiA

When looked at the positive side, from teaching aspect, **SUI** stated "I saved so much travelling time catching bus to my work place" as "zooming is the only requirement", **SU7** also agreed with **SU1** on similar stance said that "it reduces the need to travel to workplace", signified that it is due to "flexible in teaching methods", **SU7** added. Relatively, from the research and collaboration standpoint **SU2** recalled her earlier pre-covid conferences, she stated, "as PhD student I had to travel and bear the seminar cost", and "now digital conferences make it more convenient and free access from everywhere" was also admitted by **SU10.** He mentioned that "the PhD students travel to their home countries for 3 months", he continued, "still they can digitally continue and its cost-effective". As per **SU7,** the online interaction and online engagement schemes are "rather effective options". Whereas, **SU8** also represented the advantage for the lecturers, he said "they can attend conferences without missing out on their lectures" and he mentioned that "this practice is sustainable for many as well". He also added that "researchers no longer require funding for travelling and can attend seminars based on their own priorities".

Disadvantages of Digital Work Culture at UiA

On the downside, these home offices were also an imbalanced and unsuitable form of work environment for many, both **SU1** and **SU5** agreed that managing home space with the working spouse and children was one of the issues faced due to work from home culture**. SU1** expressed, "my husband is working too and children were also learning from home" for her it was very chaotic which became an additional burden for her, and **SU5** mentioned, "for most teachers working home with the children at house was problematic". At individualistic level, **SUI** and **SU2** represented distinctive experiences in teaching and learning. Particularly, **SUI** expressed her greater challenge at the time of digital shift during the pandemic, "it was the amount of managing people I have to deal with every day" which was increased due to "synchronous learning methods" she stated. For instance, **SUI** also dealt with online behaviour of the learners such as; their inactive participation and online absenteeism, especially when she clarified "when I was tutoring international students from the global south" which was however due to inaccessibility and lack of infrastructure. Whereas, **SU2** emphasized the issues at the course level, according to her "the challenge was to implement online pedagogy" which was due to transformation in the course structure, moreover she said, "the teachers had to be constantly attentive towards the learner's requirement", due to the persistent changes in the academic digital model.

Research Work Culture in a Digital Framework at UiA

Strategically, from the perspective of research and collaborations, **SU7** stated that "social anthropological research is affected" and he continued "qualitative research is affected largely as meeting people is prohibited now". As claimed by **SU7** "qualitative interviews are appropriate in a digital framework but also differs from topic to topic depending on its suitability". While **SU4** indicated the effect on the researchers during corona which were both positive and negative as he said, "some of them are unable to do research work freely and while others got more time to write their research" which was due to isolation.

The theme of digital culture is the centre point of the digital transformation which covered the research question; what the shift looked like? The digital shift became an opportunity to attain sustainability, in terms of less or necessary travel for academic activities like research and collaboration. Seemingly, qualitative research was easily adaptable in a digital framework as compare to field or ethnography based studies. As the work culture became flexible, less

travelling also meant work from home alternatives for the local employees at UiA. It had both positive and negative impacts depending on the domestic atmosphere, although it's a flexible option but infeasible for many. In accordance with Neuwirth et al. (2020) statement on delivery of quality education which seemed to suffer due to the social or domestic environment. In turn, the informal setup could have a good or bad influence on the teaching and learning atmosphere.

4.3. UiA's Covid Crisis: Digital Pedagogy, Curriculum and Course Design

In chapter 1, I have mentioned about UiA's predetermination to evolve as a digitally advanced university, and it accomplished its vision by modelling the first fully online course namely 'Road Traffic and Vehicle Study' in association with UIA's 'Media centre' and IT department, and 'Norwegian Public Roads Administration' (UiA, 2015). However, the progress in digital innovation and pedagogy was slow paced due to the existing traditional prototypes of the course structure. The corona crisis enforced the teachers to shift their course plan in digital format. Hence, the below theme is considered as the fundamental questions, due respect to the overall teaching and learning functionality of UiA during corona. The recipients were enquired about their departmental issues, and recoveries during the corona which was based on the comparison with the pre-corona period. Accordingly, the stakeholders who were impacted had shared their departmental and professional experiences. More specific questions were asked in the context of digitally hybrid courses, it helped the participants to explain the pedagogical aspect in detail.

Theme 4.3.

a) *From the departmental organization point of view; what was challenging and lacking during the immediate requirement for digital transition during the pandemic?*
b) *As related to your department, which group, stakeholders, associates and department in university are worse hit in the pandemic and vice versa, when it comes to sudden digital move?*
c) *Do you think all courses irrespective of its features whether; artistic, technical or theoretical can be developed further for hybrid courses and you see a potential of technology and tools in higher education?*

UiA's prominent struggle was integrating teachers in digital ways, and along with **SU8** all other participants represented similar concerns over the incorporation of the teachers, as many of them were used to traditional setup and unaware about the utilization of digital tools. From the pedagogy aspect **SU9** remembered the pandemic outbreak, he informed, "and the next step was to prepare the faculties for online lectures", as most of the teachers were newly introduced to digital approach in teaching. **SU8** approved, "we were well aware about the traditional face-to-face mind-set of the UiA faculties" and "we provided our teachers with online pedagogy assistance", he clarified. On the other hand, **SU9** depicted that "initially it was very chaotic, I used to get a lot of phone calls". **SU8** also emphasized on background responsibilities which included purchase of available technology, and tools in order to support particular course requirements. **SU8** explained the fundamental concept and technique to conduct online classes i.e. formatting the studies into "webinar courses'', moreover to assist the study programs, he stated "the background team were appointed to plan and schedule the digital classes".

Wherein, **SU2** and **SU7** portrayed the fundamental issues in the covid times, the limitations were mainly for the field courses, **SU2** illustrated "humanity teachers of UiA have to go to schools to collect ground reports on the learner's issue" and **SU7** also indicated that "practitioners of social work and nurses had to visit the field spaces''. Along with **SU2** and **SU7, SU8** also mentioned about the disruption in the **"**Laboratory Activities". Similarly, as refer to chapter 2 (Quay et al., 2020 & Beery, 2020) suggested that the practical based studies which included physical presence of the peers comes under OEE'. The authors recommended these activities as a vital academic creation, and they also found that during the corona crisis the experiential learning was challenged.

Additionally, **SU1** talked about the psychological impact on both teachers and students, she said "human to human connect was missing". Relatively, **SU2** represented student's perplexity to cope with the teacher's irregular study plans, and also lecturers wanting to ensure that more students can be reached. Garrison & Innes (2005) also acclaimed to have operative digital layout which must be structured for efficient interaction on a virtual platform. According to the authors, the effectiveness of the digital framework must result in psychosomatic connectedness with the participant. It was lacking during the pandemic and

SU2 confronted that "along with her colleagues, they look forward to a blended session as they like to meet their students".

The students and teachers were the front liners, wherein students were the recipients of the circumstance and lecturers were the players. Pedagogy was core elements which was effected the most, due to its interrelation with other factors of university functionality. These components are varied in terms of study program and characteristics of a subject area. However, the significant departments at UiA along with the faculties worked towards the pedagogical strategies during the pandemic which are discussed below.

Role of Distinctive Stakeholders: UiA During Corona and Beyond

The specification on the roles of the stakeholders outlines the research question mentioning that who are the stakeholders responded to the corona crisis as background supporters.

i. UiA's PULS

Commonly specified by **SU5, SU3, SU9** and **SU10**, PULS prepared tutorial videos to assist the teachers to formulate their lectures technically. Along with **SU5**, **SU3** informed about the course which started during the previous semester by PULS at UiA. **SU3** told PULS and the media centre "worked together to build educational videos" which is to spread technical knowledge within the faculties. Moreover, **SU3** claimed that "If I compare last year and this year, the current course participants have more knowledge".

ii. UiA's IT Department

SU10 described that during May 2020 which is "before the summer vacation" they were "expecting a lot more traffic during July 2020", he stated "we did not have vacation". However, he said, seemingly in July there was "very little traffic", and as August semester started the rooms were reserved from "morning to late evening and even on weekends". **SU10** explained about the functionality of the IT department during the invasion of pandemic which was rationally focused on, he stated "quality of hardware in different streaming rooms and amount of services they can provide at a time". He elaborated about his workplace and media centre's substructure which included video rooms with options to record lectures

and live sessions, he stated that “I knew the succession rate” of the learning protocol as he labelled it as a “controlled environment”.

iii. UiA’s Media Centre of IT Department

From the pre-pandemic era, UiA facilitated its staff members with TV studios to record their educational lectures. **SU3** mentioned that “these studios have assisted the teachers to learn and practice the setup” which they had learned through tutorials, and he precisely told that “before corona period the reservation was once or twice a week”. Moreover, **SU3** noticed that during the pandemic the bookings were doubled to “10 to 12 bookings per week”, he stated. The media centre provided advantageous facilities to its faculties, he said “these are self-service studios”. Adding to it, **SU10** also mentioned about one of the department which was responsible for distribution of video rooms, and they worked together with two or more persons to carry out the tasks as per their pedagogical requirements. For instance, **SU10** stated “administrators thinking which room has a camera, and how can we fix this”, then **SU10** compared the initial situation of corona phase, he added that “later these issues started working out in a concrete model” as initially some rooms were unequipped with cameras.

COVID-19 Crisis: Digital Pedagogical Techniques and Learning Model at UiA

This part represents the pedagogical approaches of UiA during corona which fulfils the research question criteria of accomplishing academic requirement.

i. ***UiA’s Teaching and Learning at Corona Crisis***

During the initial days of corona outbreak, **SU10** indicated by referring to a study on the video production, it was found that he stated, “the quality of online lecture standard was not up to mark”. Along with **SU3,** both **SU8** and **SU9** also implied that it was due to the fact that teachers were using similar classroom based face- to- face techniques for virtual live lectures. It was seen that digital communication and teaching must accomplish a two-way communication mechanism which should include student engagement and participation in the learning. **SU5** clarified “student interaction, participation through engagement activities are the essence of teaching” so that the centre point of the course design revolved around the teacher’s strategies, he specified,

“it must include online group activities and breakout sessions for student’s interaction” as the recipient indicated on the learner’s plea for more online activities, by referring to the information from the institutional sources.

In common, Cangilia et al. (2018) also discussed about ‘glocal model’ which have the potential to adjoin the students learning through engaging them in a digital tool depending on the concept of the study program. As the authors recommended glocal approach for its capacity to enrich education in terms of technical advancement. Both **SU1** and **SU3** also agreed that digital mode of teaching and learning has new scope to peek into, **SU3** said, “the situation discovered a more productive way of teaching rather than the traditional non-technical way”. In addition, **SU1** also believed that digital communication must be two-way, she said “an online learning platform must include interaction”.

The pandemic challenged both teachers and the administration team which was highlighted by **SU2** and **SU3**. **SU2** depicted that for teachers the basic pedagogical techniques have transformed due to online shift of the course, she said “every now and then the teachers have to constantly change the academic model of the course”, whereas, **SU3** identified various teaching modes within the digital framework, he explained “many of them are hesitant to record their lectures” as he differentiated that “pre-recorded version of teaching and personalised live verbal interactions are totally different approaches in a pedagogy”. **SU3** stated, “some of them preferred the communication based teaching, for them they got the option for live streaming and teachers who agreed to record their lectures received both recording and streaming options”. Additionally, **SU3 and SU9** also pointed out that they received enormous emails and questions asked for assistance. **SU5** clarified that “the educational tools such as zoom, canvas and video teaching facilities were available well in advance, he specified that “change on individualistic level was harder for most of the teachers and there was lack of strategic mind mapping”. Significantly, **SU10** specified that “teachers mainly had to plan their lectures and recordings in advance” is one of the crucial reasons.

ii. ***Learning and Teaching – Adaptable Models During Corona***

Constructively, **SU1**, **SU7, SU8** and **SU3** described their teaching and learning prototype which they started practicing during corona for student engagements protocol. Wherein, **SU1** stated, "I develop a social constructivism approach in my teaching" where she insisted student engagement was planned through an online discussion forum and students were assigned to accomplish the task on the same day", and thus she said, "I use to keep my lecture intact". Similarly, **SU8** spoke about "Seminar Lectures" and **SU3** marked prominent exemplar on newly introduced "laboratory based teaching". Along with **SU8**, **SU9** also clarified on UiA's "seminar format-20 minutes" as students tend to disconnect in a long 3 hours zoom meeting. Additionally, teachers considered alternative solutions in "Pedagogy and Didactics depending on the student's number and courses", **SU9** specified. Swan et al. (2017) also emphasised on the digital curriculum must consist of shortened study prototypes with engagement activities and interactive sessions. In relation to **SU1**, it represented the requirement for broadening and innovative reflection methodology. She specified, "students were motivated to share empirical cases, personal experiences or paraphrasing of the content". While **SU8** highlighted the implementation techniques of digital pedagogy "I pre-recorded videos and it was viewed 8000 times, the students are watching the videos, mostly during the examinations, it is very helpful", he continued "and I give case studies to solve after the lectures". Thereafter, **SU3** also claimed that "the students go through the instructional videos course" in the beginning of laboratory subjects, and "later to pass they had to attend physical examination, by maintaining social distancing norms". Both **SU8** and **SU3** expected his students to watch through the videos before appearing for the face-to face lectures or examinations, as **SU8** said "it is important to encourage the students through challenges" which is a necessary teaching technique, therefore, he referred to his strategy of conducting "online seminars and Group activities'' and later he use to provide reflection and feedback to the students on their performances. **SU8** described his standard techniques, for instance, in "Statistics Subject", he used scientific papers called "scientific compass" as the fundamental format, he instructed students to present their paper within the limitation of 6 pages. Additionally, in a posters preparation he stated, "you have to use regression analysis and standard deviation". **SU8** described another teaching framework of "five weeks' tasks" which used to be

followed by implementation of theory, he stated, “we should increase such approaches in teaching”. Hence, **SU7** depicted one of the digital possibilities under the hybrid learning phenomena, she said, “her simulation program of social work course consists of recording the stimulation videos then analysing it”. These pedagogical techniques and strategies outlined the context of Xiao (2017) where he signified the focus on learner’s study behaviours and patterns, so that the lecturers can develop relevant engagement activities and course curriculum, in lieu with the outcome of the courses. It provided more opportunities for conducting blending sessions in the pre-pandemic era, as it was seen that there are a lot of gaps in terms of course traits and study structure.

The teaching and learning was most affected at UiA, due to lack of preparedness and constricted mind-set of the lecturers towards the traditional ways. The initial stage of the pandemic was difficult for the teachers to respond on the change. However, in the later phase, utilization of tutorial videos with training course helped the teachers to cope up with the changes. All the courses shifted to hybrid and asynchronous program, certainly some practical courses suffered due to lack of practical training, which was then immobile for a while. The digital pedagogy was re-invented to seminar-method and lecturers were given the option to pre-record their lectures, followed by tasking assignment on canvas. While others received alternatives for live streaming their lectures, and planning their engagement activities on canvas or zoom. In order to achieve the target to empower the teachers; PULS, IT and Media centre coordinated to form a pattern of pedagogy.

4.4. UiA’s Digital Examinations and Assessments

Whether digital examination or home examination is better than the traditional ones; was one of the fundamental questions asked to the participants. The objective of the question was to find out whether the transformative notion appeared within the period of ongoing pandemic, in the area of digital examination and assessment.

Theme 4.4.

a) *Whether digital examination and home examination are better options than the traditional examination ones in terms of student’s fair evaluation?*

b) *What are the roles of "Canvas" and "Inspera" as the examination tools?*
c) *How was the examination and assessment system evolved during the pandemic? What were the challenges?*
d) *What is the future of the examination in a new digital framework?*

It was found that digital examinations and home examinations were conducted at UiA from a constructive period of time, as in the year 2015 UiA recorded the highest number of successful home examinations and digital examinations (*University of Agder*, 2015). Due to the pandemic the standardization of digital examination and assessment prototype was shaken and featured for another leap of transition. Many examinations were cancelled or postponed due to corona and declared 'outdated 'and courses like sports, music, health and arts faced issues in the area of assessment (Haldammen, 2021). All of the interviewee's supported the concept of pre-pandemic digital examination and home examination, they confronted many issues during the pandemic. As a result, many teachers along with technical staff at UiA came out with temporary solutions.

Pre- COVID- Examinations and Assessment at UiA

In the previous discussion it was shown that formative and summative assessment were the part of Norwegian Digital portfolio system (Dysthe & Engelsen, 2004) and it was represented by me that in the pre-pandemic duration digital examination evolved through home examinations, PowerPoint presentations, oral tests and written assignments. Similarly, both **SU7** and **SU10** believed that the students must be evaluated in the notion of their capability to represent their knowledge in a limited time frame without any help. **SU10** specifically claimed that "the examination is a system which measures the knowledge of a learner in a limited time frame from 3 to 4 hours" and **SU7** indicated that "there are various formats of group and collaborative work" and mentioned "the individualistic assessment is equally crucial in an examination framework" which was also portrayed by (Dysthe & Engelsen) as they clarified that the digital examination was modelled for feedback and collaboration motive. In the traditional setup of partial digital examination, the final examinations were mainly the outcome of whole year assessments and preps (García et al. 2021), mostly the 'formative assessment' (Dysthe & Engelsen, 2004) were done digitally before the corona in Norway. In relation with García et al. (2021) **SU5** also described the protocol followed by many

universities in the US, he stated, “the grading system, it was designed to participate and earn points throughout the year and ended with one conclusive final examination”. **SU5** mentioned that “the digital formative and summative assessment were already part of Norwegian grading system” and as mentioned earlier by me that at UiA the digital assessment has been practiced since 2015 (*University of Agder*, 2015). Significantly, **SU10** compared that “digital examinations are similar to traditionally paper-based examinations”. I think it is a valid point to consider because the mode of submitting examinations was digital, but the protocol of examination was based on traditional notions as mentioned by **SU7** and **SU10**.

In relation, **SU5** elaborated on the pre-covid examinations at UiA “usually students bring their laptops in a digitally controlled environment equipped with technical assistance provided by IT staff” which was to correct the technical related breakdowns during the examination. **SU10** also approved the responsibility of IT department which is to provide the basic system and secured infrastructure to conduct the digital examination, **SU10** specified, “it is to ensure learner’s inability to communicate and access information during their digital examination”. Additionally, the role of “Canvas” (Digital Platform) in examination and assessments is clarified by **SU9,** explained that “Canvas is a platform which validates the candidate to be eligible for the final examination” and the criteria is to get scored in all the tests throughout the semester as canvas indulges in portfolio assessment’ (Dysthe and Engelsen, 2004). UiA’s 2014 agenda of digital examination was to facilitate written examination submission, its online evaluation and digital procurement of the whole examination (*University of Agder*, 2014). Therefore, **SU9** also stated that “Inspera” is a form of home exam with a digital framework for the purpose of facilitating the submission of the examinations Alongside, **SUI** validated that “e-teaching disciplines and its assessment criteria were well-defined” from pre-pandemic era. In contrast, **SU5** specifically clarified that “UiA was practicing digital examination from a long time but in selective courses”, García et al. (2021) also indicated that the final examination is the outcome of various assignments based on the course goal as some examination consists of essay question while other with are objectives and open book examinations. **SU5** mentioned “about the subjects like Mathematics which was challenging to conduct digitally” during the pandemic as the digital tools were required to solve the formulas systematically.

