

Social Measures And Disruptive Innovations In Entrepreneurship Education To Cope With COVID-19

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ABSTRACT

Entrepreneurship education (EE) can increase students' entrepreneurial skills and intention but research results and experience show that entrepreneurship education still pursues conservative models, rather than forward-looking ones. The COVID-19 pandemic influenced all types and levels of education and training including entrepreneurship one. The article suggests several measures to be taken, also social ones, as a result of COVID-19 and how entrepreneurship education can be improved in order to support innovations and to be available for all. Advantages of an interdisciplinary perspective in EE and of mentoring as well as contribution of disruptive innovations at EE improvement are presented. An example of a European project in this context with contribution of the author and conclusions are given.

KEYWORDS: Entrepreneurship education (EE), Covid-19, Disruptive innovation, Interdisciplinarity, Mentoring, Social measures

INTRODUCTION

Many powerful digital technologies, digital platforms and digital infrastructures transformed both innovation and entrepreneurship in the last years having organizational and policy implications also disruptive ones. New business models, new types of products/services, new types of customer experiences require for educators, students, companies, their employees new learning methods to be successful in the emerging digital world. Entrepreneurship education (EE) can increase students' entrepreneurial skills and intention; and entrepreneurship activities stimulate economic growth. However, research results and experience show that entrepreneurship education still pursues conservative models, rather than forward-looking ones. The COVID-19 pandemic influenced all types and levels of education and training including entrepreneurship one. The article suggests several measures also as a result of COVID-19 and how entrepreneurship education can be improved in order to help solve the pandemic. More entrepreneurship education research embedding a COVID-19 context is required. With the abrupt shift from in-person connection to isolation and online learning, particularly students with special needs need more community-building and engagement platforms than ever before and so COVID-19 becomes an opportunity to improve learning and student engagement long term, rather than simply managing a temporary disruption. Advantages of an interdisciplinary perspective in EE, mentoring as well as contribution of disruptive innovations at EE improvement are presented. An example of a European project in this context with contribution of the author and conclusions are given.

ENTREPRENEURSHIP EDUCATION AND COVID-19

Due to new technologies and new forms of work, there are many innovations within entrepreneurial landscape that reciprocally support development of progressive modes of production, technology and business dynamics. Interdisciplinary and transdisciplinary are integral parts of the technological innovation cycles and they bridge the gap between research, industry and education (Ehlen, 2015). Such advancements and new or changed forms of entrepreneurship, work and workplaces require for educators to prepare future entrepreneurs not only to develop and use different forms of innovation but also to cope with unprevisible crisis like COVID-19 pandemic which starts this year.

Entrepreneurship education is an important way to support competitiveness of countries etc. so special opportunities in the COVID-19 pandemic to progress to a more competitive and inclusive educational environment (Liguori & Winkler, 2020) in all domains are necessary.

Due to the COVID-19 pandemic generation of learners, also future entrepreneurs, have seen their usual education and training processed disrupt (D'Órville, 2020; Hamburg, 2020a). The COVID-19 pandemic was unpredictable and a surprise (World Economic Forum, 2020) and countries can respond to the COVID-19 crisis depending on their regulatory policies. Unfortunately, the COVID-19 pandemic is global whereas previous pandemics have been largely focused on specific areas (He & Harris, 2020) and easier to manage.

Also during the pandemic, it is necessary that students could continue their studies in a suitable environment, because some classes and courses have been cancelled. This continuity in education was needed particularly in terms of ensuring students course progression (Jones et al., 2018).

The COVID-19 pandemic represents also a unique opportunity for educators and entrepreneurs to transform existing practices which do not cope with last entrepreneurial innovations. Education industry bring an important contribution by moving online in a short time period, which enabled students to continue their studies but also enabled educators and students to learn through online courses.

Educators and other employees in the education sector need to be strengthened in terms of the autonomy and independence they have in making decisions (Hahn et al., 2020) by teaching and mentoring employees about new business ideas. In times of a crisis some degree of improvisation with educational methods that incorporate entrepreneurial thinking is needed (Krishnamurthy, 2020).

Entrepreneurship education is often defined as study that teaches skills to start and manage a business for growth (Mentoor & Friedrich, 2007). Entrepreneurship education (EE) should provide students with the knowledge, skills and motivation to encourage entrepreneurial success in a variety of innovations, including disruptive ones. Already before the crisis, EE did not meet (meet) these innovations i.e. by providing entrepreneurial-driven knowledge, skills and abilities (i.e. agile, creative mindsets, supporting the implementation of such innovations into entrepreneurial business (Matlay, 2008).

