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# Road works ahead: the journey of an innovative cross-campus hybrid learning space navigating higher education institutions' organizational setbacks

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The most recent UN publication on Sustainable Development Goals (SDGs), which covers issues related to socioeconomic, environmental, and technological development on a global scale towards 2030, has expanded its focus to include tertiary education and the role of Universities in contributing to societal development. SDG 4, particularly, calls for equal access to tertiary education from a lifelong perspective, and consequentially an increasing need for flexible education. It has therefore become pivotal for Higher Education Institutions to promote the implementation of both flexible study programs and related innovative learning environments to sustain learners' lifelong education and the development of critical skills in an increasingly digitalized world. Innovation, however, has a cost. In Higher Education, innovation must necessarily reconcile academic advantages with economic conveniences. In this paper, we look in retrospect and share our experiences from a major research project linked to creating and implementing an innovative hybrid learning space within the frame of a cross-campus and cross-institution master's degree based at two Norwegian universities. In the evaluation phase of the project, tension became apparent between the underlying pedagogical visions that sparked the enthusiasm for the project and the challenging reality of having to create, organize, and manage a complex cross-campus and cross-institution study program and build the learning space related to it. It seems that traditional university structures as a closed ecosystem made it difficult to anchor the development of the program in/within/between the organizations. The administration did not seem equipped to manage the uncertainty such an innovative project presented in the form of many new unforeseen, challenging, and unpredictable variables. In two related publications we have specifically discussed the results from the project by focusing on the experiences educators and students collectively reported about working and studying in the *ad hoc* learning environment developed for the master's program. We wish now to look back and explore the topic from an organizational perspective where the administration of the cross-campus and cross-institution project acts as a filter between the educators' pedagogical vision and the students' experiences. In this **exploratory case study,** we have opted for a phenomenological investigation and a qualitative approach to research design that is informed by constructivist grounded theory methods. We went back to the educators' and students' feedback and tried to understand not just what worked and what did not, but why. What contributed the most to the increasing tension between the initial pedagogical vision of the educators and the practical development of the project in reality? We believe that sharing the experiences harvested from our project along the road can be of help to other researchers and

stakeholders in confronting and finding solutions to the challenges that complex innovative projects might constitute for higher education institutions.

KEYWORDS

**cross-campus learning environments, cross-institution collaboration, higher education, cross-campus teaching and learning, future higher education**

## 1 Introduction

The most recent United Nations (UN) publication on Sustainable Development Goals (Global Sustainable Development Report, 2023; United Nations' Sustainable Development Goals, 2023), which covers issues related to socioeconomic, environmental, and technological development on a global scale towards 2030, has expanded its focus to include tertiary education and the role of Universities in contributing to societal development. SDG 4, particularly, calls for equal access to tertiary education from a lifelong perspective, and consequentially an increasing need for flexible education. In the past couple of years, a new awareness also has risen about the need to provide flexible study programs to guarantee continuity of education in times of crisis. Students' expectations of higher education are evolving with a direct focus on flexibility, inclusion, and personalization, the opportunities to acquire knowledge and skills transferable to their work life, and equality of access. For many students, particularly adult and vocational students, equality of access has become synonymous with flexible education and fully digitally-based education to overcome potential socio-economic barriers to participation (Pelletier et al., 2022; Penrod, 2023, p. 27). The European University Association (EUA) therefore has emphasized the necessity for Higher Education Institutions (HEIs) to adapt and expand traditional university teaching on campus to include hybrid and fully online study programs to realize the UN's SDGs by 2030. The policy document "Universities without walls" is a EUA manifesto envisioning the future of European universities as "innovation ecosystems" (EUA, 2021, p.9) and active contributors to environmental, technological, and social innovation processes to support Europe's open, pluralistic and democratic societies (EUA, 2021, p. 7). This ambitious vision is endorsed by the EU and implemented through international research and educational programs like Horizon Europe, 2021–2027 and Erasmus Plus 2021–2027.

Considering these international trends, and the acknowledgment of the limitations of human, financial, ecological, and socio-cultural resources, it has become apparent that the traditional university campus is a finite ecosystem that cannot be subjected to endless expansion (Ninnemann et al., 2020, pp.25–26). The traditional idea of the university campus as a conglomerate of buildings and spaces each with a specific function belongs to the way past generations intended teaching and learning and working academically. Even with the introduction of ICT in education, e-learning, and the promotion of virtual learning environments, university campuses are still claiming more space and more funding to build new and bigger, while physical, hybrid, and virtual spaces are still constructed separately from one another (p. 25): "Lecture halls and cellular offices still exist, although learning and working can take place independently of space and time through the integration of ICT. Lecture halls are not dedicated to new usage possibilities, although lectures can be recorded […]" (Ninnemann et al., 2020, 25). As Ninnemann acknowledges, building more physical infrastructures on campus without integrating them with virtual infrastructures and the reality of a campus in the cloud stretches financial and human resources to the limit and poses a serious environmental hindrance to achieving the UN's SDGs (p.25). Even if physical presence on campus will probably remain a default feature for most HEIs, the successful implementation of innovative hybrid (physical and virtual) or fully digital learning environments that can sustain learners' education and promote the development of critical skills to meet future work-life challenges and possible new crises has now become pivotal to ensure the survival of HEIs in an increasingly digitalized world (Bozkurt et al., 2020; Hodges et al., 2020; Shearer et al., 2020; Williamson et al., 2020b). At the EUA annual conference in April 2021, President Michael Murphy summarized his vision: "The key word is 'open'. No more ivory towers: blended campuses are here to stay, tradition combined with online" (Mitchell, 2021). The concept of openness also includes building and crossing cultural, transnational, and trans-sectorial bridges (Murphy and Crowfoot, 2021, p.5). In this envisioned open academic landscape, cross-campus, and cross-institution cooperations are considered pivotal in the development of future universities. Virtual campuses, which are holistically developed along the already existing physical ones, will guarantee an innovative, ubiquitous university that can accommodate the different needs of a diverse student body and allow for flexible and equitable education (Murphy and Crowfoot, 2021, p.6-7).

Innovation, however, has a cost. In Higher Education, innovation must necessarily reconcile academic advantages with economic conveniences. Considerable economic and political pressures in the aftermath of the pandemic and the following economic crisis and cuts in funding are forcing HEIs to rethink how to meet the academic and social needs of future students (Leadership and Organisation for Teaching and Learning at European Universities, 2022; Coburn and Derby-Talbot, 2023). This new generation of students is more diverse. Students are now older and often must balance education with work and family and have vastly different needs from first-time traditional students in terms of cost for the institution, access possibilities, and workforce readiness (Alexander et al., 2019). As HEIs continue to be a primus motor for socio-economic mobility toward 2030, as envisioned by the UN, equal access to lifelong learning for all types of students becomes imperative (Castro, 2019; European Commission, 2021). To deliver and sustain quality hybrid and online higher education into the future, new investments in infrastructure, technology, and competent staff are then required

(Castro, 2019; European Commission, 2021). Organizational practices related to "mainstreaming" hybrid/remote learning modes is arguably one of the most complex and challenging predicaments for institutions to undertake at this moment (Pelletier et al., 2022, pp.26–28), while universities are struggling against a backdrop of increasing economic, environmental, social, and political changes (Coburn and Derby-Talbot, 2023). A considerable amount of organizational effort and administrative support is necessary when considering the implementation of innovative projects from a cross-campus and cross-institutional perspective. The "openness" of the future academic landscape is not yet secured.

In this paper, we look in retrospect and share our experiences from a major research project linked to creating and implementing an innovative hybrid learning space within the frame of a cross-campus and cross-institution master's degree. This is the third of a series of articles from the project. The scope of our research is to harness experiences and new knowledge that can both inform and inspire similar projects and offer useful information for the development and implementation of cross-campus and cross-institution study programs.

In this particular case, the master's program in Music, Communication and Technology (MCT) started as a collaboration between the Norwegian University of Science and Technology (NTNU) and the University of Oslo (UiO). The program was co-located at both campuses and entailed the management and refinement of *one shared hybrid*, physical and virtual, learning space for physical-virtual interaction across the web called the Portal. In the Portal students and teachers from both universities were meant to share physical and digital resources to collaborate and explore educational, methodological, and technological solutions together (Støckert et al., 2019, 2020).

In our previous articles (Nykvist et al., 2021, De Caro-Barek et al., 2023), these authors have discussed the results from the project in depth by focusing on the experiences educators and students collectively reported on working and studying in the peculiar learning environment of the Portal. We wish now to look back and explore the topic from an organizational perspective where the administration of the cross-campus and cross-institution project acts as a filter between the initial pedagogical vision and the educators' and students' experiences. We want to go back to the educators' and students' feedback and try to understand not just what worked and what did not, but *why*. What contributed the most to the increasing tension between the initial pedagogical vision and the practical development of the project in reality? From a vision of creating a sustainable and innovative cross-campus and cross-institution master's program, sharing human and technical resources, to NTNU's withdrawal from the program in 2021, resulting in a revised master's program managed and run alone by the University of Oslo.

**In this paper, we want to explore whether and how organizational and administrative aspects affected students' and staff's working situations.**

***What organizational elements seemed to promote and/or hinder teaching and learning for students and educators in a cross-campus and cross-institution situation?***

After an initial review of the literature and some terminology clarifications, we will present a brief section illustrating the background for the project and the methodology employed. Results will then be set forth followed by a discussion and a conclusion section where we offer some suggestions for a possible way forward.

## 2 Literature review and terminology clarifications

The evolution of the university as an institution has been a journey where form and function have adapted to the changing times. From its origins as secluded castles, often described as 'Ivory Towers' (Behrent and Steven, 2022), to its transformation into more accessible brick-and-mortar institutions, the university has continually evolved. Today, we are witnessing a shift towards a vision of a university without walls (Murphy and Crowfoot, 2021). This transformation is not without its challenges. The European university's history dates back to the Middle Ages when the first universities started developing many features that are still prevalent today - a name with a motto and a poignant moral and educational message, a central location, autonomous masters, students, a system of lectures, examinations, and degrees, and even an administrative structure with its faculties. As Kerr (2001) remarks in his classic *The Usage of the University*, universities were often detached from contemporary events, standing like castles without windows. This introverted nature is still prevalent in many institutions today. Despite external pressures and reforms, many universities have managed to maintain their functions throughout history by maintaining internal continuity. They have managed to shield themselves from external public, social, political, and economic pressures while interacting with those factors at a distance (Clark, 2003). However, this persistence of Higher Education Institutions (HEIs) in desiring to exist as they always have done, clinging on to the vestiges of the past, has by many been addressed as *organizational inertia* (Clark, 2003), and it has been thoroughly criticized. The Organization for Economic Co-operation and Development (OECD, 2020) and the Council of Europe (COE, 2022a) claim that European universities are not responding quickly enough to strategies and reforms needed to handle a complex and fast-changing world. Reformers argue for a vision where the university is dynamic and adaptive toward its customers and prioritizes innovation, entrepreneurship, and market orientation (Olsen and Maassen, 2007). This vision is partly supported by governmental approaches allowing universities a more autonomous role and being more exposed to market mechanisms. This has led to the transformation of universities from social institutions into industries (Maassen and Stensaker, 2011; Huisman and Lyby, 2020). However, there are also external factors slowing down higher education's ability to cope with fast changes and market dynamics as well. Particularly, higher costs (tuition) and building/maintenance costs, power issues, and lower enrolments are some other challenges faced by universities today. At the same time, in recent years traumatized by pandemic health threats, the use of digital technologies in Higher Education to guarantee continuity of education has escalated. Consequently, new professional roles have made entrance into traditional university organizational structures. New competitors are offering just-in-time education, so-called micro-credits, and more flexible and tailored educational solutions. As Santos et al. (2023) have written in a compelling piece on the

new hybridity of universities, third-space professionals such as educational developers and Information and Communications Technology (ICT) staff have become more visible and salient within universities. Given their role as 'digital experts', these professionals are increasingly significant for academics who require support to design and deliver teaching in digital environments, as was the case during the COVID-19 pandemic. Pinheiro et al. (2023), for instance, have newly investigated the impact of digital transformations on both established and emerging professional roles in the aftermath of the dynamics initiated by the pandemic, asking to what extent the digital transformation of higher education is affecting traditional academic roles and authority relations within public universities. The authors hypothesize that these developments can lead to power shifts where technically skilled staff have a significant say in defining and assessing student learning, to the detriment of educational experts and digital pedagogical approaches (Pinheiro et al., 2023).

Innovation within Higher Education (HE), as a key driver of economic growth and societal progress (Bleiklie and Michelsen, 2013; Williamson et al., 2020a), can encounter significant obstacles, particularly in the New Management era that has affected university governance in Europe since the last turn of the century. Among these impediments are an excessive emphasis HEIs might develop on prestige, an over-reliance on specialization, and a lack of exposure to transnational collaborative methods beyond conventional committee work and meetings. The undue focus on prestige can stifle innovation by prioritizing reputation over novel ideas and risk-taking. This can lead to a conservative approach to research and development, hindering the exploration of groundbreaking concepts. Similarly, an over-fixation on specialization can limit the scope of innovation. While expertise in a specific field is crucial, excessive specialization can restrict interdisciplinary collaboration and holistic problem-solving. This siloed approach may prevent the cross-pollination of ideas necessary for breakthrough innovations. Lastly, traditional methods of collective work, such as committee meetings and hierarchical organizational structures, may not be conducive to fostering innovation. These structures often promote conformity and discourage dissenting opinions. Addressing these headwinds to innovation requires a shift in organizational culture and practices. Emphasizing the value of novel ideas over prestige, promoting interdisciplinary collaboration over excessive specialization, and exploring alternative methods of collective work can help foster an environment conducive to innovation (García-Morales et al., 2021).

While there undoubtedly are considerable differences in university governance in Europe and around the world, in Scandinavia, the landscape of HEIs is quite homogenous. Universities present similar governance systems being almost entirely public and supported by governmental financial investments (Bleiklie and Michelsen, 2019). In this respect, Scandinavian HEIs mirror the Nordic model of social democratic welfare orientation that the Nordic countries are well-known for (p. 198) and can fall "under the common label of a Scandinavian Model of HE" (p. 205). Also, even if Norway is not a member of the European Union, all universities in Scandinavia have implemented policy resolutions resulting from the Bologna process (Zahavi and Friedman, 2019). The Council of Europe policy document «Council Recommendation of 5th April 2022 on building bridges for effective European higher education cooperation» (Council Recommendation (COE, 2022a,b) represents a call for action for European and Scandinavian universities alike to achieve the goals of seamless and ambitious transnational cooperation expressed by the European Education Area by 2025. It highlights the necessity for HEIs to develop and deliver solutions to enable the sharing of «human, digital and physical resources, and services, to operate virtual inter-university campuses and interoperable platforms for joint digital or blended activities» (C160, 2022, p 4). These ambitious formulations picture a visionary future of flexible and inclusive mobility for learners, academics, researchers, and staff where joint degrees and interdisciplinary modules are the norm, and the Bologna Process instruments are actively implemented at national, regional, and institutional levels in all universities in Europe (Council Recommendation (2018/C 444/01); Council of the European Union, 2019). International research programs such as Horizon, student exchange programs such as Erasmus+, the European student card initiative, the promotion of mutual automatic recognition of credits to facilitate student mobility, and the implementation and recognition of micro-credentials across institutions, businesses, sectors, and borders for lifelong learning and employability are examples of named instruments COE (2022b, pp. 18–20). As clearly expressed in this recommendation, it is not possible to concretize the CoE's goals of transnational and inter-university cooperation without actively implementing digital hybrid and blended teaching and learning activities.

In the international relevant literature, both in Europe and trans-continentally, the terms *hybrid learning*, and *blended learning* are often used interchangeably to describe both synchronous and asynchronous learning modes and learning spaces with students and/or educators located in different places, *in situ* and/or online (Goodyear, 2020; Raes et al., 2020; Saichaie, 2020; Bülow, 2022; Eyal and Gil, 2022). Terminology in this research field is yet not settled as novel publications, often from the field of computer science in education, often put forth new ways of employing already-known terms. To complicate the matter, the internationalization of faculty cooperation and study programs across national borders has put the terms *cross-campus and cross-institution teaching and learning* in the spotlight. In a recent review, Mavroudi and Gynnild (2021) for example refer to cross-campus teaching or multi-campus teaching as a form of hybrid education where onsite and remote students attend the same classes either from campus or their homes. In this paper, to avoid any confusion and to strengthen a common understanding of the concept at a European level, we will refer to the definition of blended learning given by the Council of Europe: «Blended learning is the term used in formal education and training to describe when a school, educator or student takes more than one approach to the learning process. It may combine learning at school and in other environments, as well as using different digital and non-digital learning tools» (COE, 2022b). We will then employ the term "hybrid" to refer more specifically to complex, multifunctional learning spaces and arenas of "merging interactions" (Eyal and Gil, 2022) where students and educators have access to both digital and material artifacts (Goodyear, 2020), digital and non-digital learning tools and can engage in both synchronous and asynchronous learning activities. We will finally refer to either cross-campus or cross-institution teaching and learning to describe the organizational model within which the study program and learning activities are framed. In this paper, cross-campus describes study programs and learning activities where students and educators belong to the same

university but are located at different campuses and can attend both *in situ* and/or remotely. Cross-institution describes joint study programs where different universities collaborate and organize teaching and learning activities where students and educators belong to different universities, are located at different campuses, and can attend both *in situ* and/or remotely[1].

Irrespective of the choice of terms employed, the need for designing and implementing hybrid learning spaces for blended learning activities to reach the European Educational Area's lofty goals of flexible and equitable education for all by 2030 puts a stressful economic strain on higher education institutions. Universities in Europe struggle against a backdrop of increasing economic, environmental, and social changes. The progressive depletion of financial support for universities due to the post-pandemic economic crisis and the ongoing war situation in Ukraine, make national and international inter-cooperation, thus cross-institution and cross-campus initiatives, a difficult and costly affair nowadays (Chankseliani and McCowan, 2021). Universities regardless of the location and the governance model followed, can be described as "complex adaptive systems" (Bryant et al., 2020; Renfrew, 2020). While having established hierarchies, universities also are characterized by self-sufficient ecosystems where decentralized units, as well as individuals "operate in a federated manner with a high degree of autonomy" (Bryant et al., 2020, pp. 5–6). Cross-institution and cross-campus collaborations can then pose pedagogical, technical, support, and administrative challenges to university organizations because of the institutional "diffusion of authority and decision-making responsibility" in those ecosystems (pp. 1–6).

## 2.1 Cross-campus and cross-institution practices

Higher education institutions (HEIs) are increasingly operating in multiple locations or campuses, often across different regions or countries, to expand their reach, diversify their offerings, and enhance their impact. However, this cross-campus/institution (or multicampus) perspective poses significant challenges for the governance models of HEIs, which are the ways in which they structure their decision-making processes, roles, responsibilities, and relationships among different actors and stakeholders (Burns and Köster, 2016). Cross-campus/institution teaching and learning involves the delivery of educational programs across multiple locations by employing digital technologies and online tools to support communication and collaboration. This phenomenon poses various challenges and opportunities for higher education institutions, especially in the Nordic European context, where there is a strong tradition of social equity, education democratization, and public funding. One of the challenges is how to balance centralization and decentralization in the governance and management of cross-campus/institution programs. This involves finding an optimal level of coordination and autonomy for each campus, as well as defining frameworks and clear roles and responsibilities for the different actors involved, such as the board, the rector, the management team, the faculties, and the departments (Bahmani and Hjelsvold, 2020). Another challenge is how to design and implement pedagogical approaches that are suitable for multicampus teaching and learning. This involves selecting appropriate methods, tools, and resources that can enhance the quality and innovation of teaching and learning across different locations, as well as fostering a culture of sharing and learning from each other. In a previous parallel publication (Nykvist et al., 2021), these authors showed that this challenge requires creating flexible learning spaces that can be used with different teaching methods, such as student-active learning and session-based teaching in both synchronous and asynchronous teaching modes. A third challenge is how to cope with cultural diversity and relations dynamics in cross-campus/institution teaching and learning environments. This involves addressing the different needs and contexts of the students and staff across the campuses, as well as dealing with the potential issues or conflicts that may arise from cultural, linguistic, or disciplinary differences (Christensen and Nilsen, 2021). On top of these above-mentioned challenges, there are also strong cultural barriers to the innovation of governance models within HEIs.

Traditionally, centralized coordination and integration are important for ensuring coherence, alignment, and efficiency in the HEIs' strategy, policies, and operations. However, too much centralization can stifle innovation, creativity, and responsiveness to local needs and opportunities. Autonomy and diversity are for instance paramount to fostering a sense of ownership, identity, and empowerment among the different campuses (Bahmani and Hjelsvold, 2020). Too much decentralization, on the other hand, can also lead to fragmentation, duplication, and inconsistency in the HEIs' performance and quality. These internal tensions are amplified by external factors as well, and the challenge lies in how to manage the complex dynamics of the external environment. The external environment refers to the factors that affect the HEIs' activities and outcomes, such as political, economic, social, cultural, legal, and technological changes. The external environment can vary significantly across different locations or campuses, requiring different responses and adaptations from the HEIs. Moreover, the external environment can change rapidly and unpredictably, posing new opportunities or threats. Therefore, HEIs need to develop governance models that are flexible and adaptive enough to cope with the diversity and uncertainty of the external environment (Renfrew, 2020). Another important external factor entails the engagement and involvement of various stakeholders in the governance process. Stakeholders are the individuals or groups that have an interest or influence on the HEIs' activities and outcomes, such as students, staff, faculty, alumni, partners, funders, regulators, and society at large. Stakeholders can have different expectations, preferences, and perspectives on the HEIs' goals, strategies, and performance. In a newly published study series on the Nordic Educational Model (NEM), Tröhler et al. (2022) puts these internal tensions and external factors that contribute to shaping the reality of local universities in a historical

1 To clarify, it must be said that the terms cross-campus and multicampus teaching and learning are often used interchangeably. However, it seems that cross-campus teaching and learning is more commonly used, particularly in Norway, to describe a form of hybrid education where the on-site students are distributed on different campuses, often within the same country or region (Mavroudi and Gynnild, 2021). Multicampus teaching and learning, on the other hand, is more often used in international literature to describe a situation where an organization operates on multiple locations or campuses, often across different countries or regions (Lourenço, 2018; Leask, 2020). Therefore, the choice of term may depend on the scope and scale of the teaching and learning activities involved.

perspective and ponders the ability of NEM to cope with these modern challenges posed by globalization. The question asked is whether the Nordic educational systems and educational research can deal with the current challenges. In order to survive, HEIs need to develop governance models that are inclusive and participatory enough to ensure stakeholder representation, consultation, and feedback (Geschwind et al., 2019).

## 2.2 NTNU organization

In Norway, most universities are public with the Norwegian University of Science and Technology (NTNU) being the largest public university in the country. On 19 June 2015, the Government in the Council of State decided to merge the University of Science and Technology in Trondheim, Sør-Trøndelag University College, Ålesund University College, and Gjøvik University College into *one* university named The Norwegian University of Science and Technology. This gave the final go-ahead for the NTNU merger in 2016 (NTNU, 2015). After the merging process, NTNU has now three campuses in Trondheim, Gjøvik, and Ålesund, and a satellite "campus office" in Oslo; it employs about 8,000 staff and educates about 43,000 students.

Besides its strong focus on science and technology, NTNU also offers programs in other research fields such as humanities, social sciences, arts, and medicine. The university is governed by a board consisting of 11 members, of which five are externally elected by the Ministry of Education and Research, and six are internally elected by the staff and students. The board is chaired by an external member and appoints the rector as the chief executive officer of the university. The rector is responsible for the academic and administrative activities of NTNU and reports to the board. The rector leads a management team composed of three pro-rectors, one university director, and two vice-rectors representing the campuses in Gjøvik and Ålesund. The management team is responsible for developing and implementing the strategies, objectives, and expected results of NTNU, as well as overseeing the quality assurance and performance evaluation processes. The university is organized into eight faculties, each headed by a dean appointed by the rector. The faculties are further divided into departments, each headed by a head of department elected by the faculty board. The departments are responsible for conducting teaching and research activities within their disciplines, as well as managing their human and financial resources. NTNU has a collegial governance model that emphasizes academic freedom, autonomy, and participation. However, it also faces challenges such as increasing competition, complexity, and accountability in the higher education sector. Therefore, it has adopted various governance mechanisms to enhance its performance, efficiency, and transparency, such as professional management, leadership structures, performance indicators, and external stakeholder involvement (NTNU, 2021). These mechanisms are influenced by both global trends and national contexts but also reflect the values and identities of NTNU as a higher education institution.

NTNU's management of its three campuses has been posing a challenge in adapting teaching and learning to the different needs and contexts of the students and staff across the campuses. NTNU has adopted various strategies and measures to cope with this challenge, however with various degrees of success, such as (NTNU, 2018a):

Developing a common vision and identity for NTNU as a whole, while respecting the diversity and autonomy of each campus.

Establishing a governance model that balances centralization and decentralization, with clear roles and responsibilities for the board, the rector, the management team, the faculties, and the departments.

Creating learning spaces that are designed to be used flexibly with different teaching methods, such as student-active learning, multi-campus teaching, and session-based teaching. These learning spaces are equipped with digital infrastructure, such as Zoom Rooms, that enable synchronous and asynchronous communication and collaboration across the campuses.

Providing teaching and learning support for teachers and students through various channels, such as online resources, courses, events, forums, and help desks. These support services aim to enhance the quality and innovation of teaching and learning at NTNU, as well as to foster a culture of sharing and learning from each other.

Implementing holistic teaching and learning support in alignment with NTNU's goals, strategies, and guidelines, and that delivers services that are experienced as integrated by the target groups.

However, recent years' increasing cuts in governmental funding and subsequent re-organization and effectivization measures within the university's governance model have given rise to critical voices that question the rigid structures NTNU seems to be trapped in. In a series of statements, professor and safety representative Brandtsegg (2023) has written about the individual employee's relationship with the university. Here the expression "The black box" is borrowed from the field of artificial intelligence to describe decision-making processes that preclude insights into how decisions actually are made at the university. NTNU formulates collective business strategies that inform all employees about the general goals and help them move in the same direction. It creates expectations. The institution's expectations of the employees, but also the employees' expectations of the institution. Expectations that the institution will facilitate the achievement of the strategic objectives it has posed for itself. The reality, however, presents a different outlook where a rigid level structure *"i linje," down the line*, from the Rectorate at level 1 to the Departments at level 3 and, in some cases, Sections and Units at level 4 cuts out direct contact between the innovative ideas educators and researchers might have and their realization. Innovative projects in research, teaching, and learning meet a long way ahead from the first developmental stages to possible implementation, filtered by the different administration layers. Administrative employees at each level in the organization seem more often to express loyalty upward the system instead of listening to the needs of the level below. This rigidity perpetuates and fossilizes organizational practices instead of promoting innovation. As Brandtsegg claims, it is essential that the administration at the faculty and rector level uses its energy to get the academic body the resources it needs, rather than starve academic environments that try to meet NTNU's strategic goals with closed walls (Amble et al., 2020). Without transparency, cooperation, and decision flexibility across the administration levels, conflicts emerge that put the employees' loyalty and trust in the organization they work for at risk (Amble et al., 2020). Amundsen and Kongsvik (2016) name these conflict dynamics as "change and innovation cynicism," the development of a state of apathy or demotivation - which occurs when employees' voices seem not to be heard and structures at work are perceived as meaningless or deterrent to the academic work performance. Conversely, when organizational structures encourage employees'

participation in changing processes and their autonomy, employees' trust manifests itself in higher creativity and work performance (Bozkurt et al., 2020; Amundsen, 2021).

In the following, we outline the organizational synergies that when channelized in the right direction from different levels in the organization, can spark creative professional innovative cross-campus and cross-institution collaborations.

## 3 Context: the master's program in music, communication and technology (MCT) and the SALTO project

The master's program in Music, Communication, and Technology (MCT) started as a collaboration between the Norwegian University of Science and Technology (NTNU) and the University of Oslo (UiO). The program was a development project within the University's Teaching Excellence initiative and got public funding for the period 2017–2021 (NTNU, 2018b). NTNU Teaching Excellence is an integrated and wide-ranging initiative aimed at helping NTNU achieve its strategic goals of providing education characterized by quality at a high international level. The initiative consists of a portfolio of development measures, which together are intended to strengthen teaching skills by developing innovative teaching, learning, and assessment practices. The measures aim to improve students' learning outcomes.

The MCT master's program was co-located at both campuses in Trondheim and Oslo but in addition, it entailed the management and refinement of one *hybrid* (physical and virtual) learning space for physical-virtual interaction across the web called the Portal to share resources in terms of staff, rooms (labs), recording studios, and software. In the Portal students and teachers were meant to collaborate and explore educational, methodological, and technological solutions together (Støckert et al., 2019, 2020). The master's program was also "the living lab and testbed" for the related research program SALTO (2017–2021). SALTO has represented the successful concretization of a pedagogical vision that values collaboration and knowledge-sharing among students and educators and goes beyond educational institutions' classical physical barriers. The scope of the research in SALTO entailed the development, investigation, and evaluation of cross-campus/institution hybrid learning spaces and innovative teaching and learning solutions.

Cross-campus and cross-institution collaborations have become a highly relevant issue in Norway given a structural reform in 2016 where different HEIs in the country were merged into larger entities. SALTO aimed to develop through the MCT master's program effective pedagogy with synchronous student-centered learning activities at both campuses, with particular emphasis on interaction, resource sharing, and communication. Established strategies for student-active learning were adapted in a cross-campus context while being anchored within Radcliffe's Pedagogy-Space-Technology (PST) framework (Radcliffe et al., 2008) for the sustainable design of physical and virtual learning spaces. Key pedagogical approaches and relevant activities at the base of the SALTO project and MCT master's program have been:

Collaborative learning: Project work, problem-based learning, and development projects in groups across campus.

Flipped classroom: Development of digital learning materials and common methods for in-depth study, discussion, and application of subject matter across campus.

MCT was designed as a different master's program. Music technology was at its core, but the scope was larger. Students were educated as *technological humanists*, with technical, reflective, and aesthetic skills. The core is the belief that the solutions to tomorrow's societal challenges need to be based on the intimate link between technological competence (musical) aesthetical sensibility, humanistic reflection, and creative adjustment and adaptive skills. The choice of a master's program in Music, Communication, and Technology lies in the assumption that if pedagogical and technological innovation can overcome spatial challenges and facilitate communication and collaboration through flexible solutions, resulting in productive crossings between musical performance and technological innovation, then the same innovative approaches can successfully be employed in other subject areas (De Caro-Barek et al., 2023).

## 4 Theoretical perspective and methodology

In two previous related publications (Nykvist et al., 2021; De Caro-Barek et al., 2023), these authors have offered a comprehensive account of the epistemology, methodology, and methods employed in the research project. In this paper, we will briefly summarize our research position and rather refer to our previous articles and the extra material section accompanying this paper for further information. Being our focus on the description of phenomena from the perspective of the participants, that is students and educators from the master's program in Music, Communication, and Technology, in this **exploratory case study** we have opted for **a phenomenological investigation** (Creswell and Poth, 2018) and a qualitative approach to research design that is informed by **constructivist grounded theory methods** (Charmaz and Thornberg, 2020). By including the **constant comparative method** (CCMA) to structure and guide data analysis (Postholm, 2019), the research group managed to gather richer data and achieve a deeper analysis of the phenomena investigated than by a pure phenomenological or a pure grounded theory research approach (De Caro-Barek et al., 2023).

### 4.1 Our participants

#### 4.1.1 The educators

Six educators ($N = 6$) were involved in the design of the learning experiences during the first 2 years of the program. All educators were males and, except for one educator at the university of Oslo, Norwegian. However, the teaching language of the study program was English. Interviews with the educators took place in two stages. In the first stage, a focus group semi-structured interview was conducted with three educators ($n = 3$), two of them being the founding members of the study program. The third educator in this group was chosen based on their role in providing practical, pedagogical, and technical expertise to the teaching team. This first interview resulted in the identification of recurrent ***themes*** that were then used as a starting

point for the second round of interviews. Drawing on the analysis of the case study data, the following seven themes emerged during the first interview with the educators in MCT: *Trust, the human factor, sharing resources, building ownership, leadership support, flexibility and equality,* and *focus on pedagogy first*.

In the second stage of interviews, an additional three educators ($n=3$) participated in individual semi-structured interviews. These educators were new to the MCT program in its second year and were consequently asked questions relating to the themes that had emerged from the initial data collection in the first stage.

### 4.1.2 The students

Students enrolled in the MCT-program came from all over the world, so our project participants presented good variation in language and cultural backgrounds with a larger number of international students. The participants we have chosen to interview for this study were those ($N=9$) who had been students at MCT for more than 1 year and had experienced the program from its very beginning, and both before and during the pandemic. We identified these students as the ones more apt to offer us a greater amplitude of reflections on their experiences. Our nine informants consisted of both Norwegian and international students, two females ($n=2$) and seven males ($n=7$)[2].

## 4.2 Methods

Data was gathered via semi-structured interviews. An interview guide was used where questions were designed to make the informants talk freely about their experiences. The interviews were conducted in both Norwegian and English, according to the participants' preferences. Questions were adapted to either focus on the student role or the educator's responsibilities but in both cases, **participants were asked about which organizational elements or factors they believed contributed the most to the success of the program, and conversely, what elements had been a hinder and created difficulties or tensions.** *They were asked about how the organization and administrative support worked in a cross-campus, cross-institutional perspective. What did students and teachers had to say about the organization and the institutional process? How did this affect the students and staff's working situation? What promoted their teaching and learning work, and what hindered it? How did this affect their learning environment?*

The interview guide is included in the extra materials section.

Due to the pandemic, the interviews were conducted online via Zoom, audio recorded through a Dictaphone app called *Nettskjema*[3] developed at the university of Oslo, and then manually transcribed. Thereafter a phenomenological analysis (Moustakas, 1994) was conducted to identify blocks of information relevant to answering our research questions. The blocks of information were then structured and organized through a process of **open coding** (Corbin and Strauss, 2015) with reference to the **constant comparative method** (Corbin and Strauss, 2015). This process led to the definition of **categories** named on the basis of the type of information within each category. Each transcribed interview was categorized, and each category was then condensed and refined. The condensed texts for each category were subsequently assembled across all interviews and condensed once again. The result of this condensation process in stages was a final text that comprehensively described the informants' experiences and beliefs across interviews for each of the identified categories. Validity in the process was secured by triangulation between all five researchers in the research group and by the constant comparison of data throughout the analysis phases. In the two parallel articles the research group published about the educators' and students' experiences, it was also clarified that internal validity occurred between each of the researchers and was confirmed by an observer (Nykvist et al., 2021; De Caro-Barek et al., 2023). The role of the observer was to conduct a confirmability audit to assess how well the findings were supported by the data collected and then resolve any differences with the researchers (Nykvist et al., 2021).

# 5 Results

The results presented in this paper look back at what educators and students reported on their experiences with the MCT master's program and reflect the three stages of the program's organization from the planning phase, through the implementation phase, and finally, to the current evaluation phase. The educators' experiences are obviously at the core of the planning phase, while both educators' and students' comments define the results for the implementation and evaluation phases. For each phase, a comprehensive text based on the final condensation from data analysis for both educators and students is presented. Each phase covers and explains relevant aspects brought upon by the participants and illustrates the organizational journey of the study program, from the educators' pedagogical vision to the concretization and evaluation of the program by educators, students, and local leadership.

Table 1 below summarizes the results by highlighting which supporting and hindering factors, at both the organizational and pedagogical levels, affected the development of the study program in each organizational phase. In addition, a keyword for each phase is chosen based on data categorization to express the most prominent aspect discussed by the study participants.

The paragraphs in the running text under Table 1 offer an extended explanation of the results presented.

## 5.1 The planning phase—trust

One of the founding members of the program explained the initial vision for the cooperation model that underpinned the pedagogical approach of the study program:

"There has been an academic group with representatives from each university. In addition, we have held workshops with both professional, technical, and administrative staff. The content of the program is largely based on the research carried out at the two universities. Here in Oslo, we work a lot with movement, sound and machine learning, while NTNU does a lot of sound processing and

2 For a clarification of the methodology, methods and on the gender gap of the study participants, please refer to De Caro-Barek et al., 2023.

3 https://www.uio.no/english/services/it/adm-services/nettskjema/help/nettskjema-dictaphone.html

TABLE 1 Results summary.

| | Supporting factors | Hindering factors |
|---|---|---|
| **Planning** | **Keyword: trust** | |
| Organizational level | Both bottom-up and top-down process<br>Hands-on, Cooperation model | Project acceptance at the Rector staff level (the head of academic and administrative activities at NTNU) but not anchored downwards to the faculty and department levels<br>Different LMS patforms<br>Different Administrations<br>Different economic and personal resources and space availability<br>Communication issues |
| Pedagogical level | Shared pedagogical vision<br>*Experts in Team* pedagogy<br>Radcliff's PST framework as a shared inspiration for the creation of cross-campus symmetrical hybrid learning arenas | Communication issues |
| | | |
| **Implementing** | **Keyword: leadership support** | |
| Organizational level | Cross-campus cooperation at all levels of the two organizations: between students and educators, program leaders, faculty administrations, IT departments, and organization leaderships | Top-down decisions > Lack of leadership commitment downwards the organization > Friction<br>Difficulty in freeing economical resources and supporting staff |
| Pedagogical level | Sharing resources and technical solutions to guarantee flexibility and equality in teaching and learning.<br>Students' involvement throughout the process | Students' diverse subject and academic backgrounds.<br>Cross-campus educators' struggling with more and unrecognized workload |
| | | |
| **Evaluating** | **Keyword: flexibility and equality** | |
| Organizational level | *Ad hoc*, flexible, hybrid (physical and digital) learning spaces and arenas adapted to students' needs<br>Symmetry of learning spaces | Poor management and underestimated costs.<br>Leadership concerns for involved costs. |
| Pedagogical level | Shared learning materials<br>Educators present *in loco* at each physical location.<br>Transparent assessment criteria shared with the students | Leadership unwilling to pay for extra workload or extra staff > Discontinuity of teaching staff > extra workload on remaining educators |

practice. We have put together the expertise, and so communication is the supporting element."

"Experts in teams" pedagogy[4] (EiT) was the starting point for the development of teaching and learning activities at MCT. The core of EiT pedagogy is to make people collaborate across professions and professional backgrounds, so MCT students came from different educational, professional, and cultural background. Students were put together in cross-campus groups to collaborate with each other in solving theoretical and practical tasks. Supported by immersive activities, discussions and short, intensive sessions, teachers had an ambition to move away from the traditional "lecture" teaching paradigm focused on transferring knowledge to involve and engage the students in the teaching and learning process, developing skills through authentic problem solving.

To create such an innovative learning environment, practical organizational aspects, technical issues and bureaucratic hiccups needed to be discussed and solved.

**On the pedagogical level**, educators carefully tried to safeguard Symmetry in teaching and learning and develop their spatial, social, and didactic competence to teach in an innovative hybrid learning space. They created a mirrored physical learning environment in the Portal that could be very similar at each campus and had local teachers on both campuses facilitating students' work. Educators also have to delegate tasks and decide who among them would be responsible for each course topic, who would create and publish resources cross-campus, and who would teach locally. A challenge was the hourly weighting of educators' work being different at each university thus creating an unfair distribution of resources.

**On the organizational level**, a great deal of preliminary administration issues needed to be sorted out. First of all, communication issues and cultural differences between the two university partners. Both administrations had to cooperate, so student advisors and the center for international students at both universities were consulted about the available possibilities for taking joint subjects

4 Experts in Teamwork (EiT) is a master's degree course in which students develop their interdisciplinary teamwork skills. The course is compulsory for all students in master's programmes and programmes of professional study at NTNU.

at both universities. Then more practical aspects and challenges were dealt with specifically concerning the set-up of the physical and digital learning environment at each campus, such as different IT-administration rules at each university, different levels of economic resources available, different space availability, and adequate rooms equipment, and different learning management systems. Each physical campus also had specific spatial characteristics, so much time was spent trying to identify the best "*ad hoc*" solutions to connect the physical and digital learning environments, optimizing sound and image solutions, and overcoming technical challenges.

Educators and students alike underlined the importance of **Trust** as a key element in promoting fruitful collaborations and to establish a common pedagogical working platform.

To support and develop Trust, three initiatives were highlighted:

- Creating an informal arena for social contact or informal social activities.
- Laying the foundation for a learning culture based on collaboration among and between educators and students, student initiative (student as an independent learner), and teacher facilitation.
- Sharing a common understanding of how to work together and interact. The importance of informal interaction with the students was highlighted to create a social–emotional learning environment based on trust.

## 5.2 The implementation phase—leadership support

As introduced in the previous section, there were different challenges related to the cross-campus cross-institution setup for the study program: Different administration systems, different learning management systems, and information and communication channels.

**On the pedagogical level**, the students' diverse subject and academic backgrounds led to challenges concerning the need for *ad hoc* curriculum development. Teachers needed to adapt and revise both the content of the curriculum and the teaching methods. In addition, the hybrid learning spaces had to be built with the help of the students. After the first half year into the program, it became clear that to guarantee equality in the teaching and learning experience, at least an educator had to be present physically at each location to facilitate students' learning activities. Extra resources were then hired at the start-up. Unfortunately, the progressive lack of leader commitment in the organizations led to a lack of follow-up and support that caused troubles for the further development of the program. Resources were cut back and with diminishing IT and technical support, teachers had to do all the work themselves. They did not have the time to collaborate, plan, and discuss pedagogical issues with colleagues. Organizing teaching cross-campus was demanding, it required extra working hours to create digital pedagogical resources that could be shared. However, educators' extra workload was neither recognized financially nor symbolically (f.ex. in the form of merit points). The situation was worsened by the fact that several teachers left and new came into the program without having the originally shared understanding of pedagogical practices (challenging the traditional teacher role) and the same spatial, social, and didactic competence. Continuity in the teaching staff is paramount to further development and the change of personnel required even more extra work from the existing staff. Understandably, this affected the learning experience of the students. Even if it was made clear from the beginning that student-centered learning forms and active student cooperation were at the core of the curriculum, many students struggled initially with the extra work demands required to build the actual learning space of the Portal. Many reported that even if rewarding in terms of acquired new skills, this phase was stressful.

**On the organizational level**, much of the developmental and implementation work was spent on finding sustainable solutions to safeguarding pedagogical symmetry on the local campuses and appropriate hybrid ad fully digital technology solutions for online interaction. Educators, technical and administrative staff, and leaders at all levels of the organization had to cooperate in new ways to secure the concretization of the project. Economic resources needed to be released and redistributed to guarantee the implementation of a balanced learning environment at each campus, and flexibility and equality of study offered for both students in Oslo and Trondheim. Much time was spent on discussing roles differentiation and delegation of tasks. Who were the real decision-makers? A lot of emphasis was put on the economic aspects and the actual costs involved in the program. In the beginning, the faculty supported the academic innovative value of the project and seemed to understand the uncertainty accompanying the development of a novel cross-campus study program. However, after a while, administrative-related economic concerns took over and negatively impacted the academic development of the program. Resources were drastically cut back, leading to increased responsibility pressure on the educators, who now had to solve administrative problems and hiccups by themselves.

Cross-campus is a novel model in Norway; development is time-consuming, and it challenges the number of available resources. According to the study participants, the key aspect throughout the process must be **leadership support**.

When leadership is committed and appropriate administrative and economic support is guaranteed, the academic staff can better exert their role and concentrate on developing high-quality learning materials and equitable learning experiences for all students in a cross-campus situation.

## 5.3 The evaluation phase—flexibility and equality

To ensure flexibility and equality in teaching and learning experiences in a cross-campus situation, it is paramount to anchor the development of an innovative study program at all levels of the organization (s). It seems that a proactive and problem-solving-oriented leadership involvement in coordinating administration issues and economic aspects might have more positive outcomes for the teaching and learning experience of both staff and students. Conversely, a lack of leadership commitment and a focus more on cost awareness than academic value is detrimental to innovation in Higher Education.

**On the pedagogical level**. To focus on student active learning, teachers needed to be more observers and supervisors, to mediate and motivate students' interaction, discussion, and collaboration by

including a flipped classroom approach and cross-campus group activities. This required a practical organization of courses that entailed a direct collaboration with students and teachers at both campuses. Because of the students' different academic backgrounds, teachers needed to actively provide a variety of opportunities for learning and to develop projects with a breadth of activities to create relevance for all. Students on their turn were required to be active in choosing and developing their learning path and to learn how to best collaborate cross-campus. Since students were involved in the program from the beginning and had to work alongside their teachers, they were encouraged to take responsibility for their own learning and for how to support cross-campus collaborations. Students needed to become aware of how to contribute to an equal experience for remote students, so they had to find out how to navigate and sustain "netiquette" or their social and technological awareness. Students realized that the biggest challenges were rarely caused by cultural differences and that good communication and coordination skills, and English proficiency were the most important factors in intercultural teamwork. To organize and support their work cross-campus, most teams used multiple tools, preferring video and text-based communication channels over voice-based tools. The cross-campus digital setting did not really seem to be an issue for the group dynamics, but the groups still needed facilitation and help "on demand" from their teachers. Transparency throughout the process was also an important factor contributing to flexibility and equality. Transparent and clear assessment criteria, known in advance, and transparent and appropriate forms for project management, contributed to developing students' responsibility for their own learning and deliverables.

**On the organizational level**. After the initial enthusiasm for the academic novelty of the study program, friction developed between the administration and the academic staff, particularly at NTNU which traditionally receives less government financial support. The administration staff demanded clearer leadership intervention and guidelines regarding the increasing costs of the program The academic staff wanted and needed a swifter administrative process to free important financial and staff resources to guarantee quality in teaching and learning. Poor administrative management and underestimated costs drew a challenging picture for the Institute leadership level. Support was revoked or reversed, and the hiring of extra staff was declined. Consequently, existing educators had to work extra with noneconomic returns, and several educators decided to leave the program. New educators came in, but the discontinuity of teaching staff implied an extra workload on the remaining teachers who now had to train colleagues in the pedagogical innovation of the program. Teaching cross-campus in a hybrid learning environment proved to be cognitively challenging. Maintaining equality when teaching students present both physically and digitally demands a complex set of skills that involved both pedagogy and spatial and technological competence. New educators had to get acquainted with the pedagogical vision for the program and the physical and technological aspects of the teaching. More experienced educators had then less time to dedicate to the development of the program because they had to follow up with the new staff. Because innovation in pedagogy takes time, cross-campus cooperation between teachers is paramount to sustain the continuity of responsibility in the teaching staff. To support the academic development of cross-campus collegial cooperation, measures must be in place in the form of freeing an adequate number of personal resources.

## 6 Discussion

Projects exploring new technologies and innovative pedagogical practices are necessarily characterized by a certain degree of uncertainty and are most likely to be costly. Results from our study confirm that universities should take these aspects well into account. Even with external funding present, university administrations would have to chip in with extra resources. Cross-campus and cross-institution innovative projects, therefore, constitute in many respects a double threat, because organizational and administrative challenges can most certainly be expected to come on top of extra costs.

This is perhaps the reason why, despite the international and governmental reforms that have been challenging the foundation, sustainability, legacy, and legitimacy of European and Norwegian Universities for the past two decades, HEIs still strive to adapt and fully embrace the concept of an open university. The current form of Norwegian governance and associated policy models within Higher Education are also undeniably influenced by these international and European concerns about reforms and changes (Maassen and Stensaker, 2011; Bozkurt et al., 2020; Huisman and Lyby, 2020). Strategies and policy ambitions work splendidly on paper but are rather more difficult to implement in reality. The goal of the SALTO project and the joint MCT master was in many respects to challenge the organizational inertia typical of academia and create a shared vision built on a common platform by combining two strong and complementing academic groups in both music and technology from two different universities. This platform was meant to provide grounds for new ways of student/teacher collaboration and cross-campus/institution cooperation by paving the way for the design of future hybrid learning spaces. The vision entailed a shared pool of available physical/virtual resources in terms of staff, rooms (labs), recording studios, and software. The project was aligned both with governmental reform policies on the digitalization of Higher Education in Norway and the two universities' strategic policies. However, as this study uncovered, important aspects to consider in this context is how the demands for reforms and actions are interpreted and implemented within university governance and leadership. In relation to the MCT/SALTO project, it is intriguing to notice that the project ticked many boxes on the leadership agenda and was considered a prestige project. It fitted into the government digitalization and effectivization strategy that had been concretized in the Strukturmelding (Re-Structure Document) from 2015, which reduced the number of state universities and university colleges from 33 to 21 (Ministry of Education and Research, 2015; Wiborg et al., 2022) and paved the way for merger consolidation of geographically distributed units with larger distances between campuses and institutions. Furthermore, the project was meant to become a concretization of the European trends and strategies on digitalization used as a process to enhance the quality of higher education in general, but also to facilitate better collaboration, communication, and resource sharing among the emerging cross-campus/institutions constellations (Ministry of Education and Research, 2017; Kunnskapsdepartementet, 2021). The way from strategic and pedagogical visions to actual implementation was however more

complex than expected. This is not groundbreaking news, Maassen (2017) for instance writes about the University's Governance Paradox, when the more university leaders take on and operate in line with the reform agenda's ideologies, the less effective they appear to be in realizing the reform intentions. Bryman's (2007) literature review on academic leaders also points out that there is no clear evidence that digital technology usage is a priority on most academic leaders' agendas. Their responsibilities are broad and contextually bound, with a tendency to display a range of competing competencies and priorities that sometimes clash. Tømte et al. (2023) and Fossland and Tømte (2020) also reveal that about half the deans at all public Norwegian HEIs reported having no or limited knowledge about how their own faculty addressed issues related to digital technology usage for teaching and learning purposes. A key consideration then emerges of a *dual structure*, which implies a separation between the actors and bodies responsible for administrative matters and those for academic matters. This structure is often characterized by two parallel but loosely coupled hierarchies: one academic and one administrative, each with its own decision-making structures (Larsen et al., 2009). In the case of the cross-campus and cross-institution collaboration between NTNU and UiO, this dual structure resulted in a *double dual structure* operating across distance, with various systems creating barriers for seamless, synchronized collaboration. This includes issues related to Learning Management Systems (LMS), administrative IT-support, purchase agreements for equipment and software, grading systems, teaching hours, ownership of students, and teaching topics. The complexity of the challenges involved reveals the inadequacy of normative models for cross-campus and cross-institution collaboration and learning design. In other words, those creating new spaces for hybrid learning often do so in ways that exceed the capacities of existing design models and university affordances (Goodyear, 2020). In cases of disagreement or conflict, either the administrative or the academic leadership has the final responsibility. Conflicts and tensions may arise both within as well as between different decision-making bodies. Maassen (2003, p.32) discusses for instance four basic dilemmas in university governance reforms. Of particular interest to the MCT/SALTO situation is the dilemma between integrated management structures and dual management structures. This was evident in the establishment of MCT in Trondheim, where the academic line of command from the Ministry-rectors-faculty-institute pushed a decision without consulting the administration with respect to financial and organizational issues. If the heart of any radical change in higher education is not followed by the willingness of the administration and faculty to also embrace change, then there will be no change.

Bahmani and Hjelsvold (2023) refer to Porras and Robertson (1992) and their theoretical framework for organizational development and posit quite clearly that changes in the behaviors of individual members of organizations form the crux of organizational change. Measuring educators' readiness for change in teaching mode is fundamental to cross-campus collaboration and, by extension, cross-campus learning environments and course development (Bahmani and Hjelsvold, 2023, p.2). Consequently, measuring the administration's attitudes to and readiness for change in tackling the uncertainty and complexity posed by the double threat of cross-campus and cross-institution innovative projects is a pivotal contributing factor in the success of said projects. In addition, Abualrub and Stensaker (2018) point to a potential decoupling between 'administrative' and 'academic' responsibilities. Universities are not only places for teaching students and conducting research but are also workplaces. The hybrid campus, which might be in a cross-campus or cross-institution governance model, will require leaders to identify functions that are critically important to the institution's mission and then focus their resources on those functions. How can they facilitate cross-campus/institution collaborations and the management of related hybrid learning spaces?

These authors suggest that colleges and universities seeking to innovate on an institutional level should understand the importance of the *culture* that is needed at its base. **The experiences gathered through the MCT/SALTO project show that innovation is not effective as a top-down initiative; rather, it is most effective when it is developed as the result of allowing faculty, staff, and students to experiment in service to improve the learning that takes place at their institution**.

In a study by Hannon et al. (2018), engagement with interdisciplinary knowledge was shown to have profound effects on academic culture and identities among participating students and teaching staff; however, significant challenges arose in the coordination and administration of interdisciplinary education, with institutional structures highlighted as a contributing factor. In the context of developing cross-campus/institution settings, community building has been identified as a key to successful teaching innovations (Wenger, 1998, pp. 72–73). This approach emphasizes the importance of establishing a Community of Practice (CoP) (1998), a supportive and collaborative environment that fosters learning and engagement among students and teachers alike. According to Wenger (1998, pp.72–73), the concept of a CoP is integral to illustrating how students and educators work across universities. This concept, primarily academic in nature, should also be extended to those educators who undertake administrative tasks as middle managers with primarily administrative tasks.

According to Wenger (1998, pp.72–73), a CoP is characterized by three interrelated elements:

1 An identity defined by a shared domain of interest.
2 Members engaging in joint activities or discussions.
3 Members developing a shared repertoire of practice and artifacts to address recurring problems.

Given the hierarchical nature of academic administration, those at the mid-level are often constrained in reaching beyond their units because they report and respond "up" through linear reporting structures. One advantage of this is that mid-level leaders in a CoP which *crosses organizational boundaries* (university borders), act as direct individual contacts and nodes for connecting unrelated units across or between universities (Akkerman and Bakker, 2011). However, one side effect might be that they only report upwards and may not be concerned about the activities or challenges at the level below. This concept of boundary crossing was introduced to denote how professionals at work may need to "enter onto territory in which we are unfamiliar and, to some significant extent therefore unqualified" (Suchman, 1993, p. 25) and "face the challenge of negotiating and combining ingredients from different contexts to

achieve hybrid situations" (Engeström et al., 1995, p. 319). Therefore, we suggest that such a CoP should include administrators as well as educators and students so that the academic perspective does not pulverize away in front of administrative barriers. To succeed in establishing good management practices for cross-campus and cross-institution projects, universities should primarily invest in activities related to strengthening CoP work. These authors share the suggestion by Bahmani and Hjelsvold (2023) that leaders should therefore initiate measures to prepare the academic and administrative body for the transition to the cross-campus/institution mode in different stages [freely adapted from Bahmani and Hjelsvold (2020)

- Pre-contemplation stage: Seminars/workshops on cross-campus/institution education for educators and other teaching staff.
- Contemplation stage: The creation of a central hub for educators from all campuses to provide networking opportunities, cross-campus/institution coordinators, and the facilitation of a sharing culture to get to know teachers at other campuses and hear about their experiences with cross-campus/institution collaboration.
- Preparation stage: Additional time for research and team development, and the ability to share responsibilities.
- Action stage: Administrative support, better collaborative tools, and communities of practice including the administrative body.
- Maintenance stage: Supervision and support for those engaged in cross-campus/institution collaboration by providing a strong motivational factor to individual educators, and arrangement of a cross-campus/institution day.

These measures might then counteract some of the identified disadvantages of cross-campus/institution collaboration we discussed earlier in this section: Time and cost issues related to planning and coordinating additional work and extra infrastructure, increased administrative overhead, and challenges in maintaining control over the process.

A study by Christensen and Nilsen (2021) aimed at identifying key moderators of staff and student satisfaction at multi-campus universities shows four key moderators, all surrounding dissatisfaction within the different stages of a cross-campus/institution project: Inconsistent technology, hesitation to innovate, geographical separation of staff, and geographical separation of students. **The principles guiding the MCT/SALTO project** had indeed the intention of minimizing these potential dissatisfaction elements. They **were meant to solve the distance boundary between UiO and NTNU by creating a common learning space, thus breaking down the physical/technical boundaries**. Educators on both sides agreed and made a concerted effort to prepare and initiate action. Fortunately, they also were technologically adept educators who put in an extraordinary number of working hours to get the specific learning environment up and running and to facilitate contact and collaboration with the administration. Parallelly, by embracing the concept of "technical humanist" proposed by the MCT program, students also became designers and developers of their own learning space, actively participating in the digital transformation with a pedagogical pathway to motivate them. However, the need for more resources in terms of time, money, several teachers, and administrative support became more evident in the later stages of project implementation. It became clearer that so-called *symmetry issues* were more complex than expected.

## 6.1 Symmetry

Symmetry is a principal concept in the development and utilization of university learning spaces for student active learning, communication, and collaboration across campuses (Bülow, 2022; Eyal and Gil, 2022; Penrod, 2023). This concept encompasses essential elements such as time, money, infrastructure, and ideally shared strategies at the political level (in this case, the Ministry of Education and the Nordic NREN – National Research and Education Network) that are transformed into the university leadership/administrative level (Lillejord et al., 2018; Støckert. et al., 2020). However, the top-down transition and anchoring of strategies and symmetrical attempts in cross-campus and cross-institution innovative projects often do not deliver as expected by the leadership. This is due to these strategies being filtered through the organization. Furthermore, initiatives that originate from the bottom-up and are locally anchored often face difficulties in being transferred across locations and departments due to issues of ownership (Pinheiro et al., 2023, pp.175–188).

The anchoring within the organization requires a comprehensive set of parameters describing *symmetry* on multiple levels when providing the same learning and teaching experience to all participants, regardless of their physical location. This involves developing a transparent fabric that covers and binds all parameters together. Institutions should seek to optimize students' successful access to cross-campus/institution education by looking for impediments to a seamless student learning experience and taking necessary actions to revise or remove those obstructions. Sometimes the change needed is structural, sometimes it's procedural, and sometimes the problem lies in the approach to service delivery. In many cases, it's a combination of all these factors (Marthers and Rosowsky, 2021).

Unfortunately, most traditional HEIs' management systems seem to be insufficient to successfully lead a geographically distributed university and workforce (Groenwald, 2018). To harness the benefits, central leaders must create a culture that supports communication, collaboration, and inclusion; build an infrastructure to ensure consistent quality academic outcomes; and devise system-wide processes and technology to enhance communication and collaboration as well as efficiency (2018).

To develop the MCT master and the related research project SALTO, numerous resources were mobilized. Although the project had undoubtedly leadership support from the rectors, it appears it was not likewise well-anchored in the rest of the organization. Consequently, many of the planned measures like technical framework design, student support systems, topic selection, ownership of courses, weight of courses, grading, hours of teaching, and activities to take place synchronously across campuses did encounter several hinders along the way and sometimes could not run as smoothly as desired.

For example, while UiO had facilities available, NTNU had to design and build the Portal environment from scratch. In the lack of local support resources from the university's property division, educators at NTNU had to work as project leaders with architectural drawings, as well as installation professionals for HVAC, electricity/technical infrastructure, and IT/AV infrastructure. This led to an uneven start, with the necessity of using temporary spaces/studios at the Department of Music Technology in Trondheim compared to a

complete "portal" room already available at UiO. The NTNU Portal environment, however, even if delayed, had the time to be designed and built as a small ecosystem with one major portal room but with adjacent group rooms and a social zone. This solution seemed to provide much greater flexibility and offered students a better learning environment they felt complete ownership of. This uneven development of cross-campus learning spaces resulted in an unbalanced approach toward delivering a shared and equal experience to participants on both ends of the Portal. The students at UiO did not have a social zone or *local* group room in the beginning. Conversely, the students at NTNU had to wait 1.5 semesters to get their hands on the new Portal. Meanwhile, the educators needed to adjust both shared and local activities according to the development and access to the Portal environment (Støckert et al., 2019).

Costs piled up in the attempt to guarantee symmetry of the learning experience across the Portal. Educators' pedagogical vision wanted to include innovative space and technology solutions in a more holistic framework for the development of student-centered learning environments and teaching practices. The pedagogical focus on cross-campus interaction, collaboration, and resource sharing demanded the presence of educators and/or teacher assistants at both locations to facilitate equal access to learning resources and technical infrastructure (Xambó et al., 2020). This was especially important due to the shift in staff that happened during the first years of running the MCT program. New educators not familiar with the initial pedagogical vision for the project needed to be trained and taught. Also, from a spatial-technological perspective, symmetry had to be delivered in the basic functionality of room layout, acoustic properties, lights, AV equipment, and *ad hoc* infrastructure with related costs addition. The Portal was designed as a hub connecting people and resources across distance, and this demanded the deployment of a range of technologies from high-end, low-latency AV systems to, at that time, still under-used communication platforms like Zoom and Slack, which were not yet licensed and integrated within NTNU and UiO software portfolio.

The complexity of managing the related costs to maintain such a learning environment proved to be too much for the university in Trondheim. Organizational structures collapsed at level three when the Department of Musicology at NTNU decided to withdraw from the joint master's program in Autumn (Looney and Briga, 2021). The new Department leadership meant the project had been pushed through the organization by the academic body not taking into consideration the expenses it constituted for the Department already facing economic struggles. The administrative side had notified the academic leaders, from the rector to the previous head of the department, that the project would have been too expensive to be able to start. However, NTNU is a company where academic management is the one with the decision-making power, and they chose not to listen to their advisers. The administration, with the new head of the department in front, felt overruled, and the only way to re-establish a reasonable economic balance was to shut down the master's program and reallocate resources. This was first and foremost decided by the Department alone, and then the second level, the Faculty of Humanities, had to capitulate because there was no other extraordinary funding to free.

MCT/SALTO in many ways exemplifies paradigmatically the double structure conundrum discussed earlier in this paragraph.

## 7 Conclusion and the way forward

Academic organizations are complex systems that require anchoring at several levels - department, faculty, and technical-administrative. This requires a willingness to be humble, to have mutual respect, and an understanding of complex processes. It is important to have an open attitude and accept trial and error, even if it involves the risk of error. A solution-oriented attitude is essential to overcome obstacles in an organization that may seem too large, without a clear path through the system. Navigating a university organization can be compared to entering a maze with several possible exits, detours, and wrong exits: It takes time and energy to move around. Unclear structures and pathways can make it difficult to find the right persons to talk to or turn to - until you find an exit. Roadworks certainly lie ahead. There follows a danger of pulverizing responsibility and innovation initiatives when there are too many layers within the organization. This can lead to measures not being clearly or firmly enough anchored.

This study aimed to shed some light on these challenges and envision possible solutions for more effective organizational anchoring. Presenting the experiences of educators and students may offer new insights into how organizational constraints can negatively affect the work performance of the academic staff and the learning experiences of students.

Much of the work involved in the MCT/SALTO project was based on personal contacts and not via organizational structures, as the tasks to be solved did not quite fit into the usual booths of the units that were supposed to help. This emphasizes the need for flexibility in the organizational structure. There is also a contrast between zealots who are eager to help and work for free and the need for routines defining areas of expertise and responsibility, associated costs, and responsibility flow throughout the organization. The time factor also comes into play - sometimes it takes so long "to get the work done" that educators rather do it themselves.

The experiences gathered during the development, implementation, and ending of the MCT/SALTO project are by no means unusual in academia. There is always a risk that innovation in education, as we discussed, might be most often intended as a way to cut costs by automating processes rather than actually innovating teaching and learning practices. Particularly in times of recession like the present, universities are forced to reconsider their finances and prioritize. In Norway, where most universities depend on public funding, administration bodies within academia need sometimes to make tough unpopular decisions to keep the boat afloat. However, economic resources, though an important part of the equation, are not necessarily the direct cause of organizational inertia that slows down or even puts a stop to educational development projects. We also must start questioning whether it is not becoming counterproductive to let economic concerns trump the social mandate that HEIs have pledged to uphold. As former vice president and vice principal at King's College London, Jonathan

Grant argues universities are living in an "in-between time" of growing uncertainty. The sociopolitical landscape of variable economic growth and inequity further threatened by the current climate crisis, pandemics, and the rise of populism in several countries seems to urge for a change and a re-consideration of the new public management that has characterized university governance in the past decades. A new body of students has also been emerging. Younger students are digital natives bringing with them a set of new values with a clearer focus on globalization, climate issues, and the decolonization of culture and the university curriculum inherited from previous generations. Older students, in turn, need constant skills and knowledge updates to navigate an increasingly unpredictable work life where traditional academic degrees alone are no longer sufficient. At the same time, the current surge in advanced technological breakthroughs in artificial intelligence will forever change the way we approach academic studies. Universities must change the way they govern themselves if they want to survive. We are now witnessing the emergence of a *new power university* (Grant, 2021) that breaks free from obsolete governance models. Some of the *new power* trends are already beginning to be visible. New power learning is more representative and relevant, it delivers knowledge and skills on demand on digital platforms in a life-long perspective and will lead to more participation in higher education globally. Universities must cope with these emerging changes. The instrumentalized managerialism of today's universities will end as universities will need to introduce and include new staff roles where the boundaries between the bureaucratic staff and the academic body are blurred out to ease organizational-level transitions and support genuine innovation in teaching and learning from a pedagogical standpoint. New power universities will need to be transnational in nature and share resources, staff, and degrees. New power research will underpin this development by focusing on multidisciplinary research and using crowdsourcing, citizen science, and open innovation platforms to disseminate knowledge and freely and openly publish research data and results. It is our duty as educators and researchers to demand a more transparent university administration so that we can carry on our work in preparing students for life beyond their degrees. Let us hope roads work ahead.

## 8 Limitations

The present qualitative study, like many others, draws on a limited sample size from a single Master's program, thus its findings are specifically applicable to this context and may not be generalizable. However, knowledge derived from single case studies, while not formally generalizable, can be valuable and often paves the way for scientific innovation (Lysne et al., 2023). With its focus on the educators' and students' experiences, this study tried to uncover fundamental organizational challenges to the development and implementation of innovative cross-campus and cross-institution projects at higher education institutions. Despite the limited and specific context of the study, results seem to echo and confirm international issues related to the topic and therefore can positively contribute to the wider academic discussion with suggestions and further research.

## Data availability statement

The datasets presented in this article are not readily available because they are subject to GDPR regulations in Norway. Requests to access the datasets should be directed to the corresponding author.

## Ethics statement

The studies involving humans were approved by the NSD - Norwegian Centre for Research Data. The studies were conducted in accordance with the local legislation and institutional requirements. The participants provided their written informed consent to participate in this study.

## Author contributions

VC-B: Conceptualization, Writing – original draft, Writing – review & editing. RS: Writing – review & editing.

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## Conflict of interest

The authors declare that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

## Publisher's note

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