UiA's Examination and Related Issues during COVID

When enquired about the transformation in examination protocol, the recipient described the examination model applied during the pandemic, **SU10** stated that "the digital examinations were conducted like before but the rooms were more spacious" and for several other programs online based oral exams were applicable. Additionally, **SUI** highlighted the issues and protocol followed by the international students, she stated "while lockdown gave no other options but for careful planning, information sharing and implementation" as for instance, she informed that the students who travelled back to their home countries, she stated "they had multiple options such as; going to the universities in small numbers and appear for the traditional examination protocol". **SU1** also depicted that "students who are willing for home examination have to equip their rooms with camera and screen setting right", so that examiner can view the whole room and monitor the student movement. Relevantly, García et al. (2021: 89) illustrated 'E-proctoring' which was common practice during corona pandemic, considering authors claimed that home examination protocol is non-suitable and inconvenient for many students due to various reason such as disability issue, internet connection, inappropriate device and requirement of multiple devices. Moreover, the authors also showed lack of mass conduction of examinations which disrupted the formal examination protocol, as the universities had to adapt flexibility while considering these factors. Authors also represented that digital home examinations need to fall under the introspection of teaching methods, suitability and validity of the evaluation (ibid).

SU5 also spoke about the risk of home examination setup, he said "the discrepancies in internet connections are one of the issues". UiA's main issues were identified during the pandemic was the validity of the evaluation process based on the pedagogical framework, and fulfilment of course objective in a particular study program as **SUI** claimed that "in the e-teaching courses and pedagogy, students are informed about the program outcomes and course expectation" which was under the digital framework, however, she said "it is inapplicable to other face-to-face study program". In a similar context, I represented that pedagogy and course outcomes are fundamental decision makers of examination protocol, wherein García et al. (2021) proclaimed that evaluation differs in aspect of subject and course design. There were many speculations and oppositions on the digital examinations as **SUI** stated that "many of her colleagues are against it". As referring to García et al. (2021), as per

them the examination must be well understood for the students in context of study program, significantly digital mode of examination should win trustworthiness and build security with the students and the teachers. Therefore, according to **SUI** "digital exams must be conducted through strategic planning and people's willingness for the change" and **SU2** also added that "although there are digital examinations and home examinations" she thinks "there are more variations required in the evaluation process as claimed by (Gracia et al., 2021). **SU2** stated, "mode of examination needs to be examined thoroughly with every subject area and courses". **SU5** also agreed that "each subject examination protocol differs depending on the subject traits" and similarly, **SU4** exclaimed that" digital examinations have the possibility of increment in the near future" stating "it is required to design the examination as per the course's end-results".

Examination Model in Corona at UiA

Apart from the oppositions, on the perspective of subject courses and individual preferences, **SU7** approved the increment in possibilities of susceptibility towards cyber threats and **SU9** outlined the security concern related to digital examination. For instance, **SU9** illustrated, one of the examples from the examination point of view, he mentioned that "one of the faculty selected an oral examination through online" but as per him, "it is inappropriate in the spectrum of examination censorship". Interconnected, I have mentioned similar as referred to OECD (2018) that the digital policies must consist of rationality, agility and ethics, and as I depicted earlier that personal security in the form of data sharing must consist of inclusiveness and identification of individuals. **SU9** also took a similar stance that "examinations on Canvas are inconsiderable as the students are non-randomized and lack censorship in its functionality", however, it was due to the pandemic.

Relatively, **SU10** expressed about the precaution measures taken during virtual oral examinations to ensure "no cheating", he explained "student's picture was mandatory to ensure, the participant is alone and not receiving any external help". Alternatively, **SU4** depicted a form of gap to overcome in the area of digital examination, stating "there is lack of training in conducting online examinations". Additionally, in terms of security tactics during the pandemic, **SU8** in Mathematics examination separated digital examination tools and strategies to conduct digital examination. For instance, he stated that "there are digital smart

online tools for mathematics and students can get the math's problem solved by just clicking the picture", S**U8** added "right tools with academic values" are required and insisted couple of solutions such as, he stated "the questions can be rephrased or in smaller text, not all students receive similar questions". As a result, students are discouraged to attempt cheating due to lack of time, he stated. Hence, he wanted to focus on smart solutions to the examinations.

Primarily**, SU9** considered, "digital examinations are better, he described that "at least 70% traditional examinations were held in huge auditoriums, or rented places outside the universities with IT staff to assist" which significantly closed any access to online media during the examination. Practically, **SU8** analysed his protocol for examination, he stated "to execute 6 digital examinations throughout the year and then include the scores in the final grading. Otherwise, **SU5** considered digital examination was advantageous for the students and teachers due to the minimal logistic efforts such as; "distribution of hard copies and shipping them for evaluation", **SU5** also added "many students have hard to read handwriting" and through digital way the teachers are non-perplexed during verifying the answers.

In the pre-corona period, the digital examinations were the part of digital pedagogy and evaluation process which was in the form of home examinations and auditorium based digital examinations. Wherein, the ideology of examinations was similar to traditional beliefs such as representation of memorized knowledge in a limited time. The digital platform was used to procure the task submission and to endure digital assessment. However, the pandemic demonstrated the requirement to transform the examination which must be suitable for the digital pedagogy and subject relevancy. Moreover, examinations are reclining towards the phenomena of no examination or less examination in relation to the traditional concept of examination notion. The context of evaluating peers is now potentially, transforming to focusing more on evaluating conceptual and implementation ability of the learners in a digital framework in the post-pandemic era. There is potential to develop examination related secured digital tools and techniques to attain a sustainable approach. However, there are additional factors namely digital security, and data related concerns which emerged during the pandemic crisis.

4.5. Digital Communication: Digital Security and Technical Awareness at UiA

The specified theme of digital security is based on the digital communication model of teaching and learning at UiA. The question is targeted to get the information of digital security maintained, and corrected from the pre-covid era until the period of ongoing pandemic. The vitality of the theme is to identify the emergence of any new security issues which must be considered in the transmission process. Moreover, an update on the security awareness among the stakeholders at UiA is verified. The digital communication in higher education is also related to the security concern especially in terms of critical expression, hence the digital communication during teaching and learning is explored through the understated theme.

Theme 4.5.

a) *Digital security is an emerging concern and with wider matter of concern when it comes to content sharing. Do you think digital intervention in education disrupts personal safety and hence security concern risks the nature of quality education which consists of critical thinking and freedom of expression of an individual student or teacher?*
b) *Do you think digital media and communication is a one-way tool and have its limitations such as in terms of feedback mechanism, critical thinking, freedom of expression, connecting socially and building trust, security and humanness?*

The 'National Security Authority (NSM)' is the centre point for Norwegian cyber security in the ICT framework which contains all the universities in Norway (*University of Agder,* 2014 September 26). October 2014 was declared as 'National Security Month' and the program was to educate and assure for cyber security which was coordinated by 'Norwegian Centre for Information Security (NorSIS)', it covered topics like digital media security, cyber threats and computer hacking, significance of computer science and data security (ibid). In relation, when it's about digital security from HEIs perspective, **SU8** spoke **"**the scenario of 10 years back, it was more of working on effective digital tools". **SU7** referred to some articles in "khorono (Portal from Norwegian University)" she implied to one of incidences like "risking of cracking jokes during online lecture" she added, "it can be a threat, never thought before" and she agreed that "it is now a threat as the lecturers are not aware where the videos are being passed on". Relatively, as I mentioned earlier about the NorSiS survey report' which depicted that online users with higher education have more knowledge about security. From

an HEIs viewpoint, top educators have more knowledge about digital security than middle or lower level subordinates (Gunleifsen, 2018). It is also shown by the author that gender gaps existed as more men have security awareness than women, and moreover, the gap is due to the psychological obstruction mainly, Author stated that it is the responsibility of the institutions and service provider (ibid). It is seen that digital security awareness was uncommon and unknown to most of the online users in the pre-covid era.

However, **SU8** showed the significance and emergence of new issues in digital security at HEIs, while comparing pre-covid with the current covid times. He recalled about his past teaching techniques in the pre-corona period which included using online tools in association with university of New castle, he said, “and data of the Norwegian students was accessible for them”. **SU8** clarified “the thoughts of issues related to cyber threats never came across”, he continued, “in recent times, digital security became a challenging task for the university, specially data storage and data accession are the crucial areas” to look upon. In this context, OECD (2018) suggested to toughen the bonds between HEIs and government. The various norms of ‘GDPR in Norway’ were also discussed by the participants wherein, they represented the flexibility and effectiveness of data handling and data management. **SU10** clarified that “Zoom is operated through Uni Net”, he meant NSM which is one the centre point of the IT department for the entire Norway (*UiA,* 2014 September 26), and they work with the universities to provide secured technical tools. **SU10** added that **“**they are the ones who are responsible for digital transformation.

Variables of Digital Security at Concern UiA during COVID-19

Particularly, during corona at UiA, **SU5** stated that the “data capacity was full and required time to time reset” which was due to the numerous videos uploaded and live streaming at a single time. He specified, “it was the major hurdle towards digital shift. At UiA, different departments responded distinctively to the digital security concerns. In the chapter 2, it was represented that the cyber security at institutional level is a matrix of information, it is complicated and not limited to data storage. Moreover, it included securing the server, devices, private networks, monitoring online tools and online platforms (OECD, 2018). Pertaining to it, **SU7** and **SU1** also related digital security concerns with the academic practices. **SU1** stated **“**when it comes to critical thinking and freedom of expression in higher

education**,".** Similarly, both **SU5** and **SU2** showed concern over the data security, and quality teaching phenomena like; freedom of speech and critical thinking aspect. Agreeably, **SU3** also mentioned that "one of the possibilities is that many students were reluctant to be interactive in such setups". In association, Winch et al. (2015) also suggested, it is also important in a digital framework to involve learner's participation, and must give them the options to express critical opinions. Moreover, **SU6** said "definitely we must require a secured network. Significantly, **SU3** depicted the requirement for more dimensions in pursuit of security, and when it comes to particular teachers, he illustrated "many of them are hesitant to record their lectures as they feel that their lectures are a personal element of teaching". One particular issue emerged by **SU5** that as per GDPR, "students have the flexibility of keeping the camera off" during their online lectures, "black screen" by the students also has a psychological barrier for the teachers "to build a healthy connection".

SU1 also particularly probed on the issue like conducting online research which included data sharing and data storage in HEIs. Murphy (2020) recommended 'desecuritization' and OECD (2018) represented the practice of desecuritization by Sweden which was to strategize digitalization by outlining the fresh invading factors in the cyber security sector. It is necessary as **SU5** indicated on recent security issues like "zoom bombing" and "online hacking", he said "data theft is disturbing and makes all of us susceptible to the condition**".** Therefore, **SU4** depicted the benefit of **'**desecuritization' (Murphy, 2020) **SU4** notified that "the digital footprints can be managed with appropriate guidelines based on online ethics". However, **SU6** indicated the complexity of the current system, "he is using VPN network" which could have a contrasting effect in the security, "if someone is using home network", he added. Thus, according to OECD reports (2018) there is a lack of distinguished models of digital security which must consist of complicated segments of digital security and should include diverse stakeholders and their circumstances.

UiA Approaches Towards Digital Security during COVID-19

Many fraudulent attacks like 'zoom bombing' were experienced in various parts of the globe during the pandemic were highlighted by all the interviewees. In relation, **SU9** claimed that "Norway and UiA is handling issues in a secured manner as Nordic zoom is used in spite of US Zoom". He illustrated that UiA eradicated "Zoom integration" before the pre-pandemic

situation after a legitimate debate on Canvas platform, as they found a potential threat of "bouncing of online traffic" to the US based server. **SU10** also proclaimed that "zoom network is not connected to a US server" which he indicated was the prior issue. **SU10** elaborated on the security measures said "every online zoom user in UiA are signed in through education server Feide" which prohibits the intervention of unwanted external forces. However, **SU8** also admitted that "recently due to GDPR intervention and potential sensitivity to data leakage some projects and online tools are stopped" and at UiA, he informed that "IT department validates the tools" where it goes through various radar of scrutiny.

Moreover, **SU5** explained the advantage of GDPR in Norway which allows "flexible data handling" he stated and "the individuals are allowed to withdraw their permission at any point of time". **SU3** explored another component of digital security in terms of personal liberty of UiA students. **SU3** outlined in relation with "GDPR", said that "the institution looked into the matter and signage were created outside the classroom". He stated that "the lectures would be recorded and mapping of the camera is provided so that students can select their seats" and "cameras are always angled towards the back of the peer's head" **SU3** specified. Moreover, he also highlighted that students have the option to be visibly active in their lectures, or they can listen to the recorded versions later. Adding to the digital security through GDPR, **SUI** also stated that "the university has taken a lot of initiatives and content is measured before putting up for the students". In the radius of online learning and teaching, GDPR considered the discomfort faced by the student. Alternatively, for digital safety of the faculties **SU3** highlighted another regulation that "students are prohibited to record the lectures on their own and requires lecturers consent".

According to my research question, the new outlook for digital security and its necessity for awareness is one of the influential factor in the digital transition during covid. The complexity of GDPR was sensed, by the participants when the mode of teaching was shifted to online. They discovered the gap in the policies with the ongoing academic practices in the corona period, it had the potential to create obstacles in accomplishing quality education. Thus, the reforms in digital security within the spectrum of digital classes, digital examination and data maintenance are required to counter the futuristic cyber threats related concerns in HEIs.

4.6. COVID-19: Digital Literacy and Digital Competencies

After the corona outbreak, 'Teachers Education Unit' was created in association with the University of Finance Administration in Prague' to enrich the digital skills of the teacher's education (Wevle, 2020). This was one of the immediate approach by UiA during the pandemic which also depicted international collaboration towards building digital competency. Under this segment, issues pertaining to Digital Competency and Digital Literacy are discussed. Wherein, these aspects are related with the potentiality of technical skills requirement for both teachers and learners. Specifically, within the scale of learning and teaching on Digital platforms while utilizing online tools, and additionally, developing professional efficiency to acquire future job skills.

Theme 4.6.

a) Do you think everyone is aware about the IT functionality, and its complicated technological turmoil?

b) Is it required for timely training sessions for students, teachers and staff members at the beginning of their joining as well as depending on the advancement or changes in the system? Do you think it will create more awareness?

c) Is there an increase in AI and IT related jobs, innovation and entrepreneurship in upcoming years?

Pre-Covid Technological Existence at UiA

Referring to 'Norwegian Centre for ICT in education' Ottestad et al., (2014) highlighted the necessity to prepare the lecturers to embed digital competence in order to modify the education system. The prescribed essentiality of these competencies embraced attainment of digital awareness. It is through conducting academic functions by gaining the study program related digital stipulations, and also to develop capability to design digital agendas in the course structure (ibid:7). UiA worked for its fulfilment from the pre-pandemic times, as Initially they implemented similar action-plan. **SU10** specified, "the IT department performed its trial with existing user-friendly systems" such as "using video server was prioritized beforehand" he recalled, then followed by facilitating teachers with sources and technical assistance. **SU5** also briefed as refer to pre-corona time period, stated that "University is backed with potential infrastructure and digital tools and this will make convenient and suitable digital teaching", moreover he said, "Norwegian universities are using the standard

method of Zoom" and "Canvas and Kontura are globally used academic digital platforms" he stated.

Technological Measures at UiA During COVID-19

On the other hand, CPD methodology is considered to be a provisional prototype which stirs to develop capabilities. (Kennedy, 2005). Under this protocol the skill development of students by the teachers in the education framework is depicted by the author while using CPD nine models. **SU1** highlighted the universities' take on the raising awareness through "drive in sessions" during the pandemic, commonly **SU3** described about the course which started during the corona period by "PULS at UiA" he stated "the staff members were taught on how to make educational videos and other technical knowledge". **SU10** also claimed "it was fortunate for UiA in the area of Zoom integration, and advisory team as it was already existing into the academic system" but he clarified that it factually remained unused by majority of the faculties during the pre-pandemic era. Ultimately during the pandemic, Zoom was made obligatory and implemented in full swing.

UiA's- Identified Technology Related Barriers During Pandemic

Then, in relation to the technological awareness of IT functionality and complicated technological turmoil Falloon, G. (2020) recommended for digital reforms in the higher education setup. in accordance with the course necessity and course outcome, while keeping the learner's welfare and earning capacity. In here, **SU2** also clarified on the role of canvas as a digital platform, she stated that "canvas is applicable for hybrid courses, but other courses need fragmentation, restructuring and planning from the IT perspective". **SU3** represented the available digital solutions during the pandemic, he said, "for the individuals who are comfortable with blackboard teaching were given digital tools like smart board or document cameras to conduct the online teaching". However, **SU1** also clarified that "components of online tools and privacy settings are explained to the students from different cultural backgrounds at the beginning of the study program". On the other hand, **SU3** also admitted that "even though the organization was indulged in digital transformation for quite some time, the lecturers were required to update themselves technologically", specifically he stated, "recording in the front of the camera and editing the videos are the additional tasks". Relatively, **SU2** accepted that "receiving regular training would be helpful for the students

and the teachers". On similar grounds, **SU4** specified, "technological awareness programs would be necessary if digital shifts in higher education persists on regular intervals" and according to **SU5**, "the individuals are inclining towards technical advancement, and wish to gain technological competency, and fall under the beneficial group". Pertaining to this **SU10** elaborated on different types of responses from the teachers, said "some were anxiously looking for assistance, many of them were trying to experience and mend the issues by themselves, several others totally disconnected from the digital shift". This is due to the fact that **SU3** said, "people don't have much of an option as of now". He also agreed with **SU10** as stated by **SU3**, "the technological knowledge and adaptability varied from member to member, some were willing to learn and upgrade themselves and some wanted to go with the traditional blackboard system".

Agreeably, **SU4** also described on that "the technical skills of the individuals vary from one another", he explained some common behavioural aspects that "some individuals were willing to adopt technology while others want to go to the traditional learning", he continued, "they see this as a temporary situation and many wanted to innovate in terms of technology". However, **SU5** also approved on the core issue during the pandemic, he said, "the individuals having fixed mind-set were reluctant to endure technological change, in comparison with the other set of groups who have reverse mind-set". At the same time, **SU3** also specified that "some lecturers were unsatisfied because digital form of teaching was unsuitable for their subject areas and not everyone has the similar level of technological adaptability". He acknowledged that "technological knowledge requires relative experience with the digital tools and definitely the eagerness to accept the change". Whereas **SU7** stated, "people who have less experience with media tools and equipment faced difficulties" she believed that tendency to expert and accept the digital transformation is not limited to specific groups. **SU5** clarified that "the present generation has more exposure to the technology and there is a generation gap" and moreover, "updating oneself in a technology is a personal preference and individual's choice". Thereafter, **SU10** mentioned, "finally some enthusiasts who enabled the changes in digital education with various speculation and experiments with the IT department". He also labelled them "the trend setter", he saw "a change of education" as he specified, "they are the ones who were doing more research and trying to apply in their

courses which is not limited to video recording only", he called the transition "digital teaching or teacher".

Digital literacy and increment in digital competency is a significant step towards digitalization. As refer to my research questions, this part demonstrated another protocol by UiA to fulfil digital education requirement. During the pre-corona times, UiA was digitally equipped with technical advancement which were utilized by many professionals. During pre-pandemic, technology was available as an alternative, however due to the pandemic, faculties were motivated to explore the available options.

Moreover, guidelines to increase the digital competency of the teachers were established long before corona period, and reportedly, covid-19 situation emphasised on the requirement. UiA used techniques like video tutorials and course training to spread awareness which was advantageous, so that teachers can efficiently handle digital tools with their online classes. Indeed, students will also learn from their professors and systematically motivate them to grab the technical skills for their future.

4.7. COVID Times: Quality Education and Effectiveness of Digital Communication

This theme interpreted the role of digital communication in higher education, and its impact on the academic notions such as; critical thinking, freedom of expression, and excellency of verbal reflections during the digital teaching. In general, from an administrative point of view, this question is to focus on examining social trust, connectivity and humanness. From a university perspective digital communication is practiced in three important associations; firstly, in a teaching and learning environment; secondly, making information available to the stakeholders; and lastly, while attending online conferences. Irrespective of these distinctive timeliness of digital communication, all the recipients agreed on the limitations of online communication. This theme is considered separately as digital communication is the centre of digital education and tools.