NISOD Papers redefines entrepreneurship to be inclusive of all disciplines and provide best practices for implementing entrepreneurship with an interdisciplinary approach (Langemo, 2018). But many entrepreneurship courses are offered to students/employees only to a specific field even though interdisciplinary is important for entrepreneurship.

There exist theories and pedagogical approaches promoting interdisciplinary learning, but it seems that current academic organizational structures support instruction that compartmentalizes disciplines, instead of providing students with the tools for integrating knowledge (Salomon, 1991).

Some authors present challenges that have emerged in research, to be embedded in new educational modalities (Kyrö, 2015; Lima et al., 2015; Nabi et al., 2017). They refer to changing the vision of education to a meaningful experience, embracing more digital learning and virtual reality, embedding technology in the educational eliminating the limitations of time difference, distance, or learners' level of knowledge in class, combining fields and expertise to formulate new courses and programs. In the COVID-19 environment course content can be improved to reflect new environmental contexts not changing the course goals depending on the entrepreneurial intent (Iivari et al., 2020).

To understand the link between entrepreneurship education and intentions, different theories can be applied (Secundo et al., 2020). Human capital theory proposes that individuals will study entrepreneurship as a way to build their business skills (Ratten, 2020; Ahmed et al., 2020; Clark et al., 2020). This means individuals acquire certain skills and knowledge by studying certain subjects. Unger, Rauch, Frese and Rosenbusch (2011) suggest that human capital is linked to entrepreneurial success as individuals acquire more practical training.

DISRUPTIVE INNOVATION AND EE

EE, as well as other education forms, needs disruptive innovation because it has the capacity to improve it and its outcomes if educators embrace an entrepreneurial, free-market mindset (<https://fee.org/articles/education-entrepreneurs-are-the-only-ones-who-can-disrupt-the-status-quo/>).

Clayton Christensen, expert on “disruptive innovation,” refers in his books to education. According to Christensen’s disruptive innovation theory markets are disrupted when new entrants find an innovative way to provide a “simpler” product to a wider set of buyers at a more affordable price (Christensen et al., 2008). Through cooperation and new ways of thinking educators and entrepreneurs could replace an old schooling model of education. Some aspects in entrepreneurship education and training where disruption can contribute with improvements are presented below (<https://www.christenseninstitute.org/blog/how-disruptive-innovation-addresses-3-of-educations-most-critical-issues-today/>) i.e. that disruptive innovation is the catalyst for more equitable access of tutors and of mentors and the mechanism for creating a personalized education system.

Economic, cultural and personal areas have undergone an enormous transformation over the last 50 years, but education systems have not modified their syllabuses and their objectives (washingtonpost.com). Curtis Johnson, co-author of the bestseller *Disruptive Class: How*

Disruptive Innovation Will Change the Way the World Learns, (Christensen et al., 2008) explains that the current form of teaching "is unable to provide today's pupils with the skills they need to master in order to interact with and within the digital society" and so a disruptive education is necessary that approaches learning in another way. Education leaders need to do their own critical thinking about formulation of "disruptive innovation" in the education segment.

Disruption in education is not about replacing the low end of a well-defined product (<https://www.imsglobal.org/blog/201308>). It's about redefining quality in a much more complex world of knowledge than most current educational models. The next phase progress will be to go from current era of massification into a new era of more real world relevant and personalized educational pathways because massification of educational experiences will not bring success in the next educational models. Many of entrepreneurs and investors in the education do not understand that the era of massification of education exists since about 30 years in many developed countries without many progress. The disruption in terms of content also within EE will need content that enables educational experiences read "relevant", adaptive to the interests of the learner, easily adaptable by teachers and conform to teaching the educational foundation. Disruptive technology platforms for education will need to offer great diversity and inclusive facilities particularly for learners with special needs and within pandemic time.

Education facilities should support close partnerships among institutions as well innovative and inclusive tools. MOOCs have the potential to be disruptive as a new model for delivering "open university style education."

Referring EE, entrepreneurs often develop new products or services that change production and disruptive innovation has the potential to improve student outcomes also during their education (FEE, 2019).

Topics which could be learn in EE are (<https://www.genglobal.org/botswana/disruptive-innovation-and-entrepreneurship-masterclass>):

What is Disruptive Innovation and how to use it to create prosperity, Types of Innovations, How to create new markets, Assess new opportunities and potential threats, Barriers to creating new markets, Pull vs. Push Innovation Strategies, Discover Jobs to be done and develop frameworks to better understand customer needs, The key principles of market-creating innovations, How innovation created prosperity for many, Overcoming Innovation Barriers.

