

*Original Paper*

# Reskilling within Digital Lifelong Learning and Entrepreneurship in Vocational Education

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## ***Abstract***

Covid-19, following recession in 2020 and digitalization have created uncertain labor market and required rapidly change of work and education. The period of opportunity to reskill workers i.e. to have digital skills and other ones which are necessary in job and life has become shorter due to the newly constrained labor market. Education is an important component of poverty reduction efforts and economic and social development. The use of digital approaches in entrepreneurship education is necessary to prepare students for technological change, particularly digitalization nowadays; until now a digital based entrepreneurship education curriculum has seen as critical. Lifelong education is a key factor for improving knowledge, competence, working possibilities and the quality of life. The intensive use of digital technologies during the Covid-19 crisis and after it is a substantial impulse for entrepreneurship education and digital lifelong learning, i.e., lifelong learning via e-learning platforms. This paper firstly presents some requirements for entrepreneurship education to cope with disruptions due to Covid-19 and requirements like the use of digital technologies and reskilling of employees. Secondly some digital approaches within lifelong learning and learning methods used within entrepreneurship education are given as well as some examples. Conclusions and recommendations are proposed.

## ***Keywords***

Reskilling, Digital technologies, Entrepreneurship education, Digital lifelong learning, Reflective practice, Intentional learning, Problem-Based learning

## **1. Introduction**

Lockdowns and following global recession of 2020, due to Covid-19, created uncertainty within labor market and required rapidly change of work. In addition to the current disruption from the lockdowns and company economic difficulties, the adoption of new technologies, particularly digitalization by

companies which will transform tasks, jobs and skills by 2025, skill gaps produced a triple disruption (<https://www.weforum.org/press/2020/10/recession-and-automation-changes-our-future-of-work-but-there-are-jobs-coming-report-says-52c5162fce/>). Covid-19 crisis showed the importance for people to have digital skills and other ones for strategic sectors. Digital skills are necessary both in people's daily lives and for business continuity. Home-office and distance learning have become quickly a reality for millions of people in the EU, but the gap of current digital skills of people within work and life are evident. Currently, at least 85% of jobs require digital ability, only 56% of adults had at least basic digital skills in 2019 ([http://www3.weforum.org/docs/WEF\\_Future\\_of\\_Jobs\\_2018.pdf](http://www3.weforum.org/docs/WEF_Future_of_Jobs_2018.pdf)). The period of opportunity to reskill workers has become shorter due to the newly labor market requirements. The recent Skills Agenda of the European Commission (<https://ec.europa.eu/social/main.jsp?catId=1223&langId=en>) focuses on necessary skilling for a job. Some of the objectives are:

- a clear strategy to ensure that skills lead to jobs;
- helping people build their skills throughout life in an environment where lifelong learning is the norm;
- setting ambitious objectives for up- and reskilling to be achieved within the next 5 years.

It is important to understand in which skills people and companies should invest in order to prepare for a future economy that will require new tasks and competences. Missing skills, i.e., refer to mastering the green and digital transitions. There are collected and available data, but not in an integrated way or in a format that is accessible to people to inform about training requirements. Artificial intelligence and big data analysis should be used in this context, because they have great potential to identify the skills needs of the future in addition, i.e., to statistics and employer or sectoral surveys ([http://www3.weforum.org/docs/WEF\\_Future\\_of\\_Jobs\\_2018.pdf](http://www3.weforum.org/docs/WEF_Future_of_Jobs_2018.pdf)).

Education is an important component of poverty reduction efforts, economic and social development. The COVID-19 pandemic has caused a big disruption of education having impact on learners and teachers around the world and all forms of entrepreneurship education and training, universities, skill development organizations.

In technical and vocational education and training (VET) systems, low levels of digitalization and structural problems are more evident by the crisis. Disruptions in work places and temporary closed companies due to Covid-19 made it difficult to implement apprenticeship schemes and work-based learning modes, which are key elements of a functional and market-oriented VET system.

The Commission's Proposal on a coordinated approach in response to the COVID-19 pandemic for sustainable competitiveness ([https://ec.europa.eu/info/sites/info/files/council-proposal-coordinated-approach-restriction-movement\\_en.pdf](https://ec.europa.eu/info/sites/info/files/council-proposal-coordinated-approach-restriction-movement_en.pdf)), social fairness and resilience aims also to following objectives within vocational education and training:

- modernize vocational education and training in the EU, adapting it to a more digital and greener economy;
- ensure that vocational education and training is agile, adapting swiftly to labor market needs and providing quality opportunities for young and adults.

The use of digital learning within education has advantages in comparison with face-to-face learning, i.e., because many learning opportunities are created. It changes where and when one learns, eliminates or at least reduces barriers to accessibility by creating virtual spaces and the possibility to learn at any time. It increases the potential number of learning partners, i.e., within digital networks. Digital learning improves knowledge production, assimilation and its using.

Lifelong education is a key factor for improving knowledge, competence, working possibilities and the quality of life. It is an important educational paradigm particularly discussed in the last decade also due to SDGs, complex business environment and digital requirements. Lifelong learning is important for the individuals who would like to increase their knowledge and skills and so also their employability for future jobs. For organizations it is an important source of innovation and helps to keep up with the changes in their environment and be attractive for employees. Within society, lifelong learning increases the possibility to find solutions for problems such as poverty, inequality and climate change. So lifelong learning could bring an important contribution to work and life, but it seems that it remains an often-misunderstood concept about its role within the transformative vision promised within the SDG4, translated into concrete policy actions (<https://www.norrag.org/lifelong-learning-in-sdg4-a-transformative-vision-or-just-another-passing-fad-by-maren-elfert/>; Hamburg, 2020a).

The intensive use of digital technologies during the Covid-19 crisis is a substantial impulse for digital lifelong learning, i.e., lifelong learning via e-learning platforms.

This paper firstly presents some requirements for entrepreneurship education to cope with disruptions due to Covid-19 and requirements like the use of digital technologies and reskilling of employees. Secondly digital approaches within lifelong learning and learning methods to be used within entrepreneurship education are given as well as some examples. Conclusions and recommendations are proposed.

## **2. Covid-19 and Entrepreneurship Education**

Entrepreneurship is an economic engine in a country and entrepreneurship education supports transfer knowledge in developing entrepreneurial competence. It is “the process of designing, launching and running a new business” (Hsieh & Wu, 2018) oriented to new value creation and more than starting up a new business. Entrepreneurial activity is based on connections of institutions (e.g. education or business development), stakeholders and entrepreneurs themselves (Kraus et al., 2018).

Entrepreneurship education programs should give students practical knowledge to act in an entrepreneurial manner; it fosters entrepreneurship culture and activity, provides key skills to identify a

new business. Skills as collaborative, communicative ones and critical thinking, appreciated by employers, can be achieved during the entrepreneurship education.

In last years, particularly due to Covid-19, digital technologies have been adopted at all levels of education; they open innovation opportunities for entrepreneurs (Rippa & Secundo, 2020). New opportunities arise, some digital technologies support economic growth but create also competitive turbulence and destruction due to required institutional change (Geissinger et al., 2018).

The use of digital approaches in entrepreneurship education is necessary to prepare students for technological change, particularly digitalization nowadays; until now a digital based entrepreneurship education curriculum has seen as critical; there has been more investment in work skills that in the use of digital technology within entrepreneurship education. Problems associated with using digital technologies education are quality of the resources and materials supporting online learning, the interaction of students and academics, the high fees charged by premier online courses, and difficulties with assessment and accreditation (Vorbach et al., 2018).

But digital technologies support the building of student partnerships and networks with their peers, entrepreneurial educators, and the business communities. Students can develop own projects and use digital tools to learn entrepreneurial skills such as business feasibility and market research. Skills required in the workforce could be achieved and so the gap between education and job skills needs will decrease. Requirements derived from the digital age and the fact that due to the rapidly changing world, individuals need to be reskilled to achieve necessary skills. Not only digital ones have to be considered in this context but also digital lifelong learning should be promoted to help students to acquire skills like creativity, critical thinking needed in the digital age both for work and life.

Covid-19 created a big education disruption due to the severity of its effects but it offers also a chance to transform this disruption into an innovative one. Disruption in the education requires better service models for improved educational program quality; it means redefining quality in a much more complex and inclusive world of knowledge than within the existing educational models (Christensen et al., 2008; Hamburg, 2020b). To contribute to an innovative disruption in education, educators need to be innovative and use this unique opportunity to change the existing methods within entrepreneurship education also in VET institutions. They should rethink their existing teaching methods to incorporate more digital technology, to increase the role of different stakeholders (students, government, industry, professionals, community) in co-creating value (Ratten, 2020). Traditional teaching is more effective at communicating information than supporting the development of skills, the value of digital learning should be greater when it is teacher-centered pedagogy. But teacher centered pedagogies that lack commitment or interaction lead students to adopt a passive attitude to learning and not taking responsibility for their own learning. Often teachers can not differentiate the pace and the teaching when is less of interaction to adapt to the different progress of learners (le Roux & Nagel, 2018). It is necessary to find new mods and tools to support interaction with and between to be used, including blended and asynchronous learning that enable a mixture of digital and face-to-face content—if it is

possible. Even after the Covid-19 pandemic this mix of methods will be necessary (Kirk & Rifkin, 2020). Digital methods enable the creation of authentic learning environments for students that support entrepreneurship. In addition, because industry relevant education is needed for entrepreneurship, more VET-industry collaboration is necessary. Students will be better prepared for the workforce due to their digital skills and such collaboration.

Due to the isolation during Covid-19 the social interaction is missing so educators tried to provide a way to connect people. Many students lost their jobs and it is necessary that classes provide necessary care and interaction. Teaching styles have to take into account social distancing so the use of online lectures needs to use interactivity approaches such as student polls and real-time feedback; collaborative digital learning within community participation is required. Open innovation should give students more autonomy and choice of how they learn in an online environment.

Digital competencies and entrepreneurial mindset needed for the modern working world can be developed also within VET by using methods like the following:

- Reflective practice, including critical reflection helps learners to gain awareness of their implicit knowledge base (Brockbank & Mc. Gill, 2006). It is a form of education in which the student reflects upon their learning experiences. It recognizes the role of social context and experience.
- Intentional learning gives learners the opportunity to learn new concepts and skills through practice-difficult during Corona-19 pandemic time. In contrast to latent or incidental learning, intentional learning is motivated by intentions and is goal directed. Bereiter and Scardamalia (1989) use the term *intentional learning* “to refer to cognitive processes that have learning as a goal rather than an incidental outcome” Intentional learning addresses the content of learning and its end product, as well as the learning process itself.
- Problem-Based learning (PBL) where students learn actively by solving real problems and are responsible for their learning paths (Hmelo-Silver, 2004; O’Brien et al., 2019).
- Project-Based Learning (PjBL) where students follow steps of project management (Brassler et al., 2017).

The integration of technology within PBL and PjBL is difficult; staff and students possess a complex array of different teaching and learning capabilities (Donnelly, 2010) but together they are complementary to learning. By supporting these methods through collaborative digital tools, educators can create active learning environments that enhance student teaching (Taradi et al., 2005). It facilitates the student flexibility of exploring concepts and acquiring skills through the digital learning process, creating new problems, finding solutions.

Digital PBL and PjBL are innovative teaching and learning methods, incorporating i.e. images into intense, interactive teaching sessions. It is not used in entrepreneurship education until now; we tested it within a European project addressed to entrepreneurship education and training in VET.

### 3. Example

The Study Group Lifelong Learning of the IAT, coordinated by the author, developed in cooperation with entrepreneurship educators from VET and higher education, research institutions from five European countries a digital program supported by a platform for entrepreneurship education within Vocational Education and Training (VET) institutions and adapted training for SMEs employees with modules for mastering some lifelong skills (Hamburg, 2020a). Besides digital skills other lifelong learning skills which have been learned by using the learning modules within VET:

- Creativity
- Critical Thinking
- Leadership
- Communication skills
- Collaboration skills
- Adaptability
- Curiosity

The used methods are Problem-Based Learning (PBL) and Project-Based Learning (PjBL). Within PBL learning, the students followed eight steps, by working in groups. At the beginning a problem has been presented. By using a digital software integrated into the project digital platform, eight steps to find a solution have been demonstrated. Then each group formulated own problem and tried to find a solution by using the platform. They used reflective learning, i.e., about the own projects; it was something new for them. Because during two months the VET institution was closed due Covid-19, the work within the groups was not so successful, like planned. In the last months each group could formulate own statement. The groups received feedback from e-mentor and e-tutor.

Within Project-based learning (PjBL) the students followed steps of project management digital supported. Students have been encouraged to work with known employees from companies where they work or make practice, but it was difficult some months due to closures. So this cooperation was not very successful. Both methods PBL and PjBL support collaborative work in team or with other partners/communities, understanding of real-life and of work problems. Both methods have been positively evaluated and useful for participants in their jobs or lives. Also the digital competences achieved through the digital learning modules have been evaluated as useful.

### 4. Conclusions

The COVID-19 crisis and the caused disruption of all forms of education continue so that in order to prevent this learning crisis to be a generational catastrophe, urgent actions from all responsible are required. Education is a fundamental human right, a global common good and a primary driver of progress across SDGs. Digital technologies are changing the way people do business or start new ones. Providers of entrepreneurship education tried new initiatives to realize new forms of it and to apply adequate methods particular digital technologies. More competences, digital platforms and methods,

management concepts of digital education are required. Research work about how digital technologies will change entrepreneurship processes and corresponding education is necessary. It can be done, i.e., within studies or projects. It is to explore how to teach entrepreneurship to support digital lifelong learning process and SDGs taking into consideration participants' perspective, new form of work and business. Innovative structures in VET should be created to ensure social distancing and education for all (Hamburg, 2020b).

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