Theme 4.7.

a) *Do you think digital media and communication is a one-way tool and have its limitations such as in terms of feedback mechanism, connecting socially and building trust, security and humanness?*

Digital Communication at UiA during COVID-19

UiA as an organization, from the initial phase of the pandemic opted for campus based teaching, and wanted the students to visit the campus during autumn semester and students also support the campus based teaching at large. However, it was depended on the pandemic intensity. **SU3** specified "the other universities went fully digitalized" and he conveyed the reason, "unlike other universities UiA students were adhered to campus learning". For the staff members he stated that "they communicate mostly through video calls but ensure regular campus based non-virtual meetings". **SU3** clarified that later, due to the intensity of the pandemic the digital mode of teaching remained the sole alternative to administer education and learning. Thus, while COVID-19 digital communication became the ultimate solution, **SU6** from the communication office stated that, initially, "it seemed difficult to implement during the corona crisis", due to the fact that "the whole process has to take place in a short span of time". To encounter the effectiveness and appropriate outcome of the message, **SU6** said that "the department focused on editing the information in the university portal rather than sending text messages" as the latter lacked room for editing. Hence, to keep the control and the scope for updating, **SU6** replied that "the text messages to the students were kept short and directed towards the web link for further details".

Limitations of Digital Communication at UiA- COVID-19 Period

In order to qualify the efficiency of knowledge transfer it must intercept with the space for interactions, and participations for both the instructors and the learners. Relatively, **SU6** from the digital media and communication elaborated on the setbacks, he said "although it has the capacity to reach people rapidly but it is equally important to associate the readers with the content", to ensure that they receive the right message in the form of feedback. Wherein **SU6** specified the issue, "it is impossible to anticipate the outcome of the communication, unless they receive any written feedback from the readers". In general, both Winch et al. (2015) and Garrison et al. (2001), the authors laminated the requirement to push critical thinking in a digitally learning environment through enquiry. Additionally, (Garrison et al. 2001) suggested CMC must be assimilated with criticism and exploration based reflective-communication within the learners and the lecturers in learning framework.

The authors mentioned that the facility for critical communication is also applicable for the teacher as they have the ability to examine the learners. Therefore, the significant factor of digital communication is to facilitate the feedback process Garrison et al. (2001). Illustrating the on ground concern of digital communication while teaching, **SU2** explained that "as a lecturer I like to watch my student's expression" which helped her to predict their understanding towards the subject.

It is therefore difficult for the teachers, as the students have the right to switch off their cameras, and microphone during live classroom. She added "having chat options keep the teachers clueless of their learnings". **SU5** also mentioned, "for many teachers it was more effective and healthier in a face-to-face classroom", as it drained lecturers physically due to the "zoom fatigue". He referred to an article from "Khorono", and related his screen experience in the context of delivering lectures, and attending constant meetings on a regular basis, he said, "it is tiring and an additional workload for many of my colleagues". **SU5** often requested his students to switch on their cameras as he believed in "exchanging learning energies" which he said, "is possible only through looking at each other". Significantly, **SU7** also approved that "tacit knowledge is missing in digital communication which she elaborated, "learning through perceiving body languages is absent in digital communication. However, both **SU2** and **SU5** demonstrated the distinctive nature of teacher's tactics and student's preferences, and pointed out the prominence of "black screens" are more of an obstacle, especially "when the students are the newly admitted". **SU5** indicated "as the teachers are unaware about the student's learning behaviour". **SU3** explained about the approach by UiA, he said, "Some of them prefer the communication based teaching, for them they get the option for live streaming", but he noticed that mostly teachers agreed to pre-record their lectures. **SU3** stated **"**there are both the recording and streaming options available for the teachers" which benefited the students as he mentioned referring to a student survey at UiA, where students preferred pre-recorded lectures. However, **SU9** also agreed that digital communication limits the approachability towards the teachers. He said, many of them talk about "feeling distant from each other" in terms of communicating effectively, if compared with face-to-face. Thus, the feedback system is shielded with limitations, for instance, **SU9** mentioned that "many teachers feel weird to look through the camera at the students".

Alternatively, from teaching and learning protocol, (Yeboah et al., 2019) mentioned 'Culturally Responsiveness Teaching (CRT)' which is a method for social inclusion during online classes through cultural activities. Seemingly, **SU2** also mentioned, "there is lack of experience and training to deal with multicultural students'' in a digital communication environment. She said "learning of student digital behaviour and language is another barrier", as there are cultural based digital behaviour and language inferences of the learners. In addition, **SUI** outlined "the learners who are sensitive and shy to express themselves on a digital platform" also faced challenges during interactive sessions. Relatively, **SU3** also said "digital communication has its limitations", he indicated its incapability to outreach human psychological sensitivity and building trust based connectivity. Neuwirth et al., (2020) also declared on the similar phenomena of reluctance in participation by the learners due to cameras during online classes. Interestingly, **SU4** said "individuals are connecting with the entire world through gaming" although, agreeing that the intensity of those relationships are diverse, he meant to connect the social gap strategically.

Digital communication is a significant two-way medium in a digital pedagogy which includes interaction and feedback on the spot. On the other hand, digital communication mode is single-way function utilized to carry out information to the masses. In the latter case, feedback mechanism is an irregular and optional for the recipients. With reference to the research question, this is significant to understand that how UiA approached for digital education. In covid, the whole institution relied on digital communication but utilized distinctive tools, and techniques for each occasion. As for academic purposes zoom and canvas were used. Whereas, social media platforms and UiA portal were utilized for conveying information. The latter functionality of the digital communication remained the same in both pre-covid and pandemic times. Merely, the strategy to passing on the information transitioned as it was crucial that information must be regularly updated. In the case of digital communication at teaching and learning, the methodology is an emerging platform and currently lacking the effectiveness of feedback, inclusivism and interactivity. It is due to the factors like multicultural learner and psychological barriers, as both students and teachers are not use to the digital teaching.

4.8. Development Goals at UiA: Social Inclusion, Globalization and Sustainability

As refer to chapter 1, (Camilleri, et al., (2020) mentioned that quality education must reflect social inclusion with an objective to achieve equality, and should render learners to learn work skills. Moreover, the authors insisted that in order to achieve social inclusiveness the modification in the 'social cohesion' must be notified to create 'social capital' through accessible education for all, and learner's psychological health can be maintained through balancing act of the learning centres, social points and accommodations (ibid: 8). In terms with globalization, Alexender et al. (2018: 68) portrayed that learner's mobility is deliberated, through established academic prototype for wealth creation and capacity building of a region. Thus, under this theme, the recipients were asked three descriptive questions; first one indicated whether according to the participant, digital shift had affected the globalization in higher education, from the aspect of student's immobility; second question outlined the consideration of social inclusion in terms of marginal students and less developed nations; and lastly the range of scope for collaboration in the post-covid environment.

Theme 4.8.

a) *It is found that students look for cultural based study experiences along with travelling. Does the future education model are reclining towards local rather than global?*
b) *Do the specially-abled and less-privileged students, whether in the form of gender biases, ethnicity and financial background, have equal opportunities in digitalization of higher education?*
c) *Do you think the area of collaborations such as; within global and local boundaries, developed and less developed nations; whether in form of integration, effective communication, research and innovation would be affected or has scope of new possibilities due to alleged digital transit?*

Global Collaborations, Internationalization and Sustainability During Corona at UiA

UiA practiced sustainable approaches during the pandemic, even though collaboration at international level lacked and affected the student exchange programs", as stated by **SU2** that "collaborations are budding with nations like Portugal and Iceland" where teachers jointly discussed the approaches to be used for student's academic outcomes. Additionally, **SU8** also pointed to collaboration with "Sweden, Denmark or other European and non-English speaking countries", and **SU8** specified that "it's not local rather" cross-bordered countries. However,

Guido et al. (2017) also mentioned about a joint scheme between US and German University which was successful due to the uniform technological infrastructure within these universities. Moreover, these nations being the developed countries have similar advances in technological sector. The 'Glocal Curriculum' was a sustainable approach which has the technical capability to integrate local communities with international, and the authors also mentioned that these technological based collaborations developed the students' learning through virtual approach by detecting the local essentials (Caniglia et al. 375). In similar context, **SU1** added "social constructivism approaches", wherein digital meets must be modified and universities can develop intercultural communication through consciously structuring the virtual classroom to facilitate internationalization and open-mindedness. The Glocal Curriculum approach depicted the requirement for less mobility and indicated a sustainable approach. Commonly, **SU3** suggested that "students should meet physically at least once, and later they can communicate through canvas as digital platforms". Precisely **SU8,** puts out solutions in the form of "shorter trips to internationally partnered universities as the courses can be followed online in the later stage", he stated. Moreover, **SU8** also indicated that**,** "research collaboration and teacher's collaboration is also easier through digital mode". In response to Uzelac (2008) where he recommended advocating human morality by outlining the understanding of diverse cultures and communities. Moreover, Yeboah et al. (2019) also declared CRT as an effective technique to meet diversity and social inclusion in higher education.

Marginal Students and Digitalization in Higher Education

All the respondents agreed to the vulnerability of marginal students, whether in Norway or from less developed countries. Mbaazi et al. (2020) described the susceptibility of disable or differently-abled learners with the case of Uganda during corona, wherein FTF teaching was best option due to the available facilities at the universities, alongside directive professionals. Accordingly, **SU10** also agreed, "disabled individuals are at risk at this moment" and **SU9** approved the evolution of new issues for the marginal students. He specified, "such as disability in the form of poor eyesight and individuals with mobility concerns'', and said that the "old problems are now replaced with new ones", **SU9** continued that "now the challenges are rather technical in nature", as it is "no more about difficulty in moving at the campus zone such as taking stairs". Relatively, **SU5, SU9** and **SU10** indicated on the 2018 law, referring to

make the course accessible for everyone. Both **SU5,** and **SU10** specified that as per the university reforms, it is mandatory to make available the lectures for learners suffering from hearing impairment, they further explained the complication. In relation, Kabuta (2014) introspected the variability of disorders which requires systematic tactics to deal with.

Specifically, from the Norwegian context recipients expressed, the unequal and inaccessibility of digital resources by the disabled learners. Mbaazi et al. (2020) also portrayed the unreachability to the adequate academic resources in the digital framework to the disable learners, moreover it required parental intervention. Wherein, in order to make the academic resources available for the disable learners, **SU10** mentioned about another digital complexity, he stated, “English language it is easier to transcribe” due to its language uniformity, but in case of “Norwegian language, it has distinctive dialects'', **SU5** claimed**.** Hence, **SU10** specified that technically, **“**it is not workable at this moment and therefore, done by the persons''. Moreover, **SU9** added that “the course resources in canvas are unprepared for the special category learners”, and explained that “with a poor eyesight, it is difficult for them to access the reading materials which are upside down”, he continued “presentations with light yellow background are immediate hurdles''. **SUI** also raised the basic issues of the accessibility of resources and education. In Uganda from the international student’s perspective she explained that, “in Uganda the gap is visible” on the pursuit of rural and urban population as “rural inhabitants have the scarcity of basic infrastructure” to sustain digital studies and “urban students have overwhelmed full access”. Additionally, **SUI** depicted the gender gap, she stated “The women are socially intent for house chores and education is optional in rural Uganda'' as the women’s domestic roles are stereotypical and poverty is pertinent to weaker gender. In digitalization of higher education, international students from the marginalized would be more susceptible, **SU3** and **SU7** admitted that to set up digital based higher education requires building of supportive infrastructure. **SU3** specified “students should have basic requirements like having a computer and internet connection” which expectedly adds “a cost factor”. On a similar stance, Jena (2020) also indicated on the issues faced by the low income parents which hinders the ownership of digital facilities to procure digital learning. **SU2** also added that there is a significant digital divide in the area of “language barrier, affordability and accessibility” of the internet in the global south. Whereas, **SU4** mentioned the universities of EU and US have access to more databases as compared to

some universities from the global south, which is one of the obstacles towards digitalization in higher education. Significantly, **SU8** thinks marginal students are going to get impacted by the lack of finances to travel abroad, Norwegian students use “Lakassen” for financial support, “but it is significant to view its availability for shorter trips” he added.

In contrast, **SU7** thinks the orientation of mobile phones and infrastructure have made the participation of the global south easier “at least to some extent”, she said. Along with **SU7, SU4** also agreed that there is an option available to the people in the form of mobile phones, where they can access data and many other features. However, **SU10** is hopeful in the future, and mentioned a tool in which the lectures would be transcribed into “sound and text”, while **SU2** mentioned that “these sectors are untapped in many ways, and have many versions with less awareness which needs to be explored widely in IT”. Meanwhile, **SU10** also pointed towards the possibilities of development from technical aspects, for instance, he stated, “how digital examinations are conducted at their own pace”, similarly the teaching activities can be improvised and he insisted “pedagogical and didactics” are the crucial step to implement these transformations.

Every nation has diverse learners, representing backgrounds or ethnicity and they need inclusive learning structure, and educational institutes must be capable of providing an environment to create mindfulness among the learners. To fulfil my research question on the approach towards quality education during the pandemic, UiA administered digital collaborations with its partnered universities due to immobility issues. The university is advancing towards strengthening digital based intercultural collaboration, with its cross-border countries and global south universities. Hence, internationalization is likely to evolve digitally, as it refers to sustainability and cost-effectiveness. However, marginal students related to disability seemed to face the gap wider due to lack of existing technologies in higher education. Moreover, marginality varies with individualistic apprehensions, as the learner's financial background, nationality, ethnicity, age, gender and disabilities could be the hurdles.

5: COVID-19: DIGITAL TRANSITION IN HEI's & FUTURE TRENDS OF POST- COVID-19

5.1. Theoretical Overview of Influential Factors at UiA

The primary research question in this master thesis was how the COVID-19 pandemic impacted and influenced different stakeholders at UiA? Based on the fundamental understanding of the overall situation, and individualistic opinions at UiA, the components analysed with the intention of producing a wide spectre and also some deeper glimpses into how UiA responded to the challenge as well as the Norwegian context in which this response ought to be understood.

I have discussed Heeks (2014) in order to underline the significance of understanding the interplay of 'Economic, Livelihoods and Capabilities', as a basic understanding on the challenging situation that came in March 2020. In Norwegian context and essential debate concerning higher education reforms in the recent years has been the discussion of formative and summative assessment (Dysthe & Engelsen, 2004). Notably, a second debate in the context of this thesis is internalization, structuring and standardization of courses (Gram & Karlsen, 2004). Furthermore, NOKUT also began to place emphasis on quality assessment and culture. Later, CANVAS from the year 2017, enhanced the assessment criteria through data storing, and providing an online platform for the teachers and students to share knowledge through group activity.

In here I summed up the major concern of digital shift in the pre-COVID era, revolved around the complexity in development of adequate educational models. Neuhauser (2002) mentioned the volatility of online teaching, and Swan (2001) insisted on the trust based teaching and learning process. The latter also raised issues like addressing large group and socio-economic conditions of the peers. Significantly, Beldarrain (2006: 150) forecasted that technology advancement is thought-provoking and were going to revolutionize the HEIs. Seemingly, the corona crisis represented the significance of technology, and at the same time it also showed the shortcomings in terms of managing data in digital teaching.

With reference to Chapter 2, Section 4.2. of chapter 4, I highlighted the digital culture as a whole wherein, research and collaboration are the main element of academic activities to process knowledge sharing. Due to corona, work from home channelized an informal setup for the academia, and OSN' (Zachos et al., 2018) addressed the issue by providing effective higher education. In the pre-pandemic era, digital platforms were used for sharing information which was indicated by (Paladen, 2018). Neuwirth et al. (2020) argued about socio-economic perspective and Sobaih et al. (2020) also confronted a doubt in the spectrum of quality education. Whereas, Zachos et al. (2020) approved on the potentiality of informal work culture.

While, in section 4.3, I elaborated on the pedagogical models developed by UiA during the crisis which resembled Caniglia et al. (2018) 'Glocal model', UiA aimed to engage the learners on the online platform through participative activities in the form of breakout sessions. Similarly, Garrison & Innes (2005) recommendation also depicted for effective digital model of a study program facilitating reflective communication. In addition, Swan (2001) also acclaimed for compact digital syllabus with participatory activities. Wherein, Xiao (2017) insisted for designing appropriate course activities, based on the learning pattern and responsiveness. Relatively, Stein et al. (2005) emphasised on the suitability of the digital content in the study program. During the pandemic UiA faced challenges to commence the practical studies like social services, and programs including laboratory activities and physical education. On common grounds (Quay et al., 2020 & Beery, 2020) also demonstrated about the challenges faced in OEE' which required experiential learning.

Section 4.4 described the examination model at UiA, the model varied depending on the study program. Some courses have home examination, while others have oral examination García et al. (2021) also supported for distinctive assessment procurement based on the subject outcome. It represented OECD (2018) digital policies which were focused on prudence, dexterity and morality. Relatively, Examination must be a secured process capable of winning truthfulness of the teachers and learners, while defining the course structure García et al. (2021).

Section 4.5 showcased the potentiality of cyber security in terms of maintaining data as refer to increasing security concerns in digitalization. OECD (2018) mentioned the intricacy of data management, similarly the UiA case also represented the complexity of GDPR elements like students can keep their camera off while online classes, and in examination it is contrasting. Moreover, critical thinking and freedom of speech while lecturing online was one of the concerns at UiA. As Winch et al. (2015) signified for digital platforms which are secured, and lecturers or students must be free to express critically. Therefore, Murphy (2020) and OECD (2018) recommended desecuritization. In common, section 4.7 demonstrated the in-depth enquiry on the effectiveness of digital communication in a digital pedagogy framework. Wherein, Winch et al. (2015) and Garrison et al. (2001), emphasized that critical thinking in a digitally pedagogy requires adequate analysis, and the latter proposed CMC must be integrated for receiving critical response in a digital communication.

In section 4.6, Ottestad et al. (2014) expressed the need to integrate digital skills with pedagogy by creating awareness through academic activities, moreover modelling of digital agendas in every course structure must be embedded. UiA also took a similar stance in the pre-pandemic courses, such as all synchronous or asynchronous courses, its activities and assessment procedure are explained in the study guide. The students and teachers were aware about the digital guidelines and its implementation. However, in pandemic the FTF courses are transformed to online courses which created a challenge for the teachers. Hence, Falloon (2020) acclaimed for digital reforms, and related that the course design and outcome should develop learner's job skills.

Section 4.8 illustrated 'Glocal Curriculum' Caniglia et al. (2018) which was sustainable practice to collaborate digitally with international communities. Outwardly, UiA also started with digital conferences and planned for less or necessary travel to abroad. However, Alexender et al. (2018) depicted the advantageous role of mobility in regional and national development. Consequently, Mbaazi et al. (2020) showcased the issues of marginal learners which vary based on their nationality, ethnicity, finances, gender, gap and disability. As Camilleri et al. (2020) considered that social inclusion in HEIs is a tool for accomplishing equality. UiA showed a substantial plan for the learners with disability with GDPR norms like using big fonts or transcribing the lectures. However, Kabuta (2014) claimed a classified approach to deal with

differently-abled learners as the disability issues are versatile in nature. In addition, Uzelac (2008) and Yeboah et al. (2019) highlighted the cultural diversity aspect in social inclusion.

Seemingly, Kennedy (2005) CPD model demonstrated the approaches for capacity building, and Camilleri et al., (2020) asserted for 'social coherence for creating social wealth. As refer to Misra et al. (2020) it was helpful to identify the shortcomings in achieving the concept of capacity building, due to probed digital shifts due to the corona crisis. For UiA 'complexity theory' (Styhre, 2002) of organizational change is appropriate in the period of pandemic. Therefore, to handle the corona crisis, the above factors added understanding towards UiA's LMS approach which has the potentiality to generalize in Norwegian perspective.

5.2. Post-Pandemic Digital Transitional Components

This part is linked with the research question, wherein I investigated on how digital shift would look like in the post-pandemic era? Which of the stakeholders are involved extensively in this transitional digital culture. As I refer to my research questions, sustainability and agility are the highlights of this pandemic centric digital transition, involved managing cost through less mobility and work from home alternatives, as alleged digital culture in this pandemic. Predominantly, the major transformation is estimated at the digital pedagogy sector, it is associated with cordial factors like; digital tools, digital literacy, digital communication, digital safety and digital examination. Additionally, the research and collaboration sector are affected due to digital shift in academia and work culture. Therefore, the key themes of digital transformation due to the pandemic are primarily digital culture, and the secondary factor is the prototype of digital teaching and learning. There are four key stakeholders who were affected largely; learners, lecturers, and technical staff in a university. Wherein, the latter two were respondents to facilitate immediate digital shift. Nonetheless, student education along with their mental and physical well-being was the main inquisitive issue, and all the actions of the universities revolved for the welfare of the students. The below mentioned effects due to digital transformation (Chapter 3) can be generalized as Norwegian Universities. These are the recommendations made by the interviewees for the post-pandemic period which is summarized to create a rudimentary outlook. Moreover, the futuristic trends and specifications of digital transformation in Norwegian HEIs is clarified. It highlighted the

scarcity of notion for quality education in the form of social inclusion due to inevitable digital divide.

Untapped Potentials for Hybrid Pedagogy etc.

Although, there were obstacles at various levels in terms of conducting digital pedagogy during covid. One of the clear distinctions was between practical versus theoretical disciplines. For instance, lecturers in mathematics were used to solve the maths problems on the blackboard, and then they had to switch for computerised based demonstration (Chapter 4). Whereas, the teachers and nurses faced challenges to execute their pedagogical activities due to the requirement for field study. Similarly, social services and child protection related study programs which were based on a practical environment, simulation and role play also faced issues (Chapter 4). In contrast, learning languages digitally was much easier to shift, in the form of the PowerPoint learning approach.

In another words, distinctively, the engineering department was the worst hit in the sense of teaching because of its practical and technicality in pedagogical approach, and the humanities related subjects was benefitted due to the theoretical aspect (Chapter 4). Therefore, it showed that hybrid pedagogy varies in many ways in terms of teaching, learning and utilization of technical tools, must be integrated with the course design. As teaching and learning usually takes place with live group interactions, and engagement activities which must be considered, while modelling for hybrid sessions. That's when the question about the relevancy of digital teaching arises in relation with covering course components such as; practical, technical and theoretical contents. There is a requirement to discover the course suitability in digital teaching as every course is distinguished from one another. Evidently, the recipients were convinced that unified asynchronous strategies were unable to work for all courses. Undoubtedly, blending sessions or conversion of courses to hybrid must consider the variables while structuring.

Interestingly, the practical or artistic studies can be taught digitally although lacks experiential learning as of now. As per the recipient, for instance: in the medical studies to become a surgeon, the learner has to practice autopsy in the donated bodies (SU4). In that case, certain elements of learning can be imitated technically. That's why certain constructive courses can be evolved and transformed while considering the digital benefits. Similar to medical studies, in physical education, exercises and demonstrations can be taught digitally with virtual

interactions. The glance of asynchronous learning at UiA, during the pandemic was visible through spontaneous and experiential digital solutions which were used persistently. The solutions like producing videos to the partial needs of the courses, became the fundamental teaching format for every course, and then developed some sort of asynchronous teaching.

Additionally, one of the challenging perspectives was one-way lecturing in a zoom for 45 minutes which was monotonous for the students. Hence, there were solutions with pre-recorded lectures, this also signified the intensity of asynchronous activity. Hybrid learning must be interpreted from learner's perspective primarily, in accordance with the course's requirement and teacher's techniques to provide quality education.

Post- COVID- Examinations and Evaluations; Expectations and Strategies etc.

When looked into the future examination, the expectations are to have fewer examinations in the future, while omitting the remembering based examinations. As it contradicts, with the work culture at offices and future jobs, in the form that normally people have the privilege to refer by clicking internet anytime. Specifically, where the students lacked to reflect upon, those assessments must be removed. Whereas, in order to be decisive on the existence of the examination then it is "one of the big pieces" (SU10) which has potential for transition in the overall academic concept. However, in the era of post pandemic there is a scope of digital development in an examination sector, and possibility for change in evaluation process. As claimed by (SU9) UiA is upgrading its format of digital examinations in the long run. Digital examination would be upgraded focusing on easier and far-reaching. For instance, (SU7) clarified, the digital examination worked well in a PhD dissertation during the pandemic. Referring to it, future examination reforms would be based on broader and practical tasks, which can be measured easily with the help of the IT department. Moreover, to conduct the examinations effectively, during the whole year of the study program, problem-based examinations can be effective such as; the students have to represent their analytical skills. Wherein, the instructions would be on an online platform and students have to apply the concept, it must be then accompanied with written or oral examination. Moreover, the examination task should be reflective of a student's knowledge which can be accomplished through project work, tests and feedback based exams. In this whole procurement, ICT tools must compliment the assessment process, and develop peer to peer feedback mechanism technology in every subject area.

Post-Covid Introspection of Digital Security etc.

There are contradictory and complex structures of GDPR, as to deal with the complex structure of 'securitization, desecuritization' which is required to sustain through constant policy synchronization and research (Murphy 2020 & OECD, 2018). One of the complexities is to create videos which must be transcribed in a text format, for the visually or hearing impairment related learners. However, there is lack of technological efficacy, for e.g. for auto-reading format, in particular Norwegian language is lacking as unlike English, Norwegian dialect is different from other parts of Norway in terms of Algorithms (Chapter 4). Another contrast of GDPR complexity is that students can keep their camera off during the lectures. While during the home examination or virtual oral exams, it is obligatory to keep their camera on as switching on the camera is to ensure the presence of the right candidate during the examination which contradicts with the "censorship issue" (SU9).

With a solution to this, securing students data through appropriate strategies is a crucial factor. In addition to the lecturer perspective of digital security, if some content is meant to be distributed or not, can be achieved through adequate policies (SU7). It is through putting restrictions on downloading video and sharing content which must be scrutinized at digital security norms. While, it is also necessary to educate digital-compassion, in the new digital age which represents the potentiality of GDPR reforms in the future. Nevertheless, digital security, its variants and digital responses are required to be measured regularly. Moreover, canvas intervention in a course design with timely updates must be maintained for the upcoming digital security concerns. To tackle the security related concerns successively however, it needs to include individualistic attention and their effectiveness to deal with the security breach. In general, cautious speculation at every university level is a mandatory step to secure the students and faculties. Significantly, in the context of critical thinking and freedom of expression, the quality of education and digital communication must be secured at the institutional level.

Increment in Digital Competency post-corona period etc.

As estimated, there is an increase in AI and IT jobs related businesses due to digital shift, an increment in requirement for technical competencies is certain. Hence, jobs competencies in pursuit of academia needs to be re-structured, and analysed on the ground of COVID interference. Majorly, job sectors are shifting to AI but not completely, as there are more factors. The futuristic jobs are going to be in the field of data management largely, and AI is generally seen in marketing, text analysis and for languages. However, IT related jobs are a partial segment even after the digital shift, and involvement of IT and AI related jobs would be an extensive part of our lives. There are already new businesses and innovations which are evolving to create value, and many of us are already experiencing this (SU4). This is an ongoing pandemic transformation where all the stakeholders are preparing themselves towards digital shift, and it is also vital for the lecturers to formally attend technological protocol to design teaching, even though there were flexible technological options available for teaching during the pandemic. Exceptionally, we need sophisticated technology and a teaching environment for conducting academic activities.

Evidently, "Augmented Reality (AR), Virtual Reality (VR)" (SU4) are the futuristic ICT objectives of higher education which is likely to develop even in the absence of corona. However, its effect on the teachers and student's response is still unknown. The understanding of digital notion changed, as of now it is transitioned towards immediate response in the pedagogy model. Significantly, there is the need for practice of digital tools on a daily basis with professional support, as digital competencies requirement expanded during the pandemic. Abiding by digital change, many students and teachers are inclined to develop their digital skills. Technical training and short courses like video making courses were helpful, and people are commonly using technology and becoming advanced with time.

Post- COVID-19 Technological Amendments etc.

Technical Awareness requirements are increasing year after year, and the phenomena of digital education transitioned from digital communication to digital pedagogy. Due to the pandemic, digital education became more concrete and represented its utilization to the fullest. In relation to the question of future technological development in higher education, there is more potential to explore in the pursuit of tools development in the education sector.

As now students use zoom at large but there are other unexplored technological approaches (SU10). The educational tools must be studied and explored constantly to enable effective technological advancement. With the involvement of both personal choices of an individual, technological awareness is necessary. On the other hand, digital tools must be designed in such a way that it can be learned, and implied easily without any specific training. There is hopefulness and optimism on futuristic software about its user-friendliness and adaptability. For instance, the features of zoom are much user-friendly due to its manageable buttons as compared to Microsoft themes (SU5). The uncomplicated tools and simplistic digital model represents a better mode of digital transformation.

Post Pandemic Solutions for Effective Digital Communications etc.

Post-pandemic would be seen as an era of both normal and digital teaching due to the limitations of effective digital communication tool, although technical advancements are happening but as a slow. The reforms in media centres at the UiA have increased as compared with pre-covid times. Moreover, the digital shift during the covid-times is temporary mode of digital communication. The post-pandemic era would be carefully evaluated digital communication in relation with pedagogy.

Undoubtedly, communication is a two-way mechanism and digital media communication tool must be capable of represent feedback systems. Therefore, the teacher's roles and responsibilities increases on building trust, and provide a sense of security to the students virtually. Moreover, lecturers have to figure out the best method to engage all the learners in a digital platform. For instance, reflection methodology through paraphrasing can be achieved through sharing personal experiences, and sharing empirical cases (SU1). Additionally, for implementing successful digital communication cultural introspection and understanding of socio-cultural background of the learners must be considered in order to design effective academic engagement programs (SU2). It is significant to shortlist the applicable digital tool to commence the online teaching as referring to their learner's background. Moreover, the ideal digital platform is the balance of sophisticated frameworks and must consist of social chatting and group discussions and it is not an article, but a knowledge sharing digital platform (SU10).

Post COVID- Shift in Internationalization, Research and Collaborations etc.

Due to the transformative digital work culture, it was highlighted by the recipients that sustainability would be an agile approach in the form of home offices. Additionally, digital transformation in the research sector is much likely to develop at international level with a sustainable outlook, as the future of research and collaboration has the scope of necessary or less travel. For instance, collaborative research activity with Uganda can be worked without travelling which would also be a cost effective measure (SU1). Relatively, the PhD students travel to their home countries for 3 months, and they can digitally continue their work (SU10). The options for flexible working and learning environment opts for less mobility and secure the students from economic crisis.

Meaningfully, when the collaborative meeting is about decision-making, digital meetings are better options. On the other hand, face-to face meetings are helpful in strategic planning as it requires more detailed conversation. Therefore, meeting people at the primary stage is crucial to build trust and should be obligatory. It is to facilitate for noticing body language and knowing their international colleagues better. However, the discussions can be achieved through webinars on the later stage.

On the other hand, for conducting research in the digital setup, one of the necessary elements is formulation of questions in a qualitative interview. In overall, more emphasis should be on strategizing the outcomes of any research methodology. As notified by one of the participants that if face-to- face and zoom interviews both produce similar levels of valuable content then, it is possible to have digital research. Nonetheless, digital research lacks the influential dynamism, energy and social engagement in the research activity. Therefore, customizing research dimensions and productivity to the digital requirements is vital.

Post-Covid and the Vicious Circle of Digital Divide etc.

Separately, a new phase of digital divide between global north and global south was indicated during the corona pandemic. For instance; in a country like Uganda, many teachers were shortly suspended from their jobs (SU1). There was a chaotic study environment many students were distressed due to lack of consistent internet connections, and reportedly, they get caught in the fraudulent services by internet provider (SU1).

These students have to go to town square to get a data card, as it is cheaper to buy a data card in Uganda (SU1). The data cards were utilized to download lectures during the night, when the internet speed is better. This incident represented that developing countries lacked accessibility and infrastructure of basic internet services, and these issues are uncalculated in terms with the economic background of the students. Hence, it is significant to analyse the circumstances faced by the international students from the global south. How lecturers can digitally engage or make them participative while conducting online live sessions, questions the efficacy of digital engagement in an online pedagogy. However, it is needed to have additional pedagogical approach on how these students can be taught diligently in the digital framework. In addition, many lecturers have no experience in dealing with multicultural students due to language barrier whereas, many learners are scarce in understanding digital etiquettes (SU2). It is depicted that the right to education based on accessibility and availability, deepened more than ever due to corona thus require educational reforms in the post pandemic era.

Marginal Students Amid Post-Covid Era etc.

Other than the issues from developing countries, work from home culture and sustainability is unequal phenomena, for the students who are facing disability issues. The special-need learners require care assistance with appropriate infrastructure, and helpful technology to access their learning resources to perform pedagogical engagements. The issue is now shifted to more than physical accession of the universities. For Instance; taking up stairs is not the issue any more (SU7). However, the complexity of their requirements also depend on the type of disability issue they are facing, now it is more about accessibility of academic resources, its interpretation and procurement of social engagement digitally. For instance; Norwegian dialects are diverse when compared with distinctive regions in Norway, therefore makes it difficult to transcribe the language digitally, unlike English (SU5 & SU10). There are limited technology to accommodate the differently-abled learners in a digital platform, moreover, disabilities have various dimensions. Other than technological innovation in digital pedagogy, integration of the universities to outreach them is likely to be necessary in the post-pandemic era.

5.3. Post- Corona: Inconsistent and Unstructured Development

In conclusion, without a doubt this typical digital transformation, based on the corona outbreak was imposed on the HEIs. It was rather a tool to counter the present crisis, however, this issue had explored the potentiality of digital transformation. Evidently, UiA was planned for the crisis but the digital transformation was complicated as expected. There was technological integration made for immediate solutions, however, these solutions are temporary reflection to the present crisis. As a matter of fact, the digital transformation over the year was evolving on a slower pace, and now due to the pandemic there would be more fascination to achieve the final phase of higher education, i.e. Digital pedagogy. Moreover, in general Norwegian HEIs analysed the complexity of digital transformation with the existing technology, and there are more to it. Hence, in the immediate post-pandemic phase, it has the possibility that teaching would go back to FTF like before but the digital integration would be faster now. The hybrid courses and MOOCs would evolve for standardized format. The technical, artistic and practical course would be advancing for more hybrid solutions.

Whereas, the concept of examinations for every course are likely to advance, with its suitability in lieu of advanced digital pedagogy, digital communication, course structure and study outcome. MOOCs models and existing hybrid models have the capability to provide a fundamental understanding on the digital approach in education, can be referred to develop prototypes of digital pedagogy in HEIs. The pandemic has taught that digital collaboration is possible in the period of the internet. However, there are several issues like security, infrastructure and effectiveness which are attached with digital communication, and international collaboration. Along with it, HEIs also have to integrate its reforms and technology with scope of development, for the community in the form of skill development to build capacity. Wherein digital competency takes the prominent place in the post-pandemic era. The hybrid courses or asynchronous study program could be an agile approach, due to its sustainability, innovativeness and potential of exportability in diverse circumstances.

To, illustrate, the hybrid course of Masters in global planning and development course at UiA was designed around 20 years back (SU9). According to SU9, it was contemporary back in the pre-covid era. Primarily, the course provided the option to be the part of classroom teaching

and discussion wherein, the learners also had the facility to attend the course online. In the later stage, the classroom discussion and group activities were shifted digitally to canvas based discussion. Moreover, during the pandemic the whole course shifted to complete digital teaching and learning. Seemingly, the pedagogical technique of classroom lectures shifted to pre-recorded lectures, to be followed with seminars or discussions on zoom sessions. Whereas, group engagement activities and assignments were allocated on canvas which made the formative assessment clarified. Later, the final examinations were based on conceptual implications of theories learned throughout the course. Significantly, students were aware about the course outcome and assessment criteria in advance. My ultimate motive to highlight the course structure, in order to represent the phenomena of digital culture. It has evolved from the concept of an online alternative at the beginning of the course, to digital communication and digital assessment at the mid stage, and finally during the pandemic the partial FTF teaching shifted to digital pedagogy. This also represents that blending sessions also have multiple layers and potentiality to evolve pedagogically based on the subject requirement.

As the digital pedagogy is likely to explore its limitations, the notion of quality education in the form of developing critical expressivity, among the peers must remain the same. Moreover, the lecturers should have the feasibility for critical feedback, to share their knowledge without any concerns. From the viewpoint of societal development, referring to SDG4 the digital education must be accessible, affordable and adaptable for everyone in the society; irrespective of their ethnicity, gender, age or any marginality and economic background. In the post-pandemic era, these sectors are unexplored extensively and hence, digital transformation featured as pedagogical shift are likely to widen the gap between privilege and unprivileged, in the form of digital divide in higher education. The digital divide has additional variants, and in order to build capacity and to create sustainable academic reforms HEIs must explore in; digital pedagogy, digital competency, digital literacy, digital etiquettes, digital collaborations, digital equipment and digital platforms. Therefore, the next section elaborates on the research and collaborations which are required to accomplish development goals with the norms of quality education.

5.4. Scope of Research in Post COVID-19 Era

In future, there is a scope of development through substantial research in each subject area and themes which are discussed throughout the thesis. Specifically, how to digitally design the online courses in an asynchronous and hybrid format. In here, the most favourable protruding futuristic question is to; what magnitude we would have to transform the digital practices. In simple words, to what extent the study programs can be formatted towards digitalization. Exceptionally, MOOCs model must be studied in each subject criteria, to understand its scope of adaptability at the institutional level or in a formal academic setup. Whether MOOCs prototype can be referred to form a new digital framework in a university setup? Nonetheless, the context of critical thinking and freedom of expression in the pursuit of quality education, GDPR and digital communication must be explored. It is significant, both at the institutional level and in the range of study programs, when considering critical thinking and freedom of expression.

Additionally, there are two adjoining criteria of pedagogy; firstly, in the area of examination and assessment which must be explored, on the basis of each study program and their outcomes. Secondly, in the research and collaboration sector, validating the research techniques and tools used in each course, and how collaborations can be maintained, and coordinated while working in a multicultural setup. However, digital teaching and learning also requires analysis of its appropriateness for internalization and cultural amalgamation.

Technologically in academia, there is more potential to explore in the pursuit of developing learning tools depending on the subject traits, course curriculum and its assessment criteria. Moreover, is there any other scope of developing research tools, and effective collaboration techniques in the digital framework? Altogether, it must be combined with the existing technology and should be studied through persistent experimentation to enable effective technological advancement.

Most crucially, from the development perspective, exploring the digital divide in the form of scarcity of technological infrastructure; lack of digital competency; gender gap; digital crisis due to disability, ethnicity, background, nationals must be studied. This would create the base for all the above mentioned scope for research, as it is important to fulfil the SDG4 criteria which are accessibility and adaptability of quality education.

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APPENDIX 1: INTERVIEW GUIDE

A. ORGANIZATIONAL AND DEPARTMENTAL ASPECT

- From an organizational point of view; what was challenging and lacking during the immediate requirement for digital transition during the pandemic?
- As related to your department, which group, stakeholders, associates and department in university are worse hit in the pandemic and vice versa, when it comes to sudden digital move?
- What was the protocol followed for the wellbeing of the students?
- What were the issues faced by the UiA staff members?
- What was the digital protocol followed at the beginning of the pandemic?
- Do you think all the courses irrespective of their features whether; artistic, technical or theoretical are developed further for hybrid courses and you see a potential of technology and tools in higher education?
- Is there any major impact in the research sector in the form of research procedure, research content etc. due to digital invasion?
- What is the collaboration model in the upcoming future?
- Whether digital examination and home examination is a better option than the traditional ones?
- Digital security is a matter of concern when it comes to content sharing. Do you think digital intervention in education disrupts personal safety and hence security concerns

risk the nature of quality education which comprises critical thinking and freedom of expression of an individual student or teacher?

- Do you think digital media and communication is a one-way tool and have its limitations such as in terms of feedback mechanism, connecting socially and building trust, security and humanness?
- During the pandemic digital form of communication became the significant tool to inform and communicate within the university peers on social platforms. Do you think the digital mode of communication demonstrated the potentiality of digital shift during the pandemic and inspires higher education for the transition?
- Do you think everyone is aware about IT functionality and its complicated technological turmoil?
- Is it required for timely training sessions for students, teachers and staff members at the beginning of their joining as well as depending on the advancement or changes in the system? Do you think it will create more awareness?
- Is there an increase in AI and IT related jobs, innovation and entrepreneurship in upcoming years?
- Is the work culture changing into fully digitalization and everyone must be prepared for the same?

B. <u>DEVELOPMENT</u>

- Do you think the area of collaborations such as; within global and local boundaries, developed and less developed nations; whether in form of integration, effective communication, research and innovation would be affected or has scope of new possibilities due to alleged digital transit?
- Do the specially-abled and less-privileged students whether in the form of gender biases, ethnicity and financial background have equal opportunities in the digitalization?
- It is found that students look for cultural based study experiences along with travelling. Does the future education model are reclining towards local rather than global?

C. <u>CONCLUSIVES</u>

- Does Corona make progress in digital transit? faster or slower?
- In your opinion, is the digital shift the new normal? Yes, or No?
- Do we need a digital shift as a society, Yes or No?
- Do you favour the digital shift, Yes or No?
- Now due to the pandemic experience, is it the possibility that all futuristic courses and existing courses would be shifted to hybrid courses? Yes, or No?
- Do you think digital proficiency is a futuristic trend in job markets, Yes or No?
- Do the future jobs are AI and IT related jobs? Yes, or No?
- Do you think digital media and communication was accessible for everyone during the pandemic? Yes, or No.
- Do you think digital forms of communication have its limitations in terms of security, critical thinking and freedom of expression? Yes, or No
- Can you imagine a workplace and study centre without human contact, Yes or No?
- Is the work culture changing into fully digitalization and everyone must be prepared for the same? Yes, or No?
- If you look back to compare pre-COVID-19 and the current situation, do you support that the future of education should be fully digitalized? Fully or Partially?
- Would you like to highlight an issue other than my questions?

APPENDIX 2: INTERVIEWEES CONTEXUAL RESPONSES

Sample Code: SU1
Department: Multimedia and Educational Technology
Standpoint: E-learning and E-Teaching Course
Date: 12th Feb, 2021, Friday,
Time: 14:00 – 15:45
Place: Kristiansand

The subject's response on the digital transition during COVID-19 in context of faster and slower for both Norwegian and universities in Uganda was similar in experience but at various degrees which she elaborated throughout the interview. For a quite long time, she has been associated with e-learning and e-teaching and was relatively working in a digital module. She specified that before the universities were adopting the digital way at the slower pace and with some extent of unwillingness from various stakeholders. However, proclamation of corona times triggered digital learning and teaching during lockdown, due to complete unavailability of face to face sessions and in absence of alternative options. As one of the lecturers of e-learning and knowledge bearer she was content with the fortified changes. The university managed to give early training and short courses to the teachers to develop the digital competency and assisted the students for eloquent digital response on their learning and time management. She mentioned that for many teachers the conceptual digital teaching was first-hand and there was relative psychological compression to make it work with successful implementation. With due pushing strategy at the initial days which was confronted with many barriers later, slowly started to bear betterment in the process.

The interviewee's greater challenge at the time of digital shift during the pandemic was the amount of people management increased, it was due to synchronous learning method and, moreover participant's online behaviour such as; their inactive participation and their absence was associated with inadaptability to digital necessity which was impacted extensively at professional level. Personally, teaching and dealing with space management with her spouse who was also working, and managing children with household chores was chaotic which became an additional burden for her. There were significant challenges for her when she was tutoring international students from the global south.

Sharing her close encounter to deal with this matter, she stated that due to her knowledge on the difficulties of these international students she decided to record her lectures to facilitate students as data cards are cheaper which helped the students to endure their studies during the night. Considering their disadvantages to access online education which kept them away from active academic discussions on the topic due to inaccessibility and lack of infrastructure. The opportunity was centred through the development of social constructivism approach in her teaching method, opened with a spectrum of possibilities wherein student engagement was planned through an online discussion forum which was assigned to be accomplished on the same day, as a result she keeps her lecture intact. For her it was both challenging and gave a scope of opportunity in designing the teaching and learning prototype.

Describing the least affected actors in higher education and vice versa, she insisted that each and every stakeholder faced positivity and negativity in some or the other way. On positive note, she said that her commute to work was saved and she greatly acknowledged the digital framework. Zoom call and prompt internet connectivity transformed her preparation technique for her lectures along with her colleagues, as zoom call became the virtual space to collaborate with informal lunch and coffee meets. Negatively, the nourishment of human connectivity with physical presence lacked and affected both the teachers and students psychologically. She stated that one of the stakeholders was likely the technical people who had to work firmer during the pandemic, as they were responsible to troubleshoot while responding to the large mass at such a short time. The subject expressed that due to unknown reasons the option for online courses in higher education increased, and the student registration also increased at UiA.

Interviewee neutrally responded on the possibilities of collaboration within global north and south with a case perspective of master's students at the university of Uganda. She explained that the teachers were shortly suspended from their jobs due to nil capacity to restore digital transformation universities lost business. A digital divide between global north and south was visible for her as the students' study environment was chaotic and noisy, as she found out that one of the students was distressfully complaining to the internet service provider for fraudulent service. To some extent university sponsors the less-privileged in Uganda and factually she stated that likely one out of many gets funding and university is highly dependent on the fees received from the students. According to her, the digital divide was the reality check which portrayed the economic

gap in Uganda and Norway diversely. As in Uganda, the gap was visible in the pursuit of rural and urban population as rural inhabitants have the scarcity of basic infrastructure to sustain digital studies, whereas urban students have overwhelming full access. Additionally, gaps were represented by her in terms of gender as the women's domestic roles were stereotypical and poverty was pertinent to weaker gender. The women are usually socially intended for house chores primarily and education is optional in rural Uganda, she claimed.

When asked upon the expectations of international students on travel-based and cross cultural higher education, and to confront the future higher education, whether HI is transitioning to local rather than global move, she intervened the process as an individualistic agenda. She claimed that students aimed for paperwork or professional competency related diplomas. and their affordability of online studies may increase their mobility. As per her, the face to face classroom would demand more from the international students, and in accordance with local and global phenomena the digital communication must be modified to social constructivism approaches. She added that universities can develop intercultural communication which can be consciously structured to facilitate globalization.

Digital security is a matter of concern when it comes to critical thinking and freedom of expression in higher education. She probed on the issue like conducting online research, and its authentication consists of both dangers and opportunities. However, in the radius of online learning and teaching, she informed that the university has taken a lot of initiatives and teaching content is measured before putting up for the students. It is convenient for her, as she is professionally linked with e-teaching and tackles security related concerns all the time. She confronted that the university's effectiveness to deal with the security breach and shortfalls are independent in nature.

In relation to the awareness of IT functionality and complicated technological turmoil the subject highlighted the universities' take on the raising awareness through drive-in sessions, wherein components of online tools and privacy settings are explained to the students from different cultural backgrounds. When she was asked to comply on the requirement of timely training depending on the advancement or changes in the system as well as in the beginning, she raised concern over universities in Uganda for negligence in digital empowerment of students and teachers through training and knowledge sharing. On the other hand, in Norway, the university brought up technical dissemination from time to time. If there is an increase in AI and IT jobs and businesses due to digital shift, she acknowledged it as a positive reality where jobs competencies need to be re-structured and analysed on the ground of COVID interference. She emphasised that similar research like mine has the potential to bifurcate the levels of future jobs competencies and recognize the gaps. Though the interviewee focused on the digital transition in the working environment and envisioned for digitalization, she also reminded the elderly people's competencies and their adaptability towards the digital shift is questionable which is occurring in all working sectors. With an example she recalled, she received hand-written course material from her former mentor was an unusual experience for her. Ethnographic research which is based on observation is likely to shift in case of digitalization in higher education and new alternative ways must be discovered.

She supported digital examination and home examination based on her e-teaching courses, for her traditional examinations are indifferent. The analogy of e-teaching pedagogy, students were trained and informed about the outcome and their expectation in the course framework, inconveniently it is inapplicable to other non e-learning courses, she specified. Moreover, in e-teaching disciplines the assessment criteria were well-explained from the beginning and directions were given by the teachers to accomplish the course goal. On being asked about the fairness and efficiency of digital examination, she was sceptical for some courses as many of her colleagues were against it. She added that, while lockdown gave no other option other than for careful planning, information sharing and implementation, as for instance, students travelling back to their home countries had multiple options such as; going to the universities in small numbers and appearing for the traditional examination protocol, she stated. On the other hand, students willing for home examinations have to equip their rooms with camera and screen settings right, so that the examiner can view the whole room and monitor the student's movement. Subject insisted that with strategic alliance and willingness for change the transition in evaluation protocol is possible.

Communication is a two-way mechanism and digital media communication tools must be capable of representing human feedback systems, on that she referred to that efficacy of interactivity of an online tool or that channel must enrol the expectation from the target learners. Her students in Uganda used WhatsApp as a channel of communication for free and relentless communication. hence, according to her requirement of her learner and course expectations were the key for successful online interaction. She also highlighted some challenges in interactive communication faced by the Norwegian Students, who fear to express themselves due to individualistic sensitivity referring to their nature, and openness in the

online platform. Here she emphasized on the requirement of broadening and innovative reflection methodology such as; students are motivated to share empirical cases, personal experiences or paraphrasing the content. Her role as a tutor involved guiding the students and compel them to fight with their insecurities. Moreover, participation was graded in the curriculum, so it urges the student involvement and canvas as a platform that capacitated statistical and measurable assessment of learner's participation and scheduled teacher's ordinance.
She outnumbered herself as optimist that digitalization in higher education would construct trust, security and humanness in the learning and teaching model, as according to her in order to gain the profit one needs to practice to achieve the goal.

The participant agreed that digital form of communication is becoming a significant tool to communicate within the university and social platforms also inspired higher education for transition. Alternatively, she expected to consider the adversaries in different societal groups and their equivalent participation in the digital means of communication. By reflecting on Norway's marginal groups like migrants and their inaccessibility to own laptops and then gain digital competencies and knowledge is a wider issue, added by language and racial dissimilarities. Thus, according to her there is a probability to restore diverse social structures and to re-strategize the communication while considering the digital divide, and interactive solutions must be given on the basis of target audiences. She suggested both digital and paper ways of communication.

According to her digital shift is the new normal but not for many, she is open for hybrid mode as well but uncertain about the futuristic consequences as she objectified the realistic picture of digitalization which is unclear due to the pandemic. She continued that the university was already practicing hybrid for many courses and it is the upcoming future. Subject specified how determination of course standards have changed, as particularly she said, before corona physical attendance was mandatory to 80% and now attendance over zoom was prioritized during corona. Further, when asked about the feasibility of hybrid mode for practical and artistic courses she claimed the challenges and said that possibilities may exist with reducing the numbers of learners or individualistic sessions. Lastly, she thought digital shift is bound to happen and we need it as future jobs are reclined towards digital combat. Moreover, she weighed on to look into issues like digital divide in terms of local and global in order to feature the advantages and disadvantages of digital transition**.**

Sample Code: SU2
Department: Pedagogy Department of Education
Standpoint: Humanity programs and its teaching and Learning
Date: 4th March, 2021, Thursday,
Time: 12:00 – 13:00
Place: Kristiansand

The subject represented pedagogical point of view as she is one of the associate professors at UiA in the humanities department. When asked about the speediness of digital shift in the university due to corona, she claimed that the shift was enforced to faster transformation rather than slower as there was no other alternative to sustain in this situation. Furthermore, when enquired on what was challenging and lacking in pedagogy during this period she shared her experience on how pedagogical techniques have transformed the fundamental course structure, its requirements and aim from the teaching perspective. According to her, every now and then the teachers have to constantly change the academic model of the course which makes teachers to be more attentive towards the students' requirements. She also included from the student's perspective that they are often perplexed in this situation, so the teachers are ensuring that more students can be reached. However, she and her colleagues look forward to traditional teaching and to some extent, she admits that she is enjoying digitalization but she likes to meet her students.

She stated that among the worst hits, the engineering department can be the one because of its practical and technical approach in the course pedagogy. On the other hand, humanity department and its subjects have its advantages because of the theoretical aspect and so these courses have the capacity to transcend digitally. She added that UiA have the prospectus of research in developing digital strength in every area and **a**nother significant portion i.e. collaboration at international level lacked and hampered the student exchange programs to its limitations. She was unaware about the global south perspective but thinks there is a significant digital divide in the area of language barrier, affordability and accessibility of the internet. As she works with Norwegian students, she continued by explaining the collaborations are budding within nations like Portugal and Iceland wherein, teachers are jointly discussing on the approaches to be used for student's academic outcomes. Other than that students from less-privileged in terms of especially abled individuals, she mentioned that these sectors are untapped in many ways and have many versions with less awareness which needs to be explored widely in IT.

In one of the added questions on the research sector and its functioning, authenticity was interestingly countered by her comparative case. She remembered, as a PhD student she had to travel and bear the cost to attend seminars but now digitalization makes it more convenient and free access from everywhere, at least in the humanities sector she admitted. Later, she also described the limitation through an example that UiA teachers have to go to schools to collect ground data on the issues faced by the students. As a result, the restrictions due to Covid-19 prevents the core enquiry and understanding.

Whether the immobility of students was causing localization of education, she stated supposedly that due to the current scenario of which students were unlikely to travel in this pandemic and future is unpredictable she insisted. About digital security and personal safety, she thought it's a major issue in the present world in a global context. One of the cases, she explained that as a lecturer she expected to watch the student's expression while taking her classes and predict their understanding towards the subject. It is therefore difficult for her in many ways, as UiA have an institutional policy that students have the right to switch off their cameras and microphone during live classroom. Therefore, chat options kept the teachers clueless of their learning. She agreed that all students were dissimilar in nature, some may be reluctant to show their home atmosphere and some were camera shy and others were discomforted in relation with human psychological barriers.

She also acknowledged that digitalization communication is easier in many ways. As particularly when asked about building trust within the peers and feedback system to ensure developing critical thinking and freedom of expressions among the students, she depicted that teacher's adaptability and proficiency matters here. One of the common phenomena which is faced by most of the teachers, that they lacked experiences and training to deal with multicultural students. She goes on explaining that learning of student digital behaviour is another barrier in digital context, as student's perspectives and takeaways from the studies are diverse. Moreover, there were cultural based digital nature and language implications. Thus, needed a wide research on cultural introspection and understanding of socio-cultural background of the students, she added. At the end she admitted that digital communication is definitely a boon and must be implied with a structured thought process. As per her, job sectors are shifting to AI but not completely there are more factors to it, as other fields are required to enrol in the AI and IT sector. Relatively, when asked about the technical knowledge**,** adaptability and understanding of the students she is sceptical and mentioned that most of them lack technological proficiency. Hence, she accepted that in pursuit of students and staff members, receiving regular training would be helpful in digital transition. When I added the IT related information on how to use canvas in my course was helpful, she clarified that canvas is applicable for hybrid courses like mine but other courses need fragmentation, restructuring and planning in the IT arena. Although there are digital examinations and home examinations she intervened on requirement of more variation in evaluation in the overall mode of examination which needs to be examined thoroughly with every subject area and courses.

Individually, she favoured the digital shift but on societal aspects she felt that the digital transit in higher education must be partial. The shift should follow in slow pace as "human beings require time to adapt to the changes", she stated. She cannot imagine a work place without human contact. When questioned whether all courses have the potential to become hybrid such as courses like music, arts she portrayed that it has much capability to construct hybrid models. On the contrary, when I asked about the physical education and emerging virtual reality technology in this field, she stated the cost factor and practical affordability of the students can be the protruding angles to be judged upon.
Conclusively, when asked if she supports that the future of education should be fully digitalized. She repeated "partial ways". She stated, "moreover the courses which are not designed asynchronously should face trials in the digital model" and students must be processed to revive and reskill themselves. Moreover, she said it's a prolonged process with careful learning and administering.

Sample Code: SU3
Department: Media Centre of IT Department
Standpoint: Digital Media
Date: 5th March, 2021, Friday
Time: 14:00 – 15:00
Place: Kristiansand

The subject represented the facilitator for media and communication within the organization. Upon being asked about the speediness and intensity of digital transformation, he confronted that it is faster due to the fact that people don't have much of an option as of now. Even though the organization was indulged in digital transformation for quite some time. He said

that lecturers were overburdened with the requirement to update themselves technologically, specifically recording in the front of the camera and editing the videos are one of the additional tasks for them.

Interviewee described the incident from March 2020, when the outbreak occurred and the organization, at first hand optional tools and digital equipment were provided to the lecturers to record their lectures and then shifted to the server, from there it was distributed to the students. It was mentioned by him that in the first few weeks there were technological hardships faced by the institute as to channelize almost 100 videos recording in a day and posted into the server, moreover at the same time conducting live sessions via. Zoom. He insisted through adding humour on the fact that corona is responsible for speedy digital intervention by talking about one of his colleagues from another Norwegian institution who was conducting research from past 20 years, he stated that "Now they want us to do everything in 15 minutes, it's not right". The participant clarified that the digital transit was enforcement due to corona.
I added a question here and enquired whether 100 videos in a day caused technical glitch of any sort or the UiA was prepared for these possibilities, he remembered at some point the institutional distributor 'Cultiva Ekspress' had to upgrade the system but also specified that organization was well-aware and well-prepared with the connotations. The subject recommended UiA mini server 'cultiva' resulted to be an effective tool and launching zoom earlier although not utilized and implemented fully, it was a significant preparatory step which made the organization keep going in the pandemic comparatively other institutions. He insisted that UiA acquired the most vital tools required for digital shift and there were options available other than downloading zoom. One of them was conceptualizing collaborative videos with 'PULS' at UiA to facilitate instructions and awareness within the institution. Interviewee elaborated that there were four meetings conducted and the first one was about how to implement or install zoom and factually the number of views was 3000 which outnumbered the 1600 employees at UiA.

When asked to identify the opportunities and challenges during the pandemic, the subject stated the challenges are ongoing as most of the lecturers were doing the online classes for the first time, although the tools were available with the university. However, the department was challenged as the classroom lectures were streamed online, thus they received enormous emails and questions asking for intervention, mainly due to the reason that teachers had to plan their lectures and recordings in a week's advance. He pointed out the queries which were basically the prudence on what they should remember while teaching and resolved through internal collaboration of PULS and the staff responsible for Canvas. He mentioned about one of the surveys of UiA on the responses from the student during the earlier pandemic wherein, another challenge was viewed on creating academic alliance with the students in the form of communication and providing academic resources as many students were unheard from their lecturers for a quite long time. Furthermore, he exclaimed the opportunities at university level as they are adapting to the new digital age.
According to the interviewee, the quest on digital communication and its capability to outreach human psychological sensitivity and building trust based connectivity has its limitations as referred to traditional face to face meetings. From the teaching point of view, he explained that the teachers have to figure out the best way of involving the students as sometimes it is one-way communication through video recordings and other times lecturers may prefer interacting with the students in a zoom meeting. He raised that students preferred coming to campus for physical classroom teaching. Subject elaborated on the restrictions of digital mode of communication from the staff member's standpoint, although they communicate mostly through video calls but ensure regular campus based non-virtual meetings. Thus, he intended when people meet for the first time it should be face to face meeting followed by digital meetings, it is rather helpful to build relationships based on trustworthiness. The participant clarified that UiA as an organization from the initial phase of the pandemic opted for campus based teaching, and wanted the students to visit the campus during autumn semester and students also supported the campus based teaching at large, later it varied according to the pandemic intensity. The other universities went fully digitalized and one of the reasons conveyed by him, unlike other universities UiA students were adhered to for campus learning.

Later, due to the pandemic the digital mode of teaching remained the sole alternative to administer education and learning. Hence, it was anticipated by the subject that post-pandemic would be seen as an era of both normal and digital teaching, while out of the two increments of the digital mode is expected along with reforms in media centre.

When intermediated with the question about the relevancy of digital teaching, in relation with covering course components such as; practical, technical and theoretical contents, he envisioned the need to discover the course suitability in the digital teaching. An illustration was given by the subject based on the meetings with various other institutions wherein, the participants shared their experiences and those cases were so diverse as some strategies worked well for someone while others have the concern with the similar approach, he adds. One of the prominent exemplar on newly introduced laboratory

based teaching was described by the interviewee which requires the students to go through the instruction centric educational video course and later to qualify they have to attend physical examination. He demonstrated that digital mode of teaching and learning has new scope to peek into, as it is discovered to be a more productive way of teaching rather than the traditional way of one-way communication in this case.
One of the component of digital security in terms of personal liberty of UiA students was outlined by the speaker in relation with 'GDPR' framework, the institution looked into the matter and signage were created outside the classroom stating that the lectures would be recorded and mapping of the camera is provided so that students can select their seats accordingly. As per him, it becomes a significant step towards due to the fact that when the lecturers are live streaming, the student becomes the part of the recording and the cameras are always angled towards the back of the peer's head. Alternatively, he highlighted that students have the option to be visibly active in their lectures or they can listen to the recorded versions later, and one of the possibilities is that many students were reluctant to be interactive in such setups. Subject depicted the requirement for more dimension in pursuit of security, and when it comes to particular teachers, many of them are hesitant to record their lectures as they feel that their lectures are a personal element of teaching, moreover vitally recorded version of teaching and personalised verbal interactive teaching are totally different approaches in a pedagogy. Some of them preferred the communication based teaching however, for them they got the option for live streaming but mostly, teachers agreed to record their lectures, and seemingly there were both the provisions for recording and streaming available for the teachers, he stated.

He mentioned one of the responses of a student survey at UiA where students were actually benefited with the recordings and preferred recorded lectures. Subject described that digital security, its variants and digital responses must be measured in terms of canvas intervention in a course design, and timely updating are required to restrict the upcoming concerns. He said, currently the organization has controlled measures towards digital safety. He elongated on the fact that content sharing must be scrutinized in digital security, if some content is meant to be distributed and vice versa. The recipient suggested it can be done with a simplistic approach such as videos should be restricted for downloading. Another highlighted regulation that students must be prohibited to record the lectures on their own and should take lecturer's consent.

As stated by him, the technological knowledge and adaptability varies from member to member as some are willing to learn and upgrade themselves wherein, some want to go with the traditional blackboard system but the corona situation made it obligatory for the teachers to transform digitally. The participants represented with the available digital solutions for the individuals who are comfortable with blackboard teaching were given digital tools like 'smart board', document cameras to conduct the online teaching. Moreover, UiA facilitated its staff members with TV studios to record their educational lectures and he precisely told that before corona the reservation was once or twice a week, and during the pandemic there are 10 to 12 bookings per week. The advantage of these spaces was that these are self-service studios, and they have assisted the teachers to learn the setup through building tutorial videos. At the same time, he also specified that despite the assistance some lecturers were unsatisfied because digital form of teaching was unsuitable for their subject areas and not everyone has the similar level of technological adaptability. He added that technological knowledge due to many factors, and one of them is the relative experience with the digital tools and definitely the eagerness to accept the change. For instance, the subject foretold about a course which started during the previous semester by PULS at UiA and his team contributed in the learning procedure, within that the staff members were taught on how to make educational videos and other technical knowledge. Comparatively, it is found that the participants of current semester have higher technological knowledge than the trainees from the earlier semester.
In relation to the question of future technological development in higher education, he stated that there is more potential to explore in the pursuit of tools development in the education sector as he mentioned that right now students use zoom at large but there are other technological approaches which must be combined with the existing tools. He thought that the educational tools must be studied and explored constantly to enable effective technological advancement.

Furthermore, when asked about the equal access of digital resources for the marginal students and countries, he admitted that to set up digital based higher education, building supportive infrastructure is the crucial requirement and students should have basic requirements like having a computer and internet connection which expectedly adds a cost factor. At least knowing about digital tools should be prioritized and teachers must use it, so that students can be digitally aware through observation and gaining technical skills is the future.

The subject acknowledged that fully digitalized collaborations and co-creational activities are non-useful, he suggested that students should meet physically at least once, and later can be communicated through canvas as digital platforms are important to continue the relation-building and maintaining social network in order to learn together. At last, the interviewee definitely thinks that digital shift is the new normal and he is looking forward to it.

Sample Code: SU4
Department: Strategy and Management
Standpoint: All Courses and its management
Date: 8th March, 2021, Friday
Time: 13:30 – 14:00
Place: Kristiansand

According to the subject, the department was challenged by the immediate requirement of transformation which was lacking systematic and channelized pedagogical approach due to the requirement of face to face classroom into digital pedagogy, moreover it is also vital to keep up the pedagogical quality of the courses. Interviewee stated that physical movement was restricted, and hence following up and assisting staff from different spaces were although challenging but everyone worked for it. He claimed that "overall pedagogical adjustments" were the prominent challenges.
When asked about the most affected stakeholders in the pandemic, he responded that students were more vulnerable due to the quarantine and social distancing requirement. On the other hand, he mentioned that researchers had both disadvantages and advantages as some of them were unable to do free research work while others got ample time to write their research due to isolation.

As per him, the future of research lies in reduction of travel necessities, one of the practical examples he depicted is that "at present this zoom interview, although it is effective it would be better in a face to face environment". So, in the future one of the necessary elements is formulation of questions in a qualitative interview. Another perspective was shared by him that there is a requirement to look into the outcomes of the research methodology because, if the face to face and zoom interview both produce the similar level of valuable content then, it is possible to have digital research, he proclaimed. He also admitted, "it is undeniable that digital research lacks the influential dynamism, energy and environmental engagement in the research activity". Therefore, he insisted on customising research dimensions and productivity to the digital requirements.

For an effective communication view point, he believed that building social relationships and creating trust worthiness through digital communication is possible. By referring to some of the studies he stated that it is easier when people meet face to face followed by regular meeting points. From his personal observation, he said "people are connecting with the entire world through gaming" but he also agreed that the intensity of those relationships are diverse.

The potentiality of digitalization from the perspective of its practicality or artistic nature of the course components differs but as per him it can be taught digitally too. digital studies can be used for rote learning and lacks experiential learning as for instance, he mentioned that in the medical studies to become a surgeon, the learner has to perform practice in the donated bodies. Thus, he elaborated that certain learning elements can be imitated digitally while certain constructive courses can be evolved and transformed with benefits. He added that courses like physical education also have a potential to transit digitally such as exercises and demonstrations can be taught digitally and virtual interactions in a group is possible with partial digital setups. So, according to him some courses can be fully digital and others partially, more or less some require practical learning too, he particularly mentioned that every course could be included in the digital environment some way or other.

The technical skills of the individuals vary, he described some common behavioural aspects that some individuals were willing to adopt technology while others want to go to the traditional learning, and see this as a temporary situational phenomena and many wanted to innovate in terms of technology. Then he also showed the importance of recognizing these factors which involved both individualistic choices and skills in the area of digital based higher education. When asked about whether technological awareness programs would be necessary if digital shifts in higher education persists on regular intervals. He informed that technical training is usually at the PhD levels or professor training program, but in an online learning course it is unintegrated and in addition many external and supportive courses are available to provide the technical knowledge. One of the regulations by Norwegian government was mentioned by the subject that when the professors were hired

internationally they have to produce the documents related to technical competency for example “in pedagogy, but there is a gap and possibility in here to offer at PhD studies and hence there is scope of development in this area”, he added.

Subject exclaimed that digital examination would have the possibility of increment in the near future and from a potential favourable digital outcome, it is required to design the examination as per the courses end-results. Maybe traditional examinations can be converted to problem-based examinations wherein the students have to represent their analytical skills, for instance there is an instructional draft at an online set and students have to apply the concept, he thinks there are many components of examination such as written or oral examination. He clarified that there is a gap to overcome in the area of examination due to lack of training in conducting online exams, and this requires a considerate time to be developed further. Whether digital security is a matter of concern, he said that “We already traded our lives through mobile phones”, but it's required to be cautious on the digital system and gathering information. One of the notified points he mentioned that the digital footprints can be managed with appropriate guidelines based on online ethics.

Respondent specified that, the futuristic jobs were going to be in the field of data management majorly, and AI is generally seen in marketing, text analysis and for languages, however interviewee foresees that IT related jobs are a partial segment even after the digital shift whereas, involvement of IT and AI related jobs would be an extensive part of our lives, he claimed. Moreover, he added that there are already new businesses and innovations are evolving to create value and many of us are already experiencing this.

When asked about the collaborations and digital divide from an international standpoint he agreed to the gap between developed and less developed nations. Additionally, with respect to the marginal students whether it is from financial obligation, or physical impairment he answered. that “while working with many international colleagues and students” it is found that online infrastructure is disproportionate with various diverse factors associated within this.

He mentioned the universities of EU and US have access to more databases as compared to some universities from the global south which is one of the obstacles towards digitalization. However, there is an option available to the people in the form of mobile phones where they can access data and many other features. Does education is turning towards localization to globalization, he is hopeful that in future there are international travels, collaboration, exchange of knowledge through fun-based active learning meetups. The participant also denoted that developing sustainability and saving environment is also significant, and there is a requirement for less travel and look for solutions towards cultural exchange and learning, such as partial digital setup.

The subject explained about the strategy of UiA was prioritized to the students well-being and learning outcomes, in associated with supportive IT and administration activities and at secondary level to continue the process of knowledge creation, research and innovations. Conclusively, he favoured the digital shift from both social and personal aspects, therefore it is the new normal. As per him, the pandemic made the digital shift faster and in future people are expected to acquire technical knowledge for job applications, nevertheless the subject denied a workplace without human existence and higher education should be partially digitized.

Sample Code: SU5
Department: ‘PULS’ Centre for Teaching and Learning
Standpoint: Pedagogical related technology and R&D, Educational quality and collaboration
Date: 11th March, 2021, Thursday
Time: 14:00 – 15:00
Place: Kristiansand

PULS is an administrative part of UIA, the respondent notified about the initiatives of the top level crisis management team and they have a significant plan for the organization as a whole. The educational tools such as zoom, canvas and video teaching facilities were available well in advance. At the departmental level immediate response to the change on individualistic level was harder due to lack of strategic mind mapping.

According to him, the individual’s inclining towards technical advancement and wish to gain technological competency fell under the beneficial group. The individuals having psychological reluctance to endure with technological involvement into their daily activities, faced barriers in comparison with the other set of groups. From the departmental view on the

stakeholders, he described the obstacles at various categories of subject's requirements such as; practical versus theoretical disciplines. For instance, he elaborated that the lecturers in mathematics are practiced to solve the problems on the blackboard while teaching; and now they had to switch to computerised based demonstration immediately, on the other hand language learning was easier to shift in the form of PowerPoint learning approach. Additionally, he spoke about the teachers and nurses who have their necessities to commence their profession faced challenges to execute their pedagogical activities.

The interviewee foresees two possibilities; as the scope of opportunity for the university for digital transit, he thought that from now on people would know the ideal way to utilize technology for the betterment as compared to the previous scenario and also accepted that many individuals would prefer traditional ways of teaching. Most importantly he briefed that universities are backed with potential infrastructure and digital tools and this makes convenient and suitable digital teaching. As he said, "in general Norwegian universities are using the standard method of Zoom" whereas, "Canvas and Kontura which are widely used academic digital platforms".

He highlighted that future estimation of more home offices are a rather sustainable approach and assumed internationalism of education have the opportunity to spike up, as the IT infrastructure in Norway is an advantageous platform to integrate with various nations. As per him, the work sector would likely to transform in UiA due to the fact that employees can work digitally from their regional locations, including the local employees also have the option to reduce their transit time to the workplace. He compared the IT infrastructure of Norway with other countries and was optimistic about the progress in the ICT framework of higher education.

When questioned about the digital communication and its effectiveness to the peers, he claimed to have many challenges in this area and spoke about the trending 'Zoom Fatigue' referring to an article from Khorona' and related his screen experience in context of delivering lectures and attending constant meetings on regular basis is tiring and additional workload for many of his colleagues. He added that the home offices are also an imbalanced and unsuitable form of work environment for many as they have to attend to their children's needs and nurturing while at home. Indicating the solution, he pointed on the technique of 'synchronous and asynchronous' lectures by many teachers. Wherein, the teachers are blending sessions technically, assigning videos to their students and expecting them to view it before and later they attend an interactive online session. He validated that students are actually welcoming the blended session with reference to the student survey at UiA during the pandemic.

The recipient mentioned his non-association with the research activities but at prior idealizes the issue of storing sensitive research data and foresees research would evolve in the context of ICT development. He expected that the research area would advance as it has more potential to connect with the people digitally and there is scope for development in the research design. The interviewee related one of the examples of research innovation which is testifying the zoom fatigue on the Zoom website itself for the zoom users. Moreover, he said that advancement of technology such as "Augmented Reality (AR), Virtual Reality (VR)" etc. are the futuristic ICT objectives of higher education which is likely to develop even in the absence of corona and how its effect on the teachers and student's response is still unknown.
In relation with concerns over data security and quality teaching phenomena like freedom of speech and critical thinking aspect, respondent the recent incidents of data theft are disturbing and make all of us susceptible to the condition. During corona, at UiA the data capacity was fulfilled and required a time to time reset which represented the major hurdle towards digital shift, he specified. Also mentioned that "an advantage of GDPR in Norway is that its conditions for permission on data handling is flexible and the individuals are allowed to withdraw their permission at any point of time". Adding to the complicated nature of GDPR, he puts up "the mandate to create videos with academic content in a text format for the visually or hearing impairment related learners" which makes it a difficult situation due to the unavailability of technology for auto reading format in particularly Norway. He clarified one of the reasons is the language barrier, unlike English, "Norwegian dialect is different from other parts of Norway in terms of Algorithms". The participant emphasized on the requirement to educate digital compassion in the new digital age and represented GDPR potential reforms. Moreover, according to him, for many teachers it was more effective and "healthier" in a face to face classroom rather than the digital, as it tends to drain the lecturers physically causing the zoom fatigue. He expressed another aspect to it that the flexibility of keeping a "black screen" by the students also has a psychological barrier for the teachers to build a healthy connection. He often requested students to switch on their cameras as he believes that exchanging "learning energies" are possible only through looking at each other. He stated the distinctive nature of teacher's tactics and student's preferences and pointed out the prominence of black screens are more of an obstacle when the students are newly admitted, and teachers are unaware about the student traits and learning behaviour.

Additionally, when asked about the traits of international students and the black screen phenomena and maximization of teacher's concern, he replied that with a perspective of teacher's competency of digital communication, digital engagement, perceptibility of English Language for both students and teachers are significant approaches in the digital framework. While comparing the traditional classes which comprise of noticing the student's behaviour, bodily responses were visible and easily interpreted by the teachers. While in the case of international students there were elongated challenges for the availability of online reading material in English and the learning culture from the view point of international students is another factor which was highlighted by the participant. He gave an example that "in Norway the students address their professors with their first name in spite of calling them "Sir or Madam'' unlike other cultures, resembling the requirement to create a digital connection from the cultural perspective. Therefore, he found that it is important for the teachers to fill the space by introducing the Norwegian culture to the international students, and listen to their experiences and perceptibility. He also highlighted that student's personal traits, equal responsiveness and efforts are required to create cultural connect in a digital setup**.**

Irrespective of distinguished features like artistic, technical and practical courses etc. the education continued during the pandemic at UiA with spontaneous digital solutions at least to some extent and solutions like producing videos to the partial needs of the courses became the fundamental teaching format for every course, he stated. The interviewee mentioned that every course developed some sort of asynchronous teaching during the pandemic. One of the perspectives is one-way lecturing in a zoom for 45 minutes are monotonous for the students, hence they preferred to view pre-recorded lectures, but also elaborated that the intensity of asynchronous activity differs in accordance with the course's requirement and teacher's techniques. He believed that there is scope of development through substantial research in each course area. Particularly understanding the distinction teacher's faced during pre-corona and during the pandemic would depict the results for post-corona, participants anticipated the consequences for e.g.: How teachers would design their courses to be asynchronous and most importantly to what extent they would transform their practice??

He added that student interaction, participations through engagement activities are the essence of teaching so that the centre point of the course design revolved around the teacher's strategies such as; including online group activities, breakout sessions for student's interaction. Relatively, the recipient mentions the learner's plea for more online activities referring to the information from organizational sources. However, in the context of more blending sessions or conversion of courses to hybrid included various elements to consider, hence he disagrees with the possibility of hybrid learning. One of the prevailing reasons explained by the interviewee is that if the black screen phenomena exists, it is a biggest hurdle in a learning environment.

Then he talked about the risk of home examination in comparison with the traditional examination setup, for e.g., the discrepancies in internet connections. He elaborated on the pre-covid examinations, wherein students would bring their laptops in a digitally controlled environment equipped with technological staff assistance and supervision in an auditorium which supported the students during instant breakdowns and infrastructure to conduct digital examinations. Otherwise, he considered digital examination is advantageous for the students and teachers due to the minimal logistic efforts such as distribution of hard copies and shipping them for evaluation, he added many students have hard to read handwriting and through digital way the teachers are puzzled during verifying the answers.

Specifically, he mentioned that UiA is practicing digital examination for a long time in selective courses, the subjects like Mathematics are challenging to conduct digitally as the tools are required to solve formulas systematically. He stated that there is a scope of digital development in an examination sector and possibility for change in evaluation process, However, the respondent perceived that UiA is upgrading its format of digital examinations but needs to simplify the grey areas. From a comparative perspective, he described about many universities in the US, they have the grading system which is modelled to participate and earn points throughout the year which ends with one conclusive final examination. Even in that case, he clarified, "it is disadvantageous for the learner due to possible mishaps on exam day can ruin the whole year". Hence, interviewee stated that each subject examination protocol differs depending on the subject traits**.**

Regarding the technological awareness among the peers, recipients informed that the people are intent to use technology, and advanced with time through learning different tools while using the technical product. As referred to his personal experience using Mac, he is unaware about complex computer programming. He elaborated on zoom's user friendliness due to its manageable buttons as compared to Microsoft themes, and also pressurized on the need for practice of tools on a daily basis with professional support in imminent.

The speaker explained that the current generation has more exposure to technology and there is a generation gap" and moreover, updating oneself in a technology is a personal preference and their learning desire. He foretold that "this is an ongoing pandemic transformation where all the stakeholders are preparing themselves towards digital shift". It is also vital for the lecturers to formally attend technological protocol to design teaching even though there are flexible technological options available for teaching, he emphasised on a sophisticated technology and teaching environment. Work conditions are transforming, he suggested as pre-corona the timeframe of reporting at jobs 8am was mandatory and due to the technological flexibility the transition occurred due to the blended ability of the courses and moreover from many other technological integrations in a work environment.

The overall experience of PULS were accentuated with various integration through pedagogic theme from distinguished teaching department along with 'canvas scheme' and associate departments like 'media centre of IT department' to support the teaching approach as he stated that the multiple and periodic meetings; regular updates on UiA portal; conceptualization of instructional and informational videos; are the major context of an open approach by the university, moreover faculties knowledge transfer from each other worked at vast.

The recipient shared his working experience with the teachers on assisting in making videos for their classes during pre-pandemic and that was optional for the staff, and in corona everyone was situated to adapt to learn as fast as can, seemingly he said that the response was optimistic from his colleagues.

When asked about the international collaborations, he thought there is a scope of digital solutions to outcast this procurement, however according to him, it is very essential to meet people for cultural understanding. Additionally, he finds it complex to understand the scenario of marginal students whether in form of financial, gender and disability in a digital medium and how it would impact them.

He shared his experience of attending an ICT conference, many years ago wherein, he witnessed both zoom and Microsoft functional abilities as a digital tool. If compared, he observed that zoom has evolved for good over the time, whereas he remembered Microsoft with multiple installers and partners were quite complicated structures to understand. Therefore, he thought that the simplistic digital approach and tools are possible and represents a better opportunity for digital change.

He concluded, digital transformation would be faster, it is the new normal and as a society he disagreed with the need for a digital shift but to an extent the digital transformation has increased and is must. Individually, he preferred digital shift conditionally which is without corona being the reason for the digital transit. He also desired that major courses would be hybrid "but not all", as he emphasized on the UiA's objective for a campus centric learning environment with the significant digital amalgamation and modifications in the near future. He pointed that the university culture is required utmost to feel and learn through "academic based cultural experiences". He believed that it is an inseparable phenomena and that's why UiA kept campuses open unlike other universities in Norway, the students were encouraged to come to campus at least once a week. The recipient thought that technology proficiency in the job market would be significant in the future but needs a reflective understanding on how and when to engage at digital level. As per him not necessarily AI and IT jobs are the specific sectors as each sector would be likely to integrate technologically in some or other functionality. For illustration, he mentioned that the health sector is usually integrated with ICT at various levels but unable to function digitally as a single segment, and as per him, technological competency must be the basic requirement to acquire future jobs. He disapproved of a workplace without human contact and thinks university would be partially digitized in the near future.

Sample Code: SU6
Department: Division of Communication
Standpoint: Digital communication
Date: 12th March, 2021, Friday
Time: 14:00 – 15:00
Place: Kristiansand

From the perspective of communication, the respondent informed that departmental mode of functionality and objectives were unchanged during the pandemic, He said that "digital communication were already the interim part of the external and internal communication of the organization but the amount of communication was increased", and the particular reason was because all the staff members including lecturers and researchers had to shift their activities into digital format in a

matter of less time frame. The participant elaborated on the focus themes of UiA which was prioritized on the wellbeing and security then followed by the advancement of students in their studies towards successful completion of their degrees. He emphasised that “therefore a joint effort with the IT department was the centre of the process” and the obstacles were mainly to facilitate the staff members with persistent and fast-tracked communication to function effectively within UiA while working with newly introduced digitized academic tools.
The interviewee believed that digital media and communication has its own set of limitations even though it has the capacity to reach people rapidly, but it is also important to associate the readers with the content, and then they must receive the right message. In order to include them, it is important to practice approaches like “Proof reading’’ he specified which is to ensure the reachability of the content to the reader’s mind. He said, it seems difficult to implement during the catastrophic circumstances due to the fact that the whole process has to take place in a short span of time to encounter the effectiveness and appropriate outcome of the content. Thus, the department focused on editing the information in the university portal with the ongoing inputs and changes, as the text messages lack provision for editing. Hence, to keep the control and the scope for updating, the text messages to the students were kept short and pointed towards the web link for further details. Another significant limitation was pointed by him, that “as a communicator in the digital platform it is impossible to anticipate the outcome of the communication unless they receive written feedback from the readers”.

As per him, due to the corona situation the education and communication is inclined towards the need to develop digital competency among the users which is aimed for digital learning model, but conditional as due to his personal realization that UiA as an organization values essentiality of campus life consists of teachers and students and therefore, the digital transformation must be partial rather than fully.

From the aspect of personal safety in a digital environment and studies he said that “definitely we must require a secured network”, as currently he is using “VPN network” which could be a contrasting effect in the security if someone is using home networks. When asked about the critical thinking and freedom of expression in context of quality education and communication, he adhered for the institution's need for learning and understanding to fulfil those criteria, and he is unsure about the depth and variabilities.

On the importance of technological knowledge and awareness in higher education, participants are hopeful that digital tools must be designed in such a way that it can be learned and implied easily without any specific training, he is optimistic that futuristic software would be user-friendly and easily adaptable. In relation to it, interviewee added that most of the students in the current learning system possess the required digital knowledge and in a way he is still unsure about the significance in the learning environment.

Participant highlights, in terms of collaborative models generally there are tendencies of shift which are based on the development status of a nation likely due to components such as; climate changes, travel immobility and economic barriers. For instance, he stated that it is difficult for Norwegian universities to collaborate with the Kenyan institutions with face to face strategy in the pandemic but there are considerable means for the opportunities in the digital mode of communication which needs to be explored. He specified, even before the pandemic the notion of less travel was surfacing due to climate change and university explored the ways of digital collaboration.

When asked how corona made the transit, he replied that it is faster and doesn’t think that digital shift is the new normal as there has to be a balanced solution. He further explained that we do require digital transformation in higher education socially which is based on its potentiality to provide access for audiences in remote locations, and personally he believed “we do need digital shift”. From a perspective of course components he elaborated that “hybrid course design is not possible for all subjects currently”, in accordance with the immediate availability of technology in the market.

He was asked to imagine a workplace without social or human contact, he agreed certainly based on the current pandemic experience, but he disagreed with the phenomena from the personal view point and in a long term. He elaborated that “he wanted some universities could be digitized but not for UiA and all the universities”. This could be helpful in order to keep in pursuit with developing nations and remote locations so that education must be available for all and travel must be minimal but not completely, moreover the living expenses can be saved, he stated.

As per him, the future jobs are not necessarily AI and IT related but people would require digital skills to acquire jobs. One of the factors was notified by him on the possibility of uniform accessibility of technology, as stated by him that “the university website is available for the individual with visible impairments which is obligated by the law”, in contrast

technological facilities to the marginal people throughout the globe does not mandatorily have the access. He stated, “work culture is not going to shift to digital culture” and higher studies are going to be partial digital, he claimed.

Sample Code: SU7
Department: Department of Social Science
Standpoint: Administration view on teaching and learning
Date: 22nd March, 2021, Monday
Time: 15:00 – 16:00
Place: Kristiansand

The respondent responsibility as a supervisor of scientific and professional activity in a leadership role in association with the administration to amplify the research quality and content management. She mentioned the challenges in relation to passing down the communication with the help of intermediary management while being in a leadership role to ensure that the information is made available to the right stakeholders at appropriate time frame and moreover, it was significant to identify the information which is required to convey to the potential individuals. From a research point of view, she highlighted the necessitated challenges was to sort out the information as per the needs of researchers, supervisors and faculties in a process of coordination with the instructions from the top level administration.

She recalled about the outbreak which was a year before and during the pandemic the teachers were struggling with conducting online classes all of a sudden. According to her, there are persistent mixed responses from various faculties as some were facing mental fatigues and rather several others are motivated to implement digital modes of education. She thinks the students well-being and mental health was most concerning in the pandemic and added that there are various possibilities to student’s responses to digitalization as well, many students prefer digitized over face-to face classes as well. Overall, the individuals from diverse groups who have less experience with media tools and equipment faced difficulties and the tendency to expert and accept the digital transformation is not limited to specific groups. From the departmental point of view, she assumed that the IT department has their own set of challenges. She elaborated on the obstacles faced by the “social service and child protection” department as the teaching and studies are based on a practical environment equipped with “stimulation and role play” approach which necessitates them to meet people. The teaching and learning usually takes place with live group interactions and engagement and she highlighted that many of the practitioners were reluctant to come to campus were challenging, as in this course agenda meeting people is fundamental. The guidelines for integrating “streaming, zooming and lecturing'' was a challenging factor specifically for practical courses as compared to theoretical studies.

When asked about the possibility and extension of hybrid courses in context of distinctive features such as artistic, practical and technical courses she notified about the understanding of the word “digitalization” in terms of courses, for e.g. she said that “during initial years of teaching she faced challenges to stream videos and messages” and the mobile phone message system and technology helped her to learn and implemented new form of learning protocol. Another aspect was explained by her, on the simulation program of social work course which consisted of recording the simulation videos, followed by analysing it. One of the technological tools she mentioned is that the “Laboratory at Grimstad” is technologically equipped with “eye-tracking” ability which helps to analyse the videos. She anticipated that there are numerous possibilities of technological integration in every course and many of them are unaware. She connected technologically intensified student learning activities namely; “Kahoot and Dometo”, those are eligible for both online and face-to-face teaching formats respectively. She agreed that there is a potential for development of technical tools and moreover, technology has given a lot of flexibility in teaching techniques as it reduces the need to transit to the workplace, hence zooming is the mere requirement. As per her, the online interaction and online engagement schemes are rather effective options.

The participant stated about the impact of digitalization on research activities from a social work perspective, she intimated that social anthropological research is affected, whereas qualitative interviews are appropriate in a digital framework but also differs from topic to topic and its suitability with research form. She explained further that research has its diversified area of protocol and activities, and utilization of digitalization has its advantage; for instance, collaborative research activity with various countries such as; a project in Uganda can be worked with non-requirement to travel are sustainable and cost effective measures. However, she thinks that to have effective digital solutions meeting people primarily is required to build trust.

In the viewpoint of the interviewee, the students must be evaluated in the notion of their capability to represent the knowledge in a limited time frame without any help. She indicated that there are various formats of group and collaborative work but the individualistic assessment is equally crucial in an examination framework. Relatively, as per her digital examination works well in a PhD dissertations and also digital assessment are part and parcel of existing examination procurement. However, she accepted that even though there are solutions for digitization, the experiential communication and learning from perceiving body languages is significant and thus, she thinks that "tacit knowledge" is unavailable at digital level. She expressed her optimism that "in the long run digitalization would be upgraded for better" as she compared her first impression of scepticism on emailing mechanisms in her career life. She added her agreement that with time digitalization has evolved and it proved itself easier and far-reaching in terms of communication, however, she also agreed to the increment in possibilities of susceptibility towards cyber threats.

According to her, digital security is a matter of concern when it comes to digital activities in academics. For an illustration she mentioned that if the zoom based interviews are mainly to acquire personal information, she would have disagreed to the terms of participation in the interview. In terms of online lectures, the university is looking after the areas to meet the concern effectively as she referred to some articles in "khorono (Portal from Norwegian University)" speaks about many incidences like risking of cracking jokes during online lecture can be a threat as the lecturers are unaware about where the videos are being passed on.
The candidate stated "I have less knowledge about the in-depth issues of digital capacity in less developed nations". In a way, she thinks the orientation of mobile phones and infrastructure have made the participation of the global south easier at least to considerable extent, in addition the marginal students are also vulnerable to digital divide as resources and infrastructure are required. In general, she mentioned that Norway also faces issues in equal and easier accessibility of digital resources to all the student's group. Moreover, the uncertainty of mobility is one of the intervening factors represented by her. In accordance with the degree of academic related globalization, she depicted that the phenomena of either local or global approach differs in per countries, many of them have Nationalist approach for e.g. "America First". In the case of Norway, she pointed out that the government made mandatory space for 50 % exchange students and she is optimistic about the futuristic way for internationalization of education.

According to her, digitization would be faster and it is the new normal and as a society we need the transition which included her preference. She disagreed on the possibility of shifting every course in a hybrid course. The future jobs are not necessarily AI and IT related jobs and she denied the requirement for technical awareness is the key to get in the job market. The recipient disapproved of the equal accessibility of digital communication during the pandemic. Her views on a workplace with a social environment is based on the options available in the forefront of an imposed situation, she approved to work in a flexible socially motivated workplace. The participant concluded with the preference for partially digitized higher education.

Sample Code: SU8
Department: Leadership
Standpoint: Organization, Administration and Leadership
Date: 29th March, 2021, Tuesday
Time: 11:00 – 12:00
Place: Kristiansand

The respondent began with the description about the occurrence of the pandemic and mentions about the University's responsiveness. Initially, the organization to deal with the situation framed "Strategic crisis management team" consists of key personnel at the top level management representing significant stakeholders and particularly the head of student leader exchanged information through several meetings to conceptualize the further decision on how to organize teaching and learning in the crisis moment. He stated the key decisions which were thought of at the beginning. The key employees in the campus were called out in the campus, so that they can assist the employees to work from home. One of the foreseen hurdles was to provide students with laboratory equipment which they had to discontinue, especially, teachers and nurses field work was halted. The fundamental planning revolved on firstly understanding and evaluating the time period of closing down and keeping on initiating further plans in the estimated time frame, he said it was difficult estimation to think upon at prior. To equip teachers with online pedagogy assistance and technology, "webinar courses'' were launched and simultaneously many groups were created to schedule digital classes and plan activities at the background, one of the vital responsibility were to purchase the available technology and tools in the market, he also stated and indicated on the indecisiveness about examinations which were one of the significant area of obstacles. However, the recipient was informed

about the readiness of the university's crisis team until February and as soon as March occurred, the institute started following the protocol as decided earlier which made the transition hassle free. The main challenge was to integrate the teachers as many of them were used to traditional setup and unaware about the utilization of digital tools and he agreed that in spite of these obstacles, the university proved to manage the pandemic crisis effectively.

When asked about the distinctive nature of strategies as the pandemic continues, he replied that the approaches are rather similar which is due to the prior experience of managing crisis and the basic strategy remains unchanged. The participant elaborated on the rigid protocol maintained by the university in terms of number of students permitted to be on the campus auditorium and number of students on digital platforms are pre-determined. Even though the Norway opted for another lockdown, the university still continued with its usual digital functions under the pandemic era, moreover the speaker depicted that UiA have very minimal cases of corona out of 50,000 people" as they planned standard protocol to sit at distances and avoid over-crowdedness.

According to him, the most affected academic actors were the teachers who were not use to digital tools and resulting them to fatigue also due to staying online for longer period and significantly departmental heads and course coordinators from every study programs were overburdened due to constant effort to put everything together including employee's wellness and providing them with right technological tools in order to assist them in performing their jobs. Precisely, he explained that the formation of work schedules depending on the number of people was challenging. For instance, it was obligatory for the working heads to go through every course and number of students associated with the program to divide the classroom learners into small groups. The recipient referred on the last one-year agenda and indicated the plans for similar practice in the upcoming spring semester. He also added concerns from the perspective of the administration and examination centre which included a re-scheduling agenda and many staff who wanted to implement additional plans to the existing system were strained as unable to act on their plans.

Interviewee claimed that UiA outperformed during the pandemic crisis in comparison with other universities in Norway, he referred to the student's survey wherein learners were satisfied with the digital teaching and learning. To be specific he said that "business was scaled to 3 out of 5 and 7 in overall performance" and undoubtedly some segments were poorer in UiA, however a similar survey conducted at University of Stavanger (UIS) represented a backward score in comparison with UiA. Additionally, he mentioned that in the recent survey within the ongoing pandemic (December 2020), the same survey showed little improvement in case of UiA, whereas UiS continued to lag for better scoring. He highlighted the digital efficacy of UiA at national level, stated that UiA have two campuses located at Grimstad and Kristiansand and the university is digitally equipped with TV studios, Knowledgeable IT team, and proficient ICT framework. For e.g. UiA Grimstad have already been practicing lecture streaming for 2 years. According to him, the possibility of hybrid solutions to versatile traits of courses such as the practical and technical in teaching methods are quite possible. He further elaborated on the hybrid approach he practiced in teaching mathematics work tremendously and demonstrated the approach he used during the pandemic. He articulated his pre-recorded videos and organized seminars to discuss the topic and student's engagement. For the future he insisted that we have to look for hybrid solutions for everything. For instance, the classrooms must be equipped with technological facilities such as; video streaming and recording. Moreover, the university is addressing the need to digitally grow and provide the institution with standard digital amenities. One of the teaching approaches was highlighted by him that after the pre-recorded videos he assigned the students with "case studies" and he found that the video was viewed "8000 times" after the lectures. He indicated the benefits of the pre-recorded lecture as the students were referring regularly and continue to use it especially during examinations. Another aspect he illustrated is that if students want campus based lectures, therefore the numbers of students have to be reduced as addressing large groups becomes one-way communication and lacks engagement. However, he expected his students to watch through the videos before appearing for the face-to face lectures, and if unable to meet his requirement he assigned the students with additional tasks, he said "it is important to encourage the students through challenges" which is a necessary teaching technique.

The participant expressed that the transformation in the research sector is much likely to develop in terms of research collaboration, especially at international level. He described the characteristics of meeting type is an important element to consider for instance, when the meeting is about decisiveness, digital meetings are better options whereas, the conference for setting up plans are workable in face-to face meetings. Noticing body language of the speaker and knowing fellow colleagues are vital so meeting them once is a significant approach, hence he emphasized that "digital collaboration through webinars on the later part is very easy and cost-effective". It is also advantageous for the lecturers as they can attend conferences without missing out on their lectures and this protocol is sustainable for many as well, he added. He described

further that researchers no longer require funding for travelling and can attend seminars based on their own priorities, thus as per him research and collaboration would be modified towards sustainability.

He claimed that possibilities to improve digital examination are wider, he separated digital examination tools and strategies to conduct digital examination. For instance, he shared his experience in Mathematics examination, there are available digital smart tools for mathematics and students can get the math's problem solved by just clicking the picture, therefore he insisted couple of solutions said "right tools with academic values", some examples are; to rephrase the questions, questions must be in smaller text, not all students receive similar questions. As a result, students would be discouraged from attempting cheating due to lack of time, he stated. Hence, he wanted to focus on smart solutions to the examinations. He explained his protocol to execute 6 digital examinations throughout the year and include the scores in the final grading, but he opted for less examinations for future which should break the traditional norms of remembering based examination, where the students don't have the option to reflect based assessments. He elaborated that the examination task should be reflective of student's knowledge such as; "project work, tests and feedback" based exams wherein ICT tools must compliment the assessment process and develop peer to peer feedback mechanism technology in every subject area.

The respondent agreed to the limitations of communication in context of feedback mechanism, he referred to his strategy to conduct online seminars (Group activities) and later he provided a reflection on their performance. The participant described that these gestures help in developing trust with the peers. For instance, he elaborated on the standard protocol he follows in "Statistics Subject", he uses scientific papers called it as "scientific compass" as the fundamental format, he instructed students to present their paper within the limitation of 6 pages, if a student exceeds even the 7th page faces rejection. Additionally, he also prepared standard techniques to direct students in a posters preparation task which are graded on approximate four typical categories; some namely are compulsory usage of "regression analysis and standard deviation" methods in their paperwork. Most importantly at the beginning of the course the students are informed about the do's and don'ts and he pointed out the feedback from the students that they have learnt to implement theories and statistics through these techniques. He insisted that the framework of similar five weeks' tasks followed by implication of theory is one way and should increase such approaches in teaching.

In recent times, digital security is a challenging activity for the university and there are more potential for discussions as per him, he spoke about the scenario of 10 years back where the thought of issues related to cyber threats never came across, it was more of working on effective tools. He illustrated about his past teaching techniques including online tools in association with university of New castle and data of the Norwegian students was accessible for them and hence he states that data storage and data accession are very vital areas to look upon. However, recently due to GDPR intervention and potential sensitivity to data leakage some projects and online tools are halted. At UiA, he mentioned that the IT department verifies the tools and it goes through various radar of scrutiny. It is significant to form appropriate tactics in terms of data privacy, for instance, he referred to GDPR norms, according to it, students can keep their camera off during the lectures while in examination, it is obligatory to ensure the presence of the right candidate. Thus, he thought that to secure students data through appropriate strategies is required.
When asked about the accession issue of research data, he spoke about an upcoming discussion in April 2021 and indicated the concern of sharing data openly at international level is a threat issue. He continued, "it requires large servers to save data and Norway being a small country should collaborate with Nordic countries like Denmark and Sweden for data storage". From the angle of security UiA is using "Scandinavian zoom" as zoom bombing incidents on "zoom US '' platform was commonly seen, he added that there is scope of wider discussion on data storage and data accession strategies.

Respondent is certain that internalization would be impacted by many factors but encouraged new possibilities. He explained although 50 % mobility of the students is obligatory, it is impossible in the pandemic situation. He puts out solutions in the form of shorter trips to internationally partnered universities as the courses can be followed online, moreover research collaboration and teacher's collaboration is also easier through digital mode, he added. In addition to it, he thinks marginal students are going to get impacted by the lack of finances to travel abroad, Norwegian students use "Lakassen" for financial support, but it is significant to view its availability for shorter trips. In terms of local or global academic approach, as per him, Norway seeks more collaboration with "Sweden, Denmark or other European non-English speaking countries. In the past, it is seen that Norwegian students often travel to Australia and the US as they have the ability to speak English, however, he comprehended the possibility that "it's not local rather cross-bordered countries".

According to the interviewee, the digitalization of higher education at pre-covid era would be partially implemented and faster in progress. He believed that it is the new normal and digital shift as a society is required. He individually favoured digital shift and anticipated more hybrid courses. The recipient agreed to the required digital proficiency to acquire jobs but disagreed that futuristic jobs would be merely in the AI and IT sector. He said "access to digital media and communication was better in Norway than the countries with lack of substructure" and as per him, digital communication has its limitations to some extent. In conclusion he thinks, imagining a workplace without human contact is easier but certainly dislike it, people should learn ICT and prepare for a partial digital shift in their daily activities of higher education.

Sample Code: SU9
Department: CANVAS
Standpoint: Digital platforms, tools and communication
Date: 14th April, 2021, Wednesday
Time: 15:00 – 16:00
Place: Kristiansand

The recipient mentions that about a year ago at the moment of the pandemic outbreak, initially all departments closed down their face-to-face teaching and the next phase appeared to be preparing the staff members for the online teaching as most of the teachers are newly introduced to digital approach in pedagogy. He mentioned that initially it was very chaotic because he was getting a lot of phone calls. Thus, the initial task was divided into four short instructional videos; Firstly, to create a video instructing on installation of Zoom within their UiA account, secondly on how to create zoom meetings, thirdly, how to create breakout sessions and lastly, how to record lectures.

At the initial stage of pandemic, challenges were distinctive as compared to the issues faced by current ongoing pandemic, recipient described that at the beginning the sole concern was shifting face-to-face classroom teaching into "face-to –face digital teaching". He expressed that the notion of education for the students was challenging as their mind set on overall experience of academia is not limited to one single lecture standpoint. Meanwhile for teachers he highlighted that it was more of a psychological barrier such as; to face camera or putting microphones to teach while facing barriers to teach black screens as students keep their screens off, and significantly maintaining same lecture quality in comparison with traditional face to face teaching.

The participant continued and explained the challenges evolved eventually as the time passed, for instance, if there are 200 students in a hybrid course, half of them attend lecture from home and other half from auditorium and teachers are facing issues in creating hybrid sessions to balance pedagogy and technology. He elaborated that usually due to setting up time schedules and supervising group work after the lectures are challenging, currently they have to supervise both digitally and face to face are concerned areas. Interviewee compared the pre-corona era lectures were used to go to each breakout room to give live feedback to the working groups and that has changed and is challenging for the teachers. Now due to the recent changes in breakout sessions, more time is required to arrange advising sessions as compared to old breakout rooms and he also notified that students are aware of creating their own zoom groups. Another phenomenon of challenges is the reduction of time frame of the lectures, he mentioned, thus the lecturers were advised to keep the lectures in a "seminar format-20 minutes" as students tended to disconnect in a long 3 hours zoom meeting. Many teachers considered alternative solutions in "Pedagogy and Didactics" depending on the student's number and courses.

The recipient mentioned specific issues related to various stakeholders; in case of teachers, the individuals having minimal digital outlook for teaching and lack of ability to connect with digital equipment, tools were badly struck in the pandemic. Whereas technical staff faced issues to provide digital resources to the faculties in relation to connecting digital tools with the pedagogical agenda of the lecturer, also to provide live streaming at 20 to 60 places at a time was challenging for them. He added, from the perspective of the examination office they faced difficulties to restructure and redo examination strategies from spring 2020 onwards. He said that students struggled to keep their mental health up in the absence of social contact. The interview pointed out that factually UiA students performed well in their examination in spite of the pandemic hit them and he also compared that many European Universities like in Czech Republic have stopped being functional.

When asked about the role of “Canvas” in sector examination and assessments, he replied that Canvas is a platform which validates the candidate to be eligible for the final examination and the criteria is to get scored in all the tests throughout the semester as canvas indulges in portfolio assessment. On the other hand, he stated that “Inspera” is a form of home exam with a digital framework for the purpose of facilitating the submission of the examinations. Precisely, he explained that examinations on Canvas are inconsiderable as the students are non-randomized and lack censorship in its functionality.

As per him, digital examinations are better, he described that at least “70% traditional examinations” were held on huge auditoriums, or rented places outside the universities with IT staff to assist and significantly closed access to online media during the examination, He opposed this concept because it contradicts with the work culture at offices. One of the examples from the examination point of view he mentioned that one of faculty selected oral examination in an online but as per him, it is inappropriate in the spectrum of examination censor. He compared to Universities in Denmark and its successes with home examinations and highlighted the requirement to work on new policies related to examination protocol. He added that the hybrid solutions in teaching methods have potentiality but to some extent which is unknown to him.

In relation with digital security, the recipient claimed that Norway and UiA is handling issues in a secured manner as Nordic zoom is used in spite of US Zoom. He mentioned an illustration that UiA eradicated “Zoom integration” after a legitimate debate on Canvas platform as they found a potential threat of “bouncing of online traffic” to the US based server. The participant warned that the cautious speculation at university level is a mandatory step to secure the students and faculties.

He agreed that digitalization made it difficult to have similar levels of approachability towards the teachers and feedback system is shielded with limitations and he says, many of them talk about feeling distant from each other in terms of communicating effectively, if compared with face-to-face. For instance, many teachers feel weird to look through the camera at the students and some teachers welcome the online feedback protocol.

Further, respondent tapped on the facts based on his perceived experience, he said that the pandemic is not leading us to digitalization, as a society it already existed from past 25 years in Norway and digital integration, its dependability went unnoticed by the faculties. He mentioned that except for lectures everything was digitized in some or other way and now due to corona the last phase i.e. the lecture part also tends to transform. He elaborated that traditionally students use to meet teachers in person or with handwritten notes to receive assistance and now due to digitalization the feedback process has become easier. The cycle of significance is represented by the interviewee that for teacher’s students are vital and for students it is social well-being. From a general perspective and practitioner of his field he thinks qualitative research is affected as meeting people is prohibited, for e.g. going to conferences, discussing and meeting people in person is a more effective process.

Digital competencies expanded during the pandemic he said, as many students and teachers push towards developing their skills and from a futuristic standpoint it is undecided whether students and teachers are going back to the old techniques of doing things. He anticipated that individuals who have positively reflected upon the shift such as seminar format classroom and later organized for discussions, are most likely to transform themselves and in either cases they would be going back to traditional ways.

The recipient designed the “Masters in global planning and development hybrid course at UiA around 20 years back and highlighted that the course agenda was fundamentally to learn through discussions and later it shifted to canvas forum. He added that the students are aware about the elements of the course and many learners from Uganda, Ghana, Oslo take up this course knowing it as an online course.

Digitalization has impacted the less developed countries, during the pandemic UiA experienced 100 % admission, he outlined that possible cause may be the absence of tuition fees and he assumed that many students are unaware about the cost of living in Norway and to apply here they have to arrange for funding on their behalf. He agreed that students often apply for the overseas courses to experience the culture and if unable to travel, it is unlikely that students would apply for digital courses only and would impact the university’s growth, he claimed that “Globalization is a product and consequence to digitalization”.

He approved the evolution of new issues for the marginal students such as disability in the form of poor eyesight and individuals with mobility concerns. He said that the “old problems are now replaced with new ones”, specifically, he said that now the challenges are rather technical in nature as it is no more about difficulty in moving at the campus zone such as taking

stairs. For e.g. he mentions that about the course resources in canvas are unprepared for the special category learners and explained that with a poor eyesight, it is difficult for them to access the reading materials which are upside down and presentations with light yellow background are immediate hurdles. He also indicated on the 2018 law referring to make the course accessible for everyone.

He concluded with estimating digital shifts in the higher education world to be faster and partial but not from a new normal perspective. He admits that as a society digital shift is required by specified on the appropriateness to achieve it and in terms of studies hybrid courses are the future and disapproves hybrid approach for every program. As per him, digital excellency is expected for the learner to acquire a job, additionally AI and IT related jobs would grow in the near future. He thinks digital communication defies critical thinking and he favours the social oriented workplace.

Sample Code: SU10
Department: Media Centre of IT Department
Standpoint: IT-Technology
Date: 14th April, 2021, Wednesday
Time: 12:00 – 13:00
Place: Kristiansand

At foremost, the respondent explained about the functionality of the IT department during the invasion of pandemic which was rationally focused on “quality of hardware in different streaming rooms and amount of services” they can provide at a time. Interviewee mentioned that initially some rooms were unequipped and stated it was fortunate for UiA in the area of Zoom integration and advisory team as it was already existing into the academic system but factually remained unused by majority of the faculties during the pre-pandemic era. During the pandemic, Zoom was made obligatory and implemented in full swing for every faculty member.

Initially while implementing, the IT department performed its trial with existing user-friendly systems such as using; video server was prioritized beforehand, followed by facilitating teachers with sources and assistance, he recalled. The recipient showed that lecturers were trying to learn by themselves and so the transition was less muddled as expected by them. He referred to a study on the video production, the standard of the lecture resources was criticized as teachers were using similar classroom techniques for virtual lecture recording.

When added a question on the amount of work pressure during the corona period, respondents explained that they had focused on bringing solutions in a short period of time with adequate background research, moreover the solutions were temporary and kept on changing, therefore they had to keep on updating to the users. The large scale of manpower was placed on the equipment to provide assistance by answering the queries, and he indicated that many times they themselves were unaware about the replies which made them keep on searching for the response to be provided.

The recipient explained about his workplace and media centre’s substructure which includes a video room to record lectures and for live, he labelled it as a “controlled environment” where they knew the succession rate of the protocol. He went on describing that during May 2020 which is “before the summer vacation” they were “expecting a lot more traffic during July”, he stated “we did not have vacation”. However, he said, seemingly in July there was “very little traffic”, and as August semester started the rooms were reserved from “morning to late evening and even on weekends”.

According to the interviewee teachers were greatly impacted, elaborated on different types of responses from the teachers, some were anxiously looking for assistance, many of them were trying to experience and mend the issues by themselves, several others totally disconnected from the digital shift and finally some enthusiasts who enabled the changes in digital education with various speculation and experiments along with the IT department. He mentioned them as a trend setter as he saw “a change of education” as they were intending to do more research and trying to apply into their courses which is beyond the video recording, he called it “digital teaching or teacher”. Along with them the IT department “the demonstrators” worked towards pedagogically supporting them, one of the areas he mentioned, for instance, conducting digital examinations.

He particularly, mentioned about one of the department which is responsible for distribution of video rooms, they worked together with two or more persons to carry out the tasks as per their pedagogical requirements, for e.g. “Administrators thinking which room has camera and how can we fix this”, he adds and said that later phase these issues started working out

in a concrete model. Thinking about the students, he claimed that they are largely affected due to corona but they are the actors who are not the problem-solvers, they are the one who are the final respondents to the system where “they accept or complain or stay there”, he says in the digital shift.

Technical Awareness goes on increment over the years, recipient compared over the period of two years’, phenomena of digital education transitioned from digital communication to digital pedagogy as digital education became “more concrete” and represents “complete picture”. In elaboration, he mentioned that hybrid combination of the courses, user friendliness of the digital tools and how teachers are integrating their teaching with the program concept have evolved which no longer require technician and technological related expertise. As per him, the understanding of digital notion changed as pre-pandemic the digitization was a faraway concept, and now it transitioned to immediate response in the pedagogical format. The teachers would decide “what would we do next semester or next month”, the participant emphasised, moreover he thinks that students are also learning through meeting different lectures and getting to explore the possibility by comparing the faculties which also puts pressure on the lecturers to improve.

The respondent highlighted another aspect of transition in the digital framework i.e. the competition within the HEIs have increased, on providing appropriate courses during the pandemic. As students became more selective now for applying the digital courses, and they are even entitled with many options digitally and university wise, most significantly they look for an option to learn from their hometowns, he stated. Thus, he specified that universities have to focus on the psychological security needs of the students due to the corona situation as there is possible uncertainty of on and off lockdowns on a regular basis which obligates the university to provide suitable courses.

Whether future courses would be more of hybrid courses, he elongated, as per him there are several dimensions to hybrid courses such as; practical or technical solution to a course and use of the digital tools in combination digital with physical classes. Whereas, he thinks the latter aspect of hybrid notion is a challenging task and complicated structure opts for cultural transition, pedagogical techniques and teachers are the interim part of the transition. Therefore, he stated that hybrid courses are non-technical but rather teacher centric primarily as they have the ability to detect the issues while teaching. Moreover, the recipient mentioned about the other protocol of the study program which includes “group discussions” and “group work” are added factors in seeking for hybrid solutions.

From the research aspect, the candidate said though not “revolutionary change”, he outlined the uncertainties and possibilities in conducting the field research part which is unclear and there is potential for several techniques like using videos and censor technique. However, the way of collaboration is changing as the zoom tool made the communication and discussions convenient leading to less mobility, he also added the limitations of discussion through the zoom platform.
Later he explained that the limitations of digital communication are there but undeniably technical tools and advancements are happening, for instance, he stated, nowadays conferences “are focused not only on video experiences”. Further, he specified that “they try to commensurate tools for social gathering” which indulged “workshops for discussions”. He shared his experience of a virtual conference illustrating one of the technical feature, he said “where you go to a virtual world and your avatar, you can make it dance” with an element of social game “funny, weird stuff like that” which motivates people to attend virtual conferences in a way, as per him also it invokes informal working environment. Neutrally, he looked upon these invading technical features in digital communication as an opportunity to experiment and find out the area of discontent in order for advancement. As per him, the ideal digital platform is the balance of sophisticated frameworks such as; a conference place where the participants can do “social chatting and group discussions” and the “researchers mainly come and present their power points without showing their faces”, with a flexible approach in the area of knowledge sharing. And in a social context, he added that, “it is not an article, but a knowledge sharing digital platform”. Additionally, participants noticed that knowledge sharing became convenient, cost-effective and sustainable for the researcher’s as they set up research teams geographically and included no requirement to travel.

When enquired about the transformation in examination protocol, the recipient described the examination model applied during the pandemic, he stated that the digital examinations were conducted like before but the rooms were more spacious and for several other programs online based oral exams were applicable. He claimed that in general the examination is a system which measures the knowledge of a learner in a limited time frame of 3 to 4 hours. However, participants also claimed that the organization is going through the transition in the area of digital examination which is challenging as said, “trying to change one piece, it is connected to the whole bunch of structure”. He described, “How we changed from pen and paper to computer, it’s exactly the same way”, and as per him now the examination is seen as “agile”. Moreover, he adds another perspective that “removing the examination is one of the big pieces' ' which requires changing the overall education model.

He specified that the role of the IT department is to facilitate digital examination in a secured manner, such as the learners are unable to communicate and access information during their examination which is just similar to traditionally paper-based examination. He also informed about the precaution measures taken during virtual oral examinations in the pandemic, that they required the student's picture to ensure the participant is alone and not receiving any external help. However, he believed that future examination reforms would be based on “broader and practical tasks, which can be measured easily”, the IT department would be assigned to assist with the technical support to conduct the examinations effectively, during the whole year of study program.

The participant informed about the digital security from the IT perspective, he stated that every online zoom user in UiA are signed in through education server “Feide” which prohibits the intervention of unwanted external forces. Additionally, he mentioned that Zoom is operated through “Uni Net”, he meant one specific tool and IT department for the entire Norway, and they work with the universities to provide secured technical tools. He also added that they are the ones who are responsible for digital transformation”, and clarified that the zoom network is not connected to a US server which he indicated was the prior issue.

About the future local and global collaboration, interviewee highlighted a significant factor of cost-effectiveness and expressed his experiences of several conferences, wherein he noticed that the developing countries are dependent on the global north for their capacity development. For instance, he mentioned, Norway develops a project and then passes it over to developing countries like Africa, in which he indicated that funds, tools and knowledge are being provided by the global north to global south nations. Further he explained the growing mobile and internet infrastructure in developing countries like Tanzania are supportive in digital movements. In terms of developing tools, he said that countries in south America are benefitting from “the greatest Learning Management System, they are growing and open sources”. He also depicted the traditional and cultural collaboration in Norway and tools developments in Nordic countries

According to him, disabled individuals are vulnerable at this moment and he is hopeful in the future. However, he mentioned a tool in which the lectures would be transcribed into “sound and text”. Relatively, he described that as per the university reforms, it is mandatory to make available the lectures for learners suffering from hearing impairment, he further explained the complication, that for English language it is adaptable due to its uniformity but in case of Norwegian due to distinctive dialects it is not workable at this moment and therefore, done by the personnel. Moreover, he also pointed towards the possibilities of development, for instance, he stated, “how digital examinations are conducted at the own pace”, similarly the teaching activities can be improvised and he insisted “pedagogical and didactics” are the crucial step to implement these transformations.

Interviewee represented two perspectives, firstly he mentioned that “people do not usually thrive of experiencing other cultures”, it can be done after receiving a job. On the other hand, he also accepts that if a student gets the opportunity to travel to a different country for their studies they would prefer to travel even if the course is available online. He thinks that pandemic situations have made the people “like huge hunger to experience travel again”, On the other hand he speaks about the “economic crisis and cost effectively in every term” also accepts that “travelling is still a motivational factor” he stated. Lastly, he mentions the work culture is changing and as per him, it is highly possible due to flexible work patterns, for e.g. he mentioned that their PhD students travel to their home countries for 3 months, moreover, they can digitally continue he thinks its cost effective.

According to the respondent he thinks the pandemic made the digital transition faster and as per him, it is not a new normal, he said “because we haven’t reached yet”. Recipient replied with a “no and then yes” he explained that as a society, he thinks we don't need digitalization in a faster mode, although we need it and requires “mature” handling. For the jobs he claimed that in future digital proficiency is the key and not necessarily only availability of AI and IT related job opportunities, he added “but would be a great market”. At the end, he concluded that digital education was accessible to everyone and digital communication has its limitations. He doesn’t prefer a work place without social contact and favoured partial digital transformation in higher education.