It is supposed that innovative disruptions particularly could be done by breaking boundaries for an interdisciplinary learning and mentoring approach.

INTERDISCIPLINARY ENTREPRENEURSHIP EDUCATION AND MENTORING

In order to be innovative, entrepreneurs as well as future ones need complex ways of thinking and ability to understand and integrate knowledge from different sectors. This requires a learning process in entrepreneurship education through which learners integrate insights and modes of thinking from a number of disciplines to advance their understanding of a topic which is beyond the scope of a single discipline within interdisciplinary learning (Boix-Mansilla et al., 2007).

Part of entrepreneurship education involves an interdisciplinary perspective that incorporates different study areas for a practical solution. It could be understood as a “collective of initiatives operating in universities, community colleges, vocational (or trade) schools, high schools and elementary (or primary) schools, that are held together by a common desire to develop in students a greater capacity for entrepreneurial agency” (Jones et al, 2018). Entrepreneurship education should emphasize on its real life suitability that reflects changing societal conditions and different needs.

Referring EE in companies, they must be able to organize interdisciplinary learning for their employee to develop innovative skills, to solve concrete problems and collaborate. It is known that a greater number of innovations are result from learning process organized within company. Studies have demonstrated that learning is positively associated with different forms of innovation in company (Kafetzopoulos et al., 2015).

The importance of interdisciplinarity from the perspective of research has been highlighted by LERU in a position paper “Interdisciplinary and the 21st century research-intensive university” (2016):

“The expertise of academic institutions is needed to develop interdisciplinary approaches that the dominant strain disciplinary science has been ill-equipped to provide. It is equally important for academic institutions to train students, the vast majority of whom will leave academia upon graduating, in these integrative approaches to enhance the capacities of governments, the private sector, media, NGOs, civil society, and others to use and implement them at all levels of society.”

The difficulty is that introducing a new entrepreneurship course to students who come from different fields of study and with different educational levels is complex and depends on the university/VET policies. But teaching entrepreneurship to students from different fields of study and with different levels of education has more advantages than teaching students from the same field of study and with the same level of education (Fiore et al., 2019).

Another aspect is that the impact of entrepreneurship education is connected with the student’s characteristics, including their field of study and educational level. Teamwork is necessary in entrepreneurship education and training in order to develop innovative ideas by using creativity, expertise and diversity of the teams’ combined knowledge (Dahlin et al., 2005).

EE is a complex services business in which quality is difficult to define, particularly in times of Covid-19. But innovative approaches, innovative methods and innovative formats are necessary, particularly in this time. Universities and other training institutions have a big role in disruptive innovations in EE and they have to adapt to changes i.e. by (O’Brien et al, 2019; Hamburg, 2020c):

- concentrating their efforts on the acquisition of skills and abilities adapted to the new reality rather than to concepts.
- using multidisciplinary learning: the frontiers between disciplines no longer exist and training must be adapted and content-rich to create far-reaching professionals. Methods like problem-based learning (PBL) should be used.
- Supporting digital innovation: many universities now have their own virtual areas for training, partnerships and shared knowledge purposes.

- building closer links with the job market: universities should become platforms for connecting companies and students and promoting the entrepreneurial spirit.
- Making competitiveness a priority: universities must be ever more competitive in order to transform themselves into research leaders and new knowledge areas.

It is known that mentoring can promote more individual learning, supports individuals to achieve personal and career competences to gain new professional development as self-knowledge, and to commit themselves to their personal and professional development in today's rapid pace of change

(https://www.researchgate.net/publication/279515191_Constructing_an_Interdisciplinary_Mentoring_Framework_for_ELT_Teacher_Education_and_Teacher_Development).

There is a growing body of research on mentoring outcomes in general but there is little research that examines whether mentoring helps shape entrepreneurial innovative intentions and behavior and research in the context of undergraduates' entrepreneurial careers (i.e. in VET), including how these functions then influence entrepreneurial outcomes (Souitaris et al., 2007).

One important problem for entrepreneurship education will be to connect mentoring functions with entrepreneurial development as a basis for the tailoring of interdisciplinary mentoring packages (Ragins and Kram, 2007).

Universities should develop such mentoring programs as part of a student support initiative to help i.e. students for early transition into careers. This is especially relevant given the growing focus on graduate employability and indeed entrepreneurship and self-employment across all areas of universities (Souitaris et al., 2007). It is known that mentoring is not very common in EE within VET institutions.

