Redesigning Presence for Master Curricula
A Case Study for Extra-Occupational Studies

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Abstract. Master's programs for extra-occupational studies aim at the academic further education of people with diverse educational prerequisites and professional backgrounds. Due to this and the target group's specific requirements and needs, designing curricula, didactic concepts, and employing appropriate methods and learning activities is challenging. In this regard, the emphasis is on using digital forms of teaching and learning and providing guiding learning materials for individual preparation and follow-up, opportunities for interaction, coaching, and interactive teaching formats to support knowledge transfer of digital competencies in line with the European Digital Competence Framework for Citizens. The COVID-19 pandemic reinforced these challenges. In this context, this paper reports on two extra-occupational management-related master's programs (MSc, MBA) established for working professionals. The programs' curricula and guiding principles based on a blended-learning concept are presented, elucidating the potential and strengths of student-centered teaching methods like problem-based learning and Harvard MOC business cases. Then, the paper outlines the redesign of the blended-learning concept and didactic methods during the pandemic, focusing on time spent together in (virtual and hybrid) presence phases and the lessons learned thereof. Finally, arisen efforts, the value contribution, student acceptance, transferability aspects are discussed, and recommendations derived.

Keywords: Master's programs · Curriculum design · Academic continuing education · Extra-occupational studies · Blended learning · Problem-based learning · Teaching on-site · Online teaching · Hybrid teaching · Online and hybrid course settings

1 Introduction

Lifelong learning, known as the steady development of one's personality and professional knowledge and skills, is a crucial success factor for adults in employment; in fact, not only to bring forward one's career but also to stand the pace [9]. Therefore, public and private educational institutions flourished with success, launching workshops, seminars, and certification programs. Gradually, also universities recognized the potential of further education and implemented new (post-graduate) study programs, explicitly addressing companies' and employees' needs in many different fields [3].

In the context of higher education, prior work mainly focused on blended education approaches in teaching (e.g. [2, 12, 14, 15, 16]) and on challenges in digital education and digital learning in general (e.g., [6, 8, 14]) on the one hand, and—driven by the COVID-19 pandemic—on changes to teaching and challenges associated with online and hybrid settings on the other hand (e.g., [1, 11, 13]).

This paper reports on two university degree programs employed at the University for Continuing Education Krems, a public university in the German-speaking area, incorporating these aspects in a best-practice case referring to continuing education. In this regard, teaching and learning are geared to the specific target group, namely working professionals, thus, people with professional experience who are fully involved in an active work environment and a private family life, with limited time resources for attending a series of lectures due to their responsibilities. Hence, continuing-education programs must adapt their goals to their audience, their expectations, and knowledge even more than basic university studies, meeting adult-orienting learning needs and aims at the same time [2]. The university has addressed these needs by designing innovative blended learning-based programs that embrace a targeted use of digital and online tools, asynchronous work phases, and synchronously conducted lectures and learning activities in class, supporting extra-occupational studies, individual learning processes, students' motivation, reaction speed, and flexibility. Blended learning might be realized on a continuum between traditional face-to-face learning and pure online distance learning [17]. Teaching contents are research-based, innovative, interdisciplinary, practically and competence oriented. For this reason, external experts from practice support internal faculty; teaching is student-centered and focuses on the interaction between lecturers and students.

In the following, the two programs will be presented in more detail. Within these programs, curriculum and course design had already embraced digital teaching and learning forms as essential parts before COVID-19. However, the pandemic and its consequences, involving social distancing, home office, and online teaching (emergency online teaching, [18]), have demonstrated that progressive digitization not only makes the use of new media-based formats possible but also enables lecturers and program managers to link these formats to the students' individual living and learning situations [11]. To illustrate this, the residual part of this paper is organized as follows: First, both programs will be outlined in their pre-pandemic form with a focus on the didactic design and presence phase within the blended-learning approach. Second, the pandemic-induced redesign and the lessons learned thereof are presented. Third, in the discussion section, the programs and the redesign are discussed regarding arisen efforts, value contribution, student acceptance, and transferability. Finally, recommendations and conclusions will be derived, providing educators and program managers with valuable insights into the programs' specialties and the pandemic-related adaptions that helped achieve previously formulated goals and learning outcomes. In this regard, changes in the didactic setting, methods used, and the targeted utilization of technology supported the further achievement of adult learners' needs adequately and maintained the programs' strengths in these extraordinary times.

2 Best Practice Case for Extra-Occupational Studies

2.1 Curricula Development and Guiding Principles of the Master's Programs

In the following, two master's programs of the university are outlined: "Management and IT" (MSc degree program) and "Digital Corporate Governance" (MBA degree program), developed by the university's Department for E-Governance. Both programs focus on the holistic management of institutions in business and administration, mastering the challenges through digital change. The department's overriding goal was to sustainably teach content and methods required for the goal-oriented use of information and communication technologies. Here, the underlying motivation was to intensify the student-centeredness through individually designed learning phases on the one hand and to increase competence orientation and the connection between theory and practice on the other hand [4]. A general understanding is that joint presence phases are critical because learning is always socially and biographically constructed [5]. However, the working target group's particular requirements in terms of adult learning needs, predictability, and limited time resources should be met in the best possible way. Regarding this, four fundamental questions guided the programs' development:

- How can we create innovative and successful academic didactics, facilitating the course of studies for employed students through clear structures and guidelines?
- Which elements can ensure student-centeredness in the best possible way?
- How and by what means might we boost competence orientation in the curriculum?
- Which aspects of internationalization should we intensify to address future challenges?

  Based on faculty discussions of and work on these questions, curricula for two programs were derived. Both the MSc program and the MBA program share a two-semester core curriculum. Here, management-related problems and issues are in the foreground, discussed based on literature and theory on corporate governance, focusing on digitalization and its potential for businesses and society. Topics, thereby, range from basics in management and economics, controlling, strategy, business and digital trends, business innovation methods, law, process management, and information security to scientific methods, providing students with a comprehensive basic understanding of current and future issues related to successful and sustainable management. The core curriculum is followed by a target group-specific specialization semester to extend and deepen the gained knowledge and skills, considering students' interests and backgrounds, and subsequently writing a master's thesis in the respective topic area. The programs' curricula are organized in modules in which the different subjects are taught.

  Differences between the MSc program and the MBA program arise in their target groups, topics and methods in the specialization semester, and the specific learning objectives. The MSc program "Management and IT" primarily addresses people with experience as innovation or technology managers who contribute to strategic and innovative projects within enterprises and organizations and contribute to their success. In contrast, the MBA "Digital Corporate Governance" program's target group consists of people in higher leading positions with direct responsibility for their organization's

economic well-being. Attending the programs is predominantly driven by the wish for personal and professional advancement, being prepared for the upcoming challenges of digitalization, and expanding one's professional network. Most students of both programs have their origin in the German-speaking area (Austria, Germany, Switzerland) but differ in age, educational background, and professional experience.

2.2   Underlying Blended-Learning Approach

The department designed a target group-specific blended-learning (BL) concept to address students' requirements and particular needs. The approach was introduced in 2010, comprising synchronous and asynchronous learning formats, with well-defined phases of guided but individual preparation and aggregated attendance blocks (presence phase), followed by an individual follow-up phase and a concluding performance assessment. Therefore, the department deliberately adapted the university's general guidelines regarding design and formats to the programs' respective objectives, including self-responsible and joint learning [2]. Thus, by default, a module is organized as follows: In the preparation phase, students prepare individually for the presence blocks, using didactically prepared learning materials like study texts and scripts. The presence phase takes place on campus in three-day or four-day blocks, with approximately one block and module per month, and has the goal of a joint knowledge transfer and training, deepening learning content in live settings and case studies from practice. The subsequent follow-up phase serves to reflect and consolidate gained knowledge and skills, learn for an exam, or write a home assignment/seminar paper (see Fig. 1).

Besides, learning nuggets such as videos, links, chats, and e-papers guide students' learning process outside the lectures. So, for example, students use digital flashcards that map the theoretical principles elaborated in the study texts flexibly for preparation and post-processing, based on gamification. Each flashcard contains a question and context. By "playing" through the cards, students receive immediate feedback on their level of knowledge. Furthermore, they can create personal cards or comment on existing ones (e.g., report perceived mistakes). Playing the cards on the flashcard mobile app affords ubiquitous and highly individual learning.
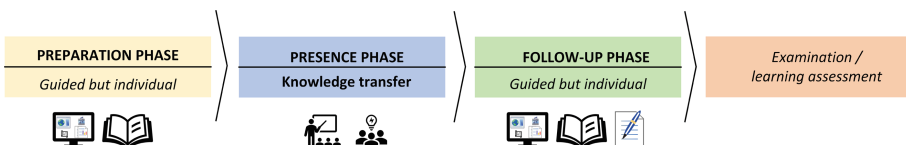

PREPARATION PHASE
Guided but individual

PRESENCE PHASE
Knowledge transfer

FOLLOW-UP PHASE
Guided but individual

Examination / learning assessment

Fig. 1. Blended-learning concept for both master's programs as initiated in 2010

The learning management system (LMS) Moodle serves as the backbone to administer and organize the programs' blended-learning concept. It not only maps the courses in modular form but also creates learning structures. Therefore, the system branches students from the main course into their sub-courses, which map the different phases and the respective blended-learning elements.

2.3   Problem-Based Learning Using the Example of DIG and MOC

Adult learners are currently facing the challenges of managing digital transformation in their working life. Therefore, the "Digital Governance" (DIG) seminar project occupies a unique position in the core curriculum of "Management and IT" (MSc degree program) and "Digital Corporate Governance" (MBA degree program), not only in terms of scope (13 ECTS points) but also forms a thematic parenthesis. Based on concrete problems of companies or organizations, students examine possible strategic, technological, and organizational effects of digitalization with the support of methods like the lean startup, business model, or value proposition canvas. These two semester-spanning projects conclude with a project thesis.

Elements include blocked face-to-face seminars, a boost camp, presentations, and feedback sessions on the project work. In addition, there are distance learning units, online coaching, and guided work assignments in virtual teams. The DIG seminar project follows the problem-based learning (PBL) approach. PBL emphasizes the interactive and comprehensive nature of learning.

As a flexibly structured approach to active learning, PBL follows the basic constructivist idea that knowledge is context-dependent and should be actively constructed through meaning-making activities on the part of the students [10]. In practice, students are confronted with a concrete or abstract "problem" and acquire new knowledge and competencies through collaborative and guided work with this research task while practically experiencing the relevance of this knowledge and the respective competencies. Learning occurs from each other and together through repetitive research processes, targeted feedback, and ongoing reflection. The goals of PBL include helping students develop (1) flexible knowledge, (2) effective problem-solving skills, (3) self-directed learning skills, (4) effective collaboration skills, and (5) intrinsic motivation [7]. In this process, the role of the lecturer shifts from that of the traditional knowledge broker to the preparation of a structured learning process, the supportive guidance of students, and the promotion of regular, critical reflection [10].

The aim of the DIG seminar project is that students expand joint learning, digitalization knowledge, and methodological skills, which are essential competencies for digital transformation. Accordingly, a teaching team provides content-related and practical support in terms of PBL. This teaching team consists of academic staff members and experts from (startup) practice who coach the work on the assignments (e.g., video pitch creation, product-market fit analysis). Thereby, the target is that the knowledge gained flows back into practice.

The MBA program's specialization semester MOC "Digital Competitiveness" (MOC stands for Microeconomics of Competitiveness) explicitly addresses the European and international orientation. The learning materials are based on the documents of the MOC Affiliate Network of the Institute for Strategy and Competitiveness of the Harvard Business School by Michael Porter. In the preparation phase, students must prepare questions on the business cases individually, which are discussed in the presence phase under the guidance of the students with the help of the lecturers (flipped classroom). Using the example of numerous international case studies, students get insights into the essential concepts and strategies for improving the competitiveness of companies, industries, clusters, regions, or countries. In the follow-up phase, students place what

they have learned in a European context or reflect on the lessons learned for the industry in which they work.

"International Experience" in the MBA program stands for excursions to countries in the EU or preferably to the non-European economic area. The aim is to deepen subject-relevant content for managers in a multicultural context (experiential knowledge). Due to the pandemic, this format had to be temporarily substituted in a hybrid form. Summarized, the MBA specialization semester contributes to sharpening students' managerial, strategic and intercultural mindset and related competencies by interactively integrating and employing well-developed and established business cases from different regions and by fostering international exchange through both study trips and guest lectures and inputs of international experts on the course to cope best possibly with emerging challenges in an increasingly digitalized and globalized world.

2.4 Redesigning Presence - Lessons Learned

Before COVID, the departments' academic program management generally coordinated modules and presence blocks with internal/external lectures, supported by an administrative assistant for organizational issues, and was responsible for organizing the courses in the university's LMS Moodle, including students' learning journey, study texts, flashcards, and course materials in time. Nevertheless, lecturers were usually responsible for the course designs, developing specific content, and giving their lectures within the presence blocks on campus.

With the rise of the COVID-19 pandemic in the summer term of 2020, it was necessary to quickly switch to a pure online setting (emergency online teaching, [18]). To master the unfamiliar circumstances and suddenly arisen challenges in online teaching, the department decided to accompany lecturers in their courses. So, the academic program managers, or administrative assistants, took up a co-moderator role, serving as a technical and emotional backup and assistance for small tasks as well as supporting a convenient teaching and learning atmosphere (live on Zoom). Over the summer, the department evaluated the experiences made and initiated an improvement of online lectures in terms of the didactic concept and teaching methods to maintain high-quality lectures and the previously intended learning outcomes, skills transfer, and introduced standards to foster predictability for the students. For these reasons and to detect lecturers' potential training needs, the departments' academic program management intensified the coordination with the internal and external lecturers, organized virtual networking meetings to coordinate and discuss suggestions for improvement, and methodological as well as didactic recommendations.

Accordingly, the blended-learning approach was also adjusted, including additional online evening sessions in the preparation and follow-up phases. Thus, first, joint virtual kick-off sessions via Zoom were introduced to guide students in preparing the virtual presences. These sessions were administered by the internal program management together with the modules' lecturers to outline the upcoming presence blocks, provide impulses, and introduce module contents. Also, in the follow-up phase, a joint virtual follow-up or closing session was established, held by the lecturer(s) responsible for the

current performance assessment, to extend inputs, jointly reflect on the lectures, and provide students with the opportunity to ask questions relevant to home assignments/seminar papers or exams (see Fig. 2).

Besides, the department reformed the virtual presence phase and defined new standards for lectures:

- The planned full-day teaching units were shortened due to a reduced attention span in an online setting (9:00 a.m. - 3:30 p.m.). To some degree, the mandatory virtual kick-offs and follow-up sessions contributed to closing the resulting time gaps.
- Teaching sessions were structured more iteratively to improve students' concentration, consisting of alternating input, training, and reflection phases. Therefore, lecturer-centered theory inputs were shortened in favor of an interactive dealing with topics in collaborative group tasks, worked on in small groups in Zoom breakout sessions and with Mural whiteboards for working notes and outcome records, and succeeding discussions of the work results.
- The role of "co-moderation" to support lecturers was extended and officially introduced. Its responsibility was to ensure a positive working atmosphere and provide content-related and didactic support. This role was then either taken up by the program managers or by a digital teaching assistant.
- To implement these issues in the best possible way, every lecturer had to provide a comprehensive and detailed "script" encompassing a schedule, matters to be handled, didactic elements and aids used, and people involved.

In addition to these endeavors, the department created virtual socializing and networking opportunities outside class (e.g., by using the socializing app Wonder.me) and actively promoted them among students and lecturers.
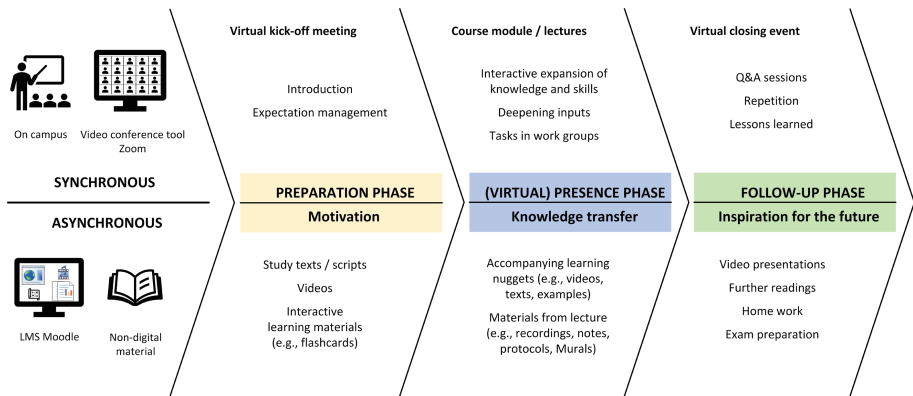

Fig. 2. Adapted blended-learning concept during the COVID-19 pandemic

With the winter term of 2021/22, the presence phase was switched to a hybrid design (as far as the pandemic allowed). In this setting, a sub-group of the students and partly

lecturers virtually join the courses held on campus. For this set-up, the department accommodated the existing standards and introduced new recommendations and guidelines for teaching:

- Since lecturers and students had requested this, teaching times have returned to default mode (9 a.m. - 5 p.m.).
- Despite this, the department has maintained the virtual kick-off and follow-up sessions due to the positive experiences.
- More guest speakers are brought in for impulses or discussion sessions to further increase students' attention in class.
- The department still supports lecturers in their planning process and the (technical) implementation of their courses on-site to ensure a high quality of teaching, learning outcomes, and integration of the virtual student group.
- For hybrid (mixed) student workgroups within sessions, meeting rooms with conferencing equipment have been made accessible on campus.
- For (virtual) collaboration outside the courses, MS Teams channels, and Zoom rooms have been established for students in addition to the existing tools.
- Also, students sometimes still use Wonder.me to socialize with their peers and lecturers after the virtual evening sessions.
- Besides this, the department has established regular virtual network meetings with lecturers as a valuable platform for exchange.

3   Discussion

3.1   Added Value

Continuously adapting curricula in terms of content, competencies to be taught, and the didactic design with the help of new media and technologies is the task of every university. With the introduction of problem-based learning (PBL), it was possible to increase the didactic competence of the lecturers regarding Harvard MOC business cases and the problem-solving competence of the students, especially against the background of their professional challenges. In addition, by sharpening their reflective skills and establishing a constructive feedback culture, students were taught self-reliance, self-organization, and the intended use of learning strategies. The learning outcomes of the DIG seminar project provide lasting evidence in this regard. Students implemented most of the developed projects in their companies, and these projects served as best practices.

Another added value is that students link the use of digital media and virtual teaching-learning settings with their lifeworld and develop a kind of digital networking competence. For example, students started to apply Scrum or Design Thinking methods and corresponding competencies in their working environment and reflected on them in the specific context. Thus, digital competence or technical problem-solving competence per se is promoted as well as a sustainable transfer to students' everyday world in line with the European Digital Competence Framework for Citizens.

By using and testing a wide variety of digital teaching and learning tools during the pandemic, not only students' digital competencies were trained, but also those of the scientific and administrative staff.

For the students, the use of the tools made the individual learning process more flexible. This flexibilization did not generate any additional effort for the students in terms of direct support or administration, as it was made transparent, comprehensible, and supported by the new mapping of the curriculum in the learning management system (LMS) Moodle. In particular, the conversion of the LMS Moodle provides students with a clear structure and information on the learning journey for each module, and the possibility of repeatable learning occasions, eliminating the inequality of prior knowledge or experiences in an individual and self-directed way.

3.2   Acceptance of the Redesigned Presence (Classroom) Phase

In general, the department evaluates the acceptance of the redesigned presence phase and blended-learning concept through the following channels:

- student feedback (evaluation standardized or informal),
- quality of learning output,
- feedback from lecturers,
- feedback from advisory boards.

Students evaluate every course using online questionnaires on didactics, learning materials, lecturers, and workload at the university. In addition, students can also give individual assessments in free text fields. The results of these surveys are stored in the central evaluation system (Evasys). An example of this is the result of students' feedback on the opening session of the DIG seminar project (Evasys) on 06.11.2020. Overall, the course was rated "Very Good" (median) and 1.4 in the mean (n = 41). Excerpts from the individual comments underline this result (translated from German):

- "Great. Excellent impulses, practical work, useful exercises, and group work for project work."
- "Very intense but learned a lot. Great people from the business world. Online is definitely more exhausting than offline interaction - and fortunately, there was an opportunity to exchange ideas with colleagues (coffee chats)."
- "Excellent lecture days; I was able to take away some things and hopefully use them in the professional environment to think about."

Another indicator of the acceptance is the work groups' results of the DIG seminar projects (online implementation from 2020/21). The selection of topics alone, from "Digitization of Business Areas to Strengthen Market Position in Stationary Retail" to "Predictive Customer Support" and "Perfect Matches in Blood Plasma Research and Preparation", demonstrates that the interweaving of theory and practice has been successful. The following graphic recording from the groups' final project presentations provides an overview of all topics students worked on during this academic year (see Fig. 3).

The many projects subsequently implemented in practice underline the successful transfer into practice.
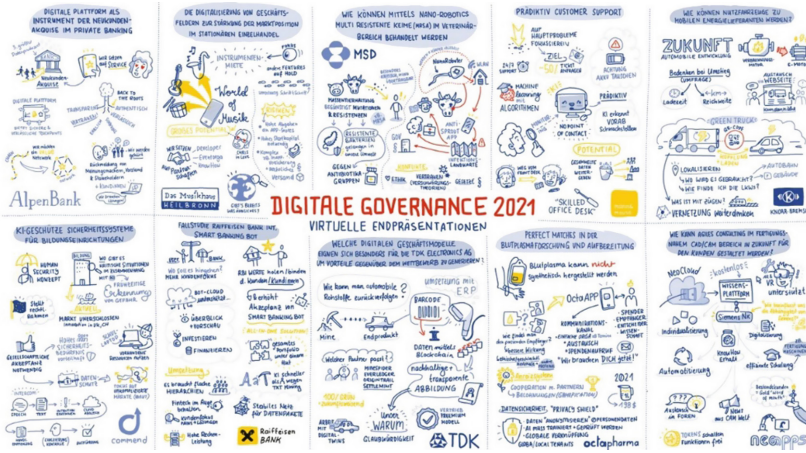
Fig. 3. Graphic recording of the final presentation of the DIG seminar projects (2020/21)

To further investigate students' acceptance of the adapted blended-learning concept and the redesigned presence phase and its quality, we collect data in an ongoing project on students' perceived learning achievements and satisfaction with the current teaching mode in the virtual closing events after each presence phase. The aim is to analyze these data in a longitudinal study combined with the course evaluations and students' actual academic achievements' development in terms of course grades at the end of the study year. Questions are formulated as statements to be rated on a five-point Likert scale, e.g., (i) I have learned a lot in the last presence phase, (ii) At the moment, I am satisfied with my learning progress in my studies, (iii) I am satisfied with the current teaching mode, (iv) In the current setting, I feel well integrated into the lessons, (v) I feel part of the student group of our class. In addition, an open answer question on further issues enables students to anonymously communicate any needs not covered by these items.

3.3   Effort

As indicated, in the virtual and hybrid settings, an increased development effort occurred first in adapting the underlying concept and then in the current implementation. Additional effort emerged for the coordination with the (internal/external) teaching staff. Likewise, accompanying the lecturers bound additional resources.

Various platforms and tools have delivered the digital learning environment, notably Moodle, Mural, Wooclap, Wonder.me, and Zoom. Appropriate technicians are needed to implement and maintain the software. In addition, licenses for commercial software had to be acquired occasionally.

Two academic staff members continuously supervised the (virtual and hybrid) presence phases of the master's programs to make the interaction in virtual classroom phases and virtually joining groups as efficient as possible. Also, experts or guest speakers were invited for additional theoretical input in individual cases.

3.4 Transferability

In particular, the department and the university will incorporate the experiences gained from redesigning the presence (classroom) phases and the problem-based learning (PBL) approach into the future design of hybrid courses and seminar series, organized in cooperation with partners from politics and business.

Summarized, the department created an innovative blended learning concept (BL) with clear structures, standardizations, and specifications that can be easily mapped in the learning management system Moodle without higher effort.

In addition, the adaptations make clear the ongoing need for further training in media competence and didactics among those involved in teaching.

Teaching based on the Harvard MOC business case method is transferable to all management-oriented courses at the university and underlines the aspect of European and international orientation. In particular, the background that the challenges of digitalization do not stop at national borders is essential.

4 Recommendations and Conclusion

The department has gone through "difficult" and exciting times during the COVID-19 pandemic like other institutions. The immediate need for social distancing and the sudden change-over to online classes were challenging to everyone involved, the department's staff, lecturers, and students. However, we had to take up the challenge and accept it, reacting fast, flexible and targeted. Already on day three of the nationwide lockdown, we introduced an online consultation with students. Likewise, lectures were instantly adapted to the new conditions. These achievements were made possible through the departments' distinct innovation orientation and the staff's and lecturers' well-developed didactical and technological skills that were already present before the pandemic and further supported by students' affinity and willingness to use digital technologies and try out new tools.

With rising experience, teaching and the related processes could be continuously improved and adapted to the current needs—with success. Especially after the department's first revision of the presence phases with a new didactical concept, additional tool usage, and the introduction of kick-off and follow-up sessions, students were not only contented with the procedures and learning journey but also demonstrated their acquired knowledge and skills in terms of outstanding performance and grades. These positive changes applied to the whole core curriculum and specialization semester, but especially to students' work on their DIG seminar projects in both programs, supported by a problem-based learning approach, as well as the work on Harvard MOC business cases in the specialization of the MBA program.

Also, lecturers widely recognized the redesign's potential and advantages for online and virtual classroom settings. On the one hand, a more detailed lesson planning with fine-grained sequence plans was perceived as valuable and supportive for smooth and well-filled lecture days and to achieve the intended goals and outcomes—especially regarding shortened lessons in the complete online setting. Second, the close communication and collaboration with the academic program management, establishing

a co-moderating role, and technical assistance in administering online and hybrid sessions comforted lecturers. So, they could outsource potential technological hurdles and administration to a high degree and were, therefore, able to entirely focus on teaching and interacting with students. Furthermore, more detailed planning and co-moderation relieved potential stress and helped generate a general feel-good atmosphere.

Summarized, the critical success factors of the department's adapted blended-learning concept were a combination of the following aspects:

- the use of appropriate technology (video conferencing tools like Zoom and assisting tools like the whiteboard application Mural),
- the communication and socializing of students with each other and with the lecturers (Zoom chat, Zoom breakout sessions, Wonder.me),
- extensive interaction and active participation in the (virtual) presence phase, to learn by working on topics and tasks in small teams, using adequate working tools, and discussing the outcomes (Mural; Wooclap for votings),
- the precise planning of the course days (presence phase) with the help of a detailed schedule (script),
- the technical and administrative support of lecturers during their teaching sessions, and
- the program manager's role in accompanying students on their learning journey, fostering social relationships with the student group, and students' perceived encouragement through the department.

To put the case into a nutshell, we summarize that (1) innovative university didactics succeed by means of blended learning with a clear structure and specification, (2) student-centeredness is the best possible way by designing individual learning phases, (3) competence orientation can be achieved in the curriculum by clear communication of learning outcomes and by connecting of theory and practice, (4) the European and international orientation are strengthened in the area of "International Experience" and the specialization "Digital Competitiveness" with Harvard MOC business cases.

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