International Journal for Business Education

Volume 162 | Number 1 Article 5

12-2021

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International Journal for Business Education, No 162
December 2021
ISSN 2164-2877 (print)
ISSN 2164-2885 (online)

Practice Enterprises in Times of Distance Learning: The Impact and Consequences of the Covid-19 Pandemic to the Collaboration of Practice Enterprises

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Abstract

The aim of this paper is to outline the consequences which arise from the digital transformation of the multidimensional teaching and learning setting of practice enterprises and to discuss how digital collaboration of students can be supported during the COVID-19 pandemic. As an evolutionary moment also in the field of education, one can consider the experiences of COVID-19 as a catalyst for digital transformation and distance learning in education. How digital collaboration can be fostered in times of distance learning is shown by using the example of business simulations such as practice enterprises (PE). While previously this multidimensional teaching and learning setting was organized to a large extent on-site in a special classroom, a new learning and working environment had to be created with the transition to distance learning. By presenting two specific PE-activities (the Erasmus+ Project HEIPNET and the Online Trading Day at the University of Graz) a better insight is gained into how practice enterprises work and how the digitalization of teaching and learning settings is achieved in this context. It is concluded that COVID-19 has led to an accelerated need for teachers to rethink their didactical settings, with the role of the teacher as a designer of an adequate learning and working environment getting even more relevant than before. In addition, the article aims to identify opportunities to promote digital collaboration and contribute to learners' employability.

Keywords: Digital Transformation – Distance Learning – COVID-19 – Practice Enterprise – HEIPNET – Online Trading Day

ISSN 2164-2877 (print)
ISSN 2164-2885 (online)

Introduction

Digital transformation as one of the most discussed drivers in today´s society affects numerous areas of our living and working world as well as all areas of teaching. The current scientific discourse underlines the importance of digital transformation, its disruptive potential and the need to transform our society (Abolhassan, 2017; Bower & Christensen, 1995; Coupette, 2014). The global pandemic COVID-19 accelerated this transformation and changed the previous framework conditions in our living and working-world as well as, in our teaching from one moment to the other. Thus, in the field of education it is important to recognize opportunities, especially from these abrupt changes, to think one step further and to derive recommendations for further development (Schuknecht & Schleicher, 2020).

Digitization, digitalization, and digital transformation (Kamsker et al., 2020) in the context of teaching are not new aspects, however they have gained increasing attention with the pandemic-induced distance learning. Trends, initiatives and calls for a growing digital development have existed in Business Education prior to COVID-19, for example in the field of business simulations such as practice enterprises[4] (Riebenbauer et al., 2018). Nevertheless, not all practice enterprises have thematized and integrated this transformation into the teaching and learning setting. Due to the pandemic, nearly all school systems worldwide had to switch to distance learning at the beginning of the year 2020 and, it was necessary to adapt all kinds of teaching methods into online formats – including working and learning in a practice enterprise. The trend to digitization has been existing long before COVID-19 and numerous approaches towards the digitization of organisations and teaching and learning processes already existed. However, shifting the entire practice enterprise environment to distance learning in a matter of days was a completely new situation for teachers and learners. As most school systems worldwide switched to distance learning almost simultaneously, a whole (simulated) economy (namely those of practice enterprises) moved nearly all activities online. Especially Austria, with about 800 practice enterprises, is one of the world's leaders on this practice enterprise market (ACT – Austrian Center for Training Firms, 2020a). This mainly results from the fact that this multi-dimensional teaching and learning setting is part of the curriculum for Austrian business schools and colleges (Curriculum for the Secondary College for Business Administration, 2014, p. 5). All these practice enterprises faced the major challenge to switch rapidly to distance learning and had to deal with the advantages and disadvantages resulting from digitalization. In view of these developments and challenges, this paper pursues the purpose of finding out, *which consequences arise from the digital transformation of practice enterprises and how can the digital collaboration of students be supported during longer periods of distance learning.*

To address these underlying questions in this paper, a research design based on three consecutive steps of inquiry is pursued. The design is conceptualized in the manner of a literature-based deductive approach, since empirical studies on the topic of digitalization in the context of practice enterprises are missing so far (Kamsker & Feuchter, 2021, p. 35). At the time of writing, large-scale studies on the impact of the COVID-19-pandemic on the field of practice enterprises were not obtainable. The methodology of data collection largely is based on the authors' observations during the first lockdown in

[4] Practice enterprise (PE) is "a multidimensional teaching method based on a business simulation for learning purposes [where] students execute procedures similar to real-life companies in a virtual market economy" (Riebenbauer & Stock, 2015, p. 39).

ISSN 2164-2877 (print)
ISSN 2164-2885 (online)

March 2020. The purpose of the paper is therefore to level the ground for future (empirical) research in this field. The structure of the paper is as follows (see overview in figure 1):

(1) Within a first step (chapter 1 and 2), the digital transformation as a central driver of today´s society is explained. In addition, the differences between digitization, digitalization and digital transformation are clarified. The global COVID-19-pandemic has served as an accelerator of the digital transformation (among influencing many other megatrends, such as globalisation, new work, knowledge society). The pandemic has also led to a large-scale adoption of distance learning, which has also affected the working and learning in practice enterprises.

Figure 1: Digitalization and Practice Enterprise

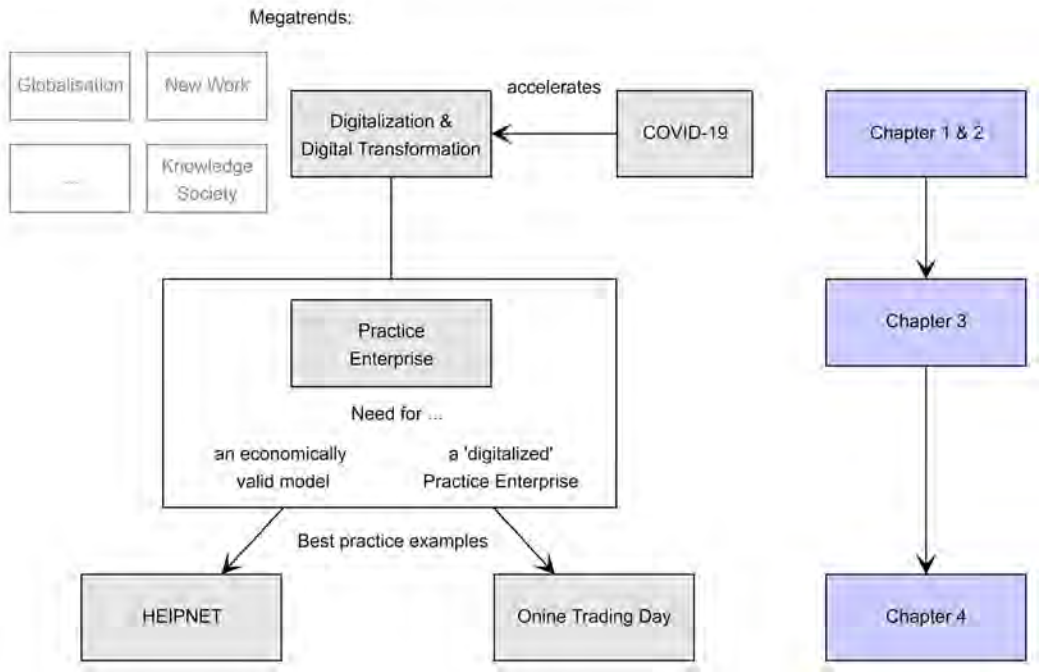

Figure 1. COVID-19 as an accelator for digitalization and digital transformation, which in turn influences the didactical setting of the business simulation practice enterprise.

(2) Practice enterprises require an underlying economically valid model to provide a suitable basis for students' competence development (Riebenbauer & Stock, 2015). To understand the modelling of digitalized work processes within a PE, the second step of research (chapter 3) illustrates the digitalization of practice enterprise courses. This is shown by explaining the general framework of this method and by using one specific initiative as an example for digitalization processes.

(3) Empirical data on the extent of digitalization in PE is still rare. However, it is possible to identify best practice examples for digital collaboration within and between PE. For this reason, the international Erasmus+ Project HEIPNET and the Online Trading Day at the University of GRAZ are outlined. These examples, together with first results from a student survey, give a deeper

ISSN 2164-2877 (print)
ISSN 2164-2885 (online)

insight how teaching and learning within a practice enterprise can take place in a distance learning environment.

In the conclusion, the underlying research questions are revisited. Additionally, further opportunities and challenges for practice enterprises in times of digitalization and distance learning are outlined.

COVID-19 as a central driver for digital transformation and distance learning in education

Numerous publications deal with the consequences of digital transformation and its influence on our society (e.g. Balsmeier & Woerter, 2019; Coupette, 2014; Schuknecht & Schleicher, 2020). However, the closely related terms of *digital transformation*, *digitalization* and *digitization* are widely used as synonyms and the differences between the three terms often remain unclear. To define a common understanding, the origins and meanings of each term must be clarified. All three terms interlock and build on each other (Kamsker et al., 2020):

- *Digitization* involves the conversion of analog to digital data.
- *Digitalization* comprises digitization and means to improve and automate processes, structures, and business models.
- *Digital Transformation* goes beyond digitalization by taking advantage of digitalization to develop entirely new business models, structures, and processes.

As the foundation of the three interlocking terms, *digitization* is described as a process, where analogue data are transferred into digital data. For example, a printed paper is digitized and transformed to a digital format and the information is made available in a digital way (Irninger, 2017). When the digital data is also used for improving and automating processes, the term *digitalization* is used instead, e.g., with an electronic tax assessment procedure. *Digital transformation* includes all previous stages. Based on the process automatization of digitalization, entirely new business models are developed. Especially fundamental changes in basic structures and the development of new business models by using digitized data are described with digital transformation (Kamsker et al., 2020).

The digital transformation affects many areas of our living and working world. For some time now, there have been calls for more digitization and the use of digital technologies is increasing. Even if life and work become more digitized, this will happen in small steps. Especially inert institutions that have previously undergone a digital transformation are confronted with the challenges of COVID-19 - more than institutions that have previously kept pace with changing trends (Irninger, 2017). At the beginning of 2020 a substantial share of companies worldwide and whole school systems faced the challenge to work and learn from at-home and, consequently, they had to rapidly digitalize their working processes. Different tools and software were applied, and processes got transformed to make this transition possible. From one moment to the other institutions previously resistant to digitalization and digital transformation were forced to change their workflows and to keep pace with the changing trends. It might be the case that without COVID-19 this significant structural change would not have taken place (or at least not at the current speed and scale). Therefore, it is of high relevance to deal with the consequences and not only to cope with these changed circumstances, but also to use them and to further develop the organizational processes.

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ISSN 2164-2885 (online)

When the focus of digital transformation is set on education, a clear separation between digital transformation and distance learning must be made because *digitalization* in the school system is not completely new. Some efforts towards digitalization in educational institutions have existed since the 1980s (Moore et al., 2011). Terms like online learning, e-Learning or blended learning were used to describe how learning and the concomitant communication occur by using digital tools. The lack of consistency in the terminologies between distance learning, online learning, e-Learning or blended learning outlines the need of a common definition of distance learning (Moore et al., 2011). Distance learning describes the learning in different physical spaces. This learning can take place either synchronously (at the same time) or asynchronously, i.e. at a different time (Brady & Pradhan, 2020; King et al., 2001). Most of these kinds of materials, e.g., online learning materials, eBooks, learning management systems or other educational apps were formerly used as supporting tools in teaching on campus. Due to COVID-19 a *digital transformation* of the way of teaching and learning was accomplished, and digital tools became even more important and represented the characteristics of distance learning. Therefore, adequate learning materials must be provided, and precise working orders must be defined.

The potential of distance learning initiated by the COVID-19 pandemic and the digital transformation include the reduction of costs, time flexibility, location-independence and adapted learning processes suitable for personal needs (Khayrullaevna et al., 2020). Individual learner differences, e.g. individual learning methods and self-pacing, represent additional advantages (Arkorful & Abaidoo, 2015). Nevertheless, also the challenges of switching to distance learning must be outlined, since the educational system provides much more to the individual learners than just cognitive learning opportunities. Especially the social factor and human contacts must be considered since they are often missed out in distance learning. Arkorful and Abaidoo (2015) also mention disadvantages such as that not every educational subject is equally suitable distance learning, e.g. medicine or technology, where practical skills need to be developed. Moreover, other negative impacts such as an impairment of socialization skills or the difficulty of assessing performance in distance learning are highlighted.

In this context, the important role of higher education institutions (e.g., universities) should be emphasized, as they often play a pioneering or supporting role for institutions in general secondary education as well as in vocational education and training. Khayrullaevna et al. (2020) highlight the tasks of higher education institutions such as “the development of distance learning and the creation of electronic libraries, the modernization and development of the existing network infrastructure and the increase in the throughput of the channels used” (Khayrullaevna et al., 2020, p. 1282). These mentioned tasks are certainly not relevant for every teaching area to the same extent. But especially for *complex teaching and learning environments* such as business simulations in the form of practice enterprises these resources and know-how along with digitalization seem to be valuable to change previous processes and structures of the practice enterprise environment into distance learning and to benefit from this digital transformation also by new teaching strategies. Just as real companies have been affected by the COVID-19 pandemic and the process of organizational learning has been accelerated (Papadopoulos et al., 2020), this can also be applied to practice enterprise work.

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Digital collaboration in practice enterprises

Practice enterprises exist around the world, and they constitute a worldwide network with more than 7,000 practice enterprises in 46 different countries. This international network can be seen as a global economic system, connected through national central offices and administrated by PEN Worldwide which is the central association of all practice enterprises worldwide (PEN Worldwide, 2020a). The national central offices take an important role in the practice enterprise economy, since they offer commercial services such as bank, chamber of commerce, custom and taxation, post office, telephone, and insurance companies to the participating practice enterprises.

For the term 'practice enterprise' there exists a variety of synonyms (e.g., practice firm, training firm or virtual enterprise). This paper follows the definition of PEN Worldwide, where practice enterprise is understood as a trainee-run company that operates similarly to a real business and resembles its organization, structure and function (PEN Worldwide, 2020b). The traded goods and services and the flow of money are simulated, but the demand, orders and external contacts to other practice enterprises are real. Practice enterprises are organized in departments, processes, or profit centers, in which students can collaborate and learn together. For example, in the accounting department, students carry out the bookkeeping with an accounting software application and learn how to create controlling reports or annual financial statements. Other students might be responsible for sales, purchasing and marketing. The organizational structure can vary due to the focus, team size and learning purpose of a practice enterprise (Riebenbauer & Stock, 2015).

Business simulations such as practice enterprises are often used in vocational education and training and in some higher education institutions. *Practice enterprises* are characterized by the fact that they trade with simulated respectively fictitious products and money but allow real external contacts with other practice enterprises and thus differ from other business simulations. Junior companies, for example, trade with real goods or services, real money, and real outside contacts, but on a smaller scale. Additionally, *learning offices* represent a third form of business simulations, where everything (i.e. the flow of goods and services as well as the outside contacts) is simulated (Gramlinger, 2004). One feature of practice enterprises is that students have the possibility to use a specific practice enterprise office to work and learn together in teams. These offices are usually designed like open-plan offices and equipped with computers with accounting software and other relevant office equipment.

Practice enterprises offer a specific learning environment in which learners can develop specific skills and aggregate the knowledge of different subjects (Tramm, 1996). The underlying concept of the multi-dimensional teaching and learning setting is the concept of action orientation (Peterßen, 2009). The comprehensive concept of action orientation is used to achieve the ability for complete and independent acting. Therefore, meaningful tasks and complex problems have to be solved by the learners in order to increasingly organize their activities independently (Peterßen, 2009). This concept has its theoretical foundations in experiential learning with the 'wheel of learning' (Kolb, 2014) and in the project method based on Dewey and Kilpatrick (Dewey, 1997) which comprises the four steps purposing, planning, executing and judging. In the context of teaching and learning in a practice enterprise, the following aspects are of great importance (Riebenbauer & Stock, 2015):

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(1) *Purposing*. Students are required to set their own goals and to purpose possible problem solution strategies to the PE-teacher. The students act independently, they collaborate closely in teams, however, under the supervision of their PE-teacher.
(2) *Planning*. The aims and possible solution strategies are transformed into a specific action plan by the individual students.
(3) *Executing*. Upon planning, students are responsible for the realization of their plan.
(4) *Judging*. Within a final step, students evaluate the effect of their measures undertaken and reflect upon their problem solution. This reflection provides the basis for the next stage, where the wheel of learning starts again with purposing new measures.

The encouragement and development of action competence – which can be seen as an interaction of self, social, professional and methodological competences – is a central issue of the multidimensional teaching and learning setting practice enterprise (Berchtold & Stock, 2006). In order to foster or further develop this action competence and to create an appropriate learning environment for it, in which students can link their existing knowledge with new experiences and improve their key entrepreneurial competencies, , the multidimensional teaching and learning setting requires specific didactical settings, a valid modelling of a practice enterprise as well as a high engagement and professional competence of the PE-teacher (Riebenbauer & Stock, 2015).

Due to COVID-19 most practice enterprises stood in front of the major challenge to switch to distance learning. Therefore, technology issues occurred, and new teaching strategies were demanded. In-person meetings with students were changed to online meetings and hence the practice enterprise work was continued via distance learning. As it was no longer possible for students and teachers to work and learn in the PE-offices on-site, it was necessary to enable remote connections for the students to get admissions to all data, software, and the accounting software from their homes. The described changes and the establishment of remote accesses require a substantial amount of learning support and IT-assistance. These initial challenges were eased by the development that most national central offices already offered their services in a digital way, which enables the practice enterprise work from at-home, e.g., electronic banking, web shops and electronic tax return (ACT – Austrian Center for Training Firms, 2020b). Especially the remote access to different accounting software has been proven to be challenging, since the programs are installed in the PE-offices on-site and most licenses don´t offer a cloud-based access for educational purposes. Nevertheless, other tools like MS Excel lists or self-developed instruments can be used as work-around solutions for bookkeeping, invoicing, and controlling if a remote access to the accounting software is not available. Particularly those practice enterprises that had undertaken steps towards digitalization prior to this transition to distance learning, had advantages in contrast to such practice enterprises which worked with analogue data and outdated methods.

Some efforts towards digitalizing practice enterprises have already been made before COVID-19, e.g., with the Austrian project ‘SMART Practice Enterprise’ (in German: ‘Smarte Übungsfirma’). The aim of this initiative was to prepare the PE-environment for the challenges of the digital transformation (ACT – Austrian Center for Training Firms, 2020b; Medien HAK Graz, 2019; Riebenbauer et al., 2018). The challenges arising from digital transformation are not exclusively addressing technical domains, but also aspects of sustainability as well as the human factor according to learning individually. Therefore, the

ISSN 2164-2877 (print)
ISSN 2164-2885 (online)

smart practice enterprise is based on the three different columns (1) digitalization, (2) sustainability and (3) the human factor regarding individual PE-learners. These three columns enhance the core area of the PE-setting (e.g., the simulation of business processes within an action oriented and collaborative learning environment). The basic business services provided by the (Austrian) central office such as online-banking services are a precondition for the PE-work aligned with these three columns (ACT – Austrian Center for Training Firms).

Figure 2: Teaching and learning within a smart practice enterprise

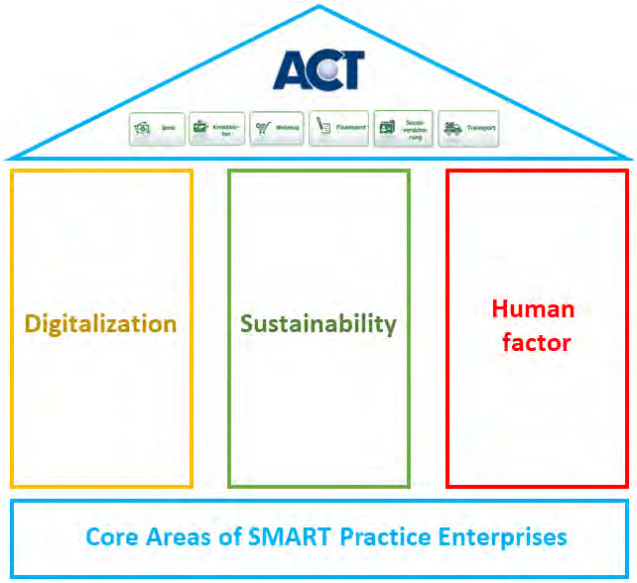

Figure 2. Core areas of a smart practice enterprise (ACT – Austrian Center for Training Firms, 2020b)

With regard to a collaborative distance learning PE-environment the three different columns might be described more closely via the following practical examples (Riebenbauer et al., 2018):

- *Digitalization*. Digital media and tools are widely used within PE-team meetings and internal work processes. Students can access all files and the necessary accounting software via remote access. The individual teams use digital tools (such as Trello[5]) to coordinate the work process within their teams. The weekly meetings might be held online via the use of video conference software (e.g., Skype for Business, MS Teams, Zoom). All work results are stored digitally and are accessible for all PE-members, technically leading to a paperless office. Furthermore, learning and working in the digital setting of the practice enterprise prepares for digitally supported work processes in the world of work 4.0 (Retzmann & Yilmaz, 2021).
- *Sustainability*. Sustainability refers on the one hand to an ecological sustainability (e.g., reducing the real CO2-footprint of the PE-course via introduction of an almost paperless office, but also on a simulated level by offering environmental-friendly products to other practice enterprises). On the other hand, the issue of sustainability also refers to the implementation of sustainably learning processes for all students (e.g., via written reflection reports, portfolios or learning diaries).

[5] For further details about the tool Trello: https://trello.com/

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- *Human Factor*. Aside from the quite technical-related aspect of digitalization, the aspect of the human factor in PE-work specifically addresses the students both in their role as employees in the practice enterprise and as learners. From an employee perspective, the introduction of a profit center organization allows for a swifter reaction to changing market demand and for quicker decision processes within the different profit center teams. Giving the learners (in their role of PE-employees) more autonomy has also proven to increase employee satisfaction. From a learner perspective, the individual learners get in touch with more different aspects of the national and international PE-work, thus increasing the learning outcome for the individual students.

Generally, the international PE-economy with thousands of participants worldwide has a high potential to illustrate complex economic relationships between the learners and as a consequence, the PE-method represents one of the most complex business simulations (Tramm & Gramlinger, 2006). However, because of the simulated nature of goods and services, the PE-market lacks some features of real markets or economies. First and foremost, the demand on the PE-market does not solely arise from real economic needs of the participants and therefore, aspects such as offering a range of ecologically sustainable products or increasing cost efficiency through digitalization are not automatically of importance. Teachers must purposefully address these issues and include them into their didactical settings. Therefore, all three columns of the smart PE-project (digitalization, sustainability, and the human factor) should be the object of the PE-teacher´s modelling activities.

Practical examples for the digital collaboration based on the PE-activities at the University of XXX

To create a better insight how practice enterprises function as teaching and learning settings and how digitalization is achieved in this context, some practical examples of the PE-courses at the Department of Business Education and Development at the University of Graz are introduced. The department hosts the two innovative practice enterprises KFUNI*line* (established in 1996) and eXpand (established in 2004). KFUNI*line* is organized in regional profit centers and provides further education mainly for the Austrian PE-market. eXpand International Consultancy is an English-speaking practice enterprise, which also acts internationally and offers consulting services and international market analyses. Its organizational structure consists of the following processes and departments: Consulting & Sales, Learning Point, Accounting, Monitoring & Support, Marketing and Management. About 15 to 20 Master students are usually registered per company and are working together in these teams (Department of Business Education and Development, 2020). A PE-office is provided on campus and the students are flexible with their time-management because of free access to the PE-office (24 hours/7 days). Furthermore, the practice enterprise work is accompanied by weekly meetings, which last about 3 to 4 hours. In the meetings e.g., general agreements, business and learning goals, organizational issues, financial reports, and total quality management topics are discussed. Space for ongoing reflection is also created to support the learning processes of the students.

With the COVID-related lockdown most Austrian practice enterprises changed to distance learning in March 2020. Therefore, many of the aspects addressed by the Smart-PE-project became relevant for PE-work from at-home not only because of a modelling perspective (e.g., by trying to incorporate the aspect of digitalization for preparation for future working fields) but because of the current demand of

ISSN 2164-2877 (print)
ISSN 2164-2885 (online)

working digitally and remotely. At the University of Graz, the steps previously taken towards digital collaboration within agile teams and a paperless office proved to be of high relevance to ensure the continuation of the daily PE-work. Due to the measures of digitalization taken in a situation prior to distance learning (when there was no real need for remote working within a PE but just the intention to provide a realistic working environment), it was possible for the students to continue working and learning without any substantial adjustment to the teaching and learning setting. The meetings moved online and the working from the PE-office moved to the home-office supported by digital collaboration tools (such as video conference software) and with remote access to all data and software.

Although some issues had to be overcome in these challenging times, many valuable experiences had been generated for students and teachers. As a higher education institution, the University of Graz has tried to take a supporting role especially for vocational education schools by implementing and emphasizing special highlights into the online practice enterprise environment. Two initiatives respectively projects specifically stand out, when it comes to demonstrate digitalization and digital collaboration shown on the example of the PE-work at the University of Graz:

- Within the project *HEIPNET (Inclusion of Innovative Work-Based-Learning and Business Partnerships in HEI Curricula Development)* the internationalization of PE-work and the collaboration of PE-teachers in higher education settings were fostered through a series of digital exchange events.
- The *Online Trading Day (OTD)* represents a virtual PE-fair held online via video conference software. This event was organized by PE-students in Graz and promoted trade between national and international practice enterprises.

HEIPNET (Inclusion of Innovative Work-Based-Learning and Business Partnerships in Higher Education Institution Curricula Development) is an Erasmus+ funded project specifically addressing issues related to practice enterprises situated at higher education institutions (HEI). The aim of the project is to integrate and combine academic knowledge of experienced PE-teachers at higher education institutions with the teachers' practical experience. Via a series of intellectual outputs (e.g., manuals for ongoing PE-teacher, PE-database), the concept of practice enterprise would be promoted and adapted to curricula of higher education institutions throughout the European Union. In addition, strategic links between practice enterprises and potential mentoring companies should be built (PEN Worldwide, 2019). For this purpose, the Department of Business Education and Development at the University of Graz is collaborating with seven different partner institutions from Lithuania, Italy, Bulgaria, and Germany. The link to the international PE-community is ensured via the participation of PEN Worldwide.

Over the duration of the project (2019–2021), PE-students of the master's program of Business Education and Development at the University of Graz are actively involved in the project. The students' activities are embedded in the didactical design of the PE-course with focus on enabling the students to experience a *complete learning cycle* (Peterßen, 2009). Within each project activity they are involved in, students consecutively execute the following steps independently:

(1) *Purposing and Planning*. Students are actively involved in the planning activities (e.g., related to the preparation of a transnational meeting or evaluation activity for a project output).

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(2) *Execution*. Within a next step, students are responsible for the execution of their planning. This might involve the moderation of an online transnational meeting, the cooperative creation of intellectual outputs, the organization of a round table for evaluating project outputs or the participation in (online and on-site) student exchange activities.
(3) *Judging (Evaluation and Reflection)*. After the successful execution of their activities, students are also involved in evaluating the impact of their activities (e.g., via quality surveys sent out to the participants of transnational meetings) and reflect upon their learning using digital tools.

Currently, not only PE-students are involved in these HEIPNET project activities but also students who are writing their master's thesis in project-related topics. Due to COVID-related travel restrictions for the predominant duration of the project, collaboration between the project partners (as well as collaboration with the students) took place primarily online. Due to the online nature of these meetings students could easily be integrated into this international project without the necessity of vast travel activities. Thus, the (COVID-induced) digital collaboration has proven to ensure additional learning opportunities for the students (through the close integration into all project activities which enabled the students to go through a complete learning cycle) which would not have been realized without a highly digitalized project execution. For the upcoming semester, a digital student exchange is planned as part of the project. In addition, some practice enterprises involved in the project also participated in the Online Trading Day.

Online Trading Days as virtual PE-fairs try to connect practice enterprises from all over the world. The idea of this online format is based on a former initiative of the IVE – Institute for Virtual Enterprises at the City University of New York and it aims to "provide students with an interactive venue where they can present their simulated businesses through web-based conferencing technology" (Winkler et al., 2015, p. 9). Because of the COVID-related transition to distance learning, it was not possible to attend national and international PE-fairs on-site anymore. Therefore, the practice enterprises at the University of Graz decided to revive this online event because of two main reasons. The first goal was to stimulate the PE-economy and to foster exchange and trade between national and international practice enterprises, especially in times of declining revenues. The second goal was to offer to the PE-students in Graz a challenging semester highlight where they could develop and demonstrate entrepreneurial skills respectively comprehensive business competencies.

The students' activities for organizing and participating in the Online Trading Day (OTD) around the learning cycle can be described as follows:

(1) *Purposing*. PE-students and teachers agreed to attract many practice enterprises from Austria and from abroad to intensify existing and create new business connections. Another common goal was to gain practical experiences in managing an online event.
(2) *Planning*. The students decided to organize the OTD in December 2020 using the video conference software Skype for Business. Several milestones and measures were planned and discussed with colleagues and teachers during weekly PE-meetings. Different teams were responsible for the procedure and the promotion of the OTD, e.g., using PE-networks for inviting other practice enterprises, preparing social media presence, creating a promotion video,

ISSN 2164-2877 (print)
ISSN 2164-2885 (online)

planning timeslots and sales promotion as well as carrying out technology checks for participants.

(3) *Executing*. After two months of planning, the students put their plans into action by dealing with several time zones and by performing several roles on this OTD. Some students acted as moderators and hosted the different sessions following a prepared agenda. Others introduced the strategy, products, and special offers of their own practice enterprise to the audience and answered upcoming questions spontaneously. Another group took on the role of consumers and was in charge of purchasing from the other participants via web shops and simulated credit cards.

(4) *Judging*. After the sessions, the success of this OTD was evaluated from a business and a learning perspective by collecting feedback from colleagues, teachers, and participating practice enterprises with an online survey. At the end, the students analyzed the responses, reflected their learning outcomes, derived suggestions for improvement for the next event and reported the results to several stakeholders.

The business facts and figures show that this Online Trading Day was very successful and initiated additional interactions and cross-national trading because 428 participants were involved in five German- and four English-speaking sessions and 57 presentations were held from 48 different practice enterprises from eight different countries (Austria, Bulgaria, Germany, Italy, Netherlands, Slovenia, Turkey and even Indonesia). Trading between members of different sessions was enhanced and encouraged by creating an online shopping platform in form of a Padlet (a digital pinboard), where the practice enterprises posted their logos and links to web shops and social media channels (Department of Business Education and Development, 2020). The students' reports also comprise lessons learned and comments on the experiences made. Some statements referring to this are as follows:

- "It was really interesting how every single practice enterprise is individual and is organized differently. You never have such a good insight by just scrolling through the web shop – it was so interesting to see the persons' behind every company and to keep up discussions with them."
- "The moderator did a really good job to lead the discussion and to encourage interactions."
- "I think that eight practice enterprises per slot are too much for one hour – six should be the maximum."
- "When they don't have a structured and easy-to-handle web shop, it is difficult to shop there."
- "Some of the presenters really put a lot of effort in their appearance – with clothing, their presentation and the way they behaved."
- "It was another great PE-experience."

The PE-students realized that keeping the PE-market lively and managing the pandemic situation was not an easy task now. However, this OTD showed them that even though the participants were working from different countries and in different sectors, they all had one in common: They wanted to learn, to grow and try to do the best for their practice enterprises. The above stated students' quotes allow deeper insights into students' attitude towards the method of PE in the context of the digitalization efforts during the first COVID-19-lockdown. However, the intent of these quotes is not to substitute a large-scale study, but to solely give insight into experiences during the first stage of the COVID-19-lockdowns.

ISSN 2164-2877 (print)
ISSN 2164-2885 (online)

To identify changes in teaching and learning caused by COVID-19, a research project was started at the University of Graz. It uses a mixed-method-design with interviews, focus groups and an online-survey to cover the students´ and teachers´ perspective on digital teaching and learning in times of COVID-19. Initial findings from interviews with 16 PE-students in December 2020 also include experiences regarding the practice enterprise courses. The students report on both – challenges and opportunities of the PE-work.

When it comes to challenges, working and digital collaboration in the practice enterprises are highlighted. The difficulties are seen in the stable remote accesses to bookkeeping systems and shared PE-data, especially in the initial phase of the transition to distance learning (interview 34, 451–458). On the other hand, it was stated that working in the practice enterprise went very well and that accessing the programs and external drives from the home office were not a problem after a while. The advantage of flexible time management is emphasized, as work could be done from at-home at any time, and it was not necessary to travel specifically to work from the PE-office at the university. Additionally, the joint meeting once a week was seen relevant to discuss ongoing topis and to collaborate (interview 38, 52–58).

Furthermore, not only pure distance learning was held in the PE-course, but also hybrid settings were tried out during Covid-19. For example, one part of the students was on site and one part was online and simultaneously connected from at-home. Especially the students who participated in presence appreciated the pleasant atmosphere and claim that they could participate more actively in the course on-site and that the attention is much higher than when participating in hybrid events online (interview 42, 259–271). One respondent sees opportunities in hybrid settings as follows: "I find this mixture of presence and online very good, because nowadays you can no longer assume the classic student who just studies. But there are also working students or even older students who already have families and can better combine work and family through the online settings." (Interview 41, 233–244)

Conclusion

This paper focusses on the multidimensional teaching and learning settings of practice enterprise and deals with the consequences of digital transformation and the COVID-related shift to distance learning for the practice enterprise environment. This sudden change from the PE-office on campus to the individual office at-home provoked substantial challenges but also new opportunities for both – students and teachers. The first challenge affected the matter of digitalization, and corresponding initiatives like the ‘SMART Practice Enterprise’-project are accelerated, and their importance has increased. With distance learning many technological issues occur and must be solved such as the need for remote channels, access to databases and shared files as well as the use of new digital tools and communication software. This technical aspect and IT support were very crucial at the beginning. Therefore, the teacher’s role as a designer of an adequate learning and working environment gets even more relevant than before. This opens the chance to rethink the didactical design as a framework for a multidimensional teaching and learning setting and to develop new teaching strategies to overcome existing and future learning barriers (see the suggestions offered by Turner & Mulholland, 2020). Even practice enterprises without the willingness to change had to rethink their design and PE-model – the

ISSN 2164-2877 (print)
ISSN 2164-2885 (online)

emergence of COVID literally forced all practice enterprises to scrutinize structures and processes and to modernize and digitalize their work procedures respectively.

Working in different expert teams and collaborating digitally is closely related to how the reality of the students' future work environment will look like. This offers a high potential for a realistic learning environment and has a positive impact on the students' employability. With the European project (HEIPNET) and the Online Trading Day two practical examples are described to show how cross-national collaboration between students can be promoted in a complex and realistic online environment in Business Education. Home-office and distance learning offer more flexibility in terms of time and location, but the question of how this will be handled after the crisis remains open. First results from 16 interviews with PE-students suggest a hybrid setting for future PE-courses with alternating participation on-site and online. Remaining distance learning will demand certain competencies, especially the students' self-organization, IT skills, communication, and collaboration skills, but also their motivation and resilience. This leads to questions for further research. Besides positive feedback directly on the two PE-highlights introduced in this paper, there is an ongoing study running at the University of Graz. It focuses on these current challenges and opportunities and aims to answer questions, e.g., how do students and business educators perceive this change to distance learning, what are their coping-strategies to overcome distance learning-related difficulties, what kind of support do they need. This study also aims to gain suggestions for a further development of the didactical and methodical approach of courses in general and of multidimensional teaching and learning settings such as practice enterprise.

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