In connection with COVID-19, disruptive innovations in EE should be combined with better social oriented service models that are built around improved educational program quality for all.

SOCIO-ECONOMIC IMPACT OF COVID-19

have responded to the COVID-19 crisis depending on their economic and social policies but more social measures are necessary in all countries. COVID-19 pandemic has significant social consequences and it has been a career shock also for many EE students and educators. Most management educators had not considered a need to move rapidly to working and studying from home and in a digital environment.

Since the World Health Organization on March 11, 2020 declared the COVID-19 crisis a pandemic, there has been an enormous impact on all learners particularly those with social problems and disabilities.

The social distancing measures impacted a large section of the population who do not have the means to protect themselves against the virus requiring means and resources that a large section of the population lacks. Due to cancelled courses and practical placements for EE students, many learners do not have access to suitable learning and practice or they do not have the required skills to use digital technologies; a large number of learners from disadvantaged backgrounds or

with disabilities are missing education because they do not have access to the internet or the digital skills to take part in online classes.

This gap is seen particularly in EE within VET, across countries and between income brackets within countries. 95% of students in Switzerland, Norway and Austria have a computer to use for schoolwork but only 34% in Indonesia (OECD, 2020). Therefore, the pandemic will widened digital divide (UNESCO, 2020).

In Germany, the education ministers decided to financial support particularly within vocational education so that each teacher have a Laptop (Notebook) and each student an internet connection. To continue enabling and delivering value-creating efforts, learning leaders have to take a number of tactical steps they can consider to protect learners with social problems and/or disabilities, adapt programs and delivery, and establish and expand virtual live learning. On-line programs were already on the rise before COVID-19 and there is a marked increase in such learning programs, which many younger employees embrace but it should be available for all and educators have to be trained in this context (Hamburg, 2020c).

With the abrupt shift from in-person connection to isolation and online learning, students need more social community-building and engagement platforms which can be use also after students return for their classes in person. Educators and EE institutions play a key role in providing this. COVID-19 becomes an opportunity to improve learning and student engagement long term, rather than simply managing a disruption. Community and socialization humanize the classroom experience in order to promote increased student engagement.

Specific actions educators in this context include (<https://www.universityworldnews.com/post.php?story=20200504082923788>):

- Begin class with a check-in, where educators ask students how they are doing. They can be used also as an opportunity to model own uncertainties and vulnerability during this time as well.
- Publish a personalized institution profile with a photo on the course learning platform including more information about the educators and institution. It builds more trust and rapport between institution, educators, students.
- Share personal anecdotes and experiences within the course content. Students are more likely to reciprocate, request support outside of the classroom and maintain trust with their educators and peers.
- Educators should make a more intentional effort to follow up with students one-on-one. In online settings, students are less likely to seek help from educators. While small group activities may be common practice in traditional classroom settings, they are not used in the transition to online learning. However, during times of isolation, these platforms for student engagement need to be over emphasized rather than reduced or eliminated. Small group activities give students a platform to discuss questions about course material, and help students strengthen peer relationships and build connections within social distancing in a productive way. Educators should explore the features on their learning platforms that allow for smaller group engagement and utilize them on a regular basis.
- Create online coffee shops for students and educators to engage with one another and support each other in their challenges.

EXAMPLE

The European project Reinnovate with partners from Germany, Ireland, Spain, Lithuania and Romania, supported different forms of innovation and entrepreneurship learning (Hamburg et al., 2019; Hamburg and Vladut, 2019).

Research and digital skills were seen as significantly important with, 87% of SME identifying such skills as important or very important to their organization to grow and innovate, however there is a significant skills gap with 62% of SMEs having gaps. To address such gaps the Reinnovate consortium with education institutes and research organizations and chamber of commerce representative bodies developed and tested a training program for EE (Hamburg, 2019). The employees learn within a digital interdisciplinary program consisting of four modules (in all partner languages) developed within the project about different forms of innovation, how to be successful and are encouraged to develop and evaluate small innovative business models also disruptive ones.

An interdisciplinary mentoring program for entrepreneurs online and face-to face was planned within Reinnovate with mentors from university and research, which collaborate within the project. The project continues within the Coronavirus Crisis so entrepreneurs learned and interacted mainly by using the project digital platform (<http://www.reinnovate2017.eu/elearning/>) and e-mentors.

In order to provide best practices for implementing innovative entrepreneurship, a future entrepreneur should try to solve a problem, seeking a problem-solution fit that makes a connection (the first breakpoint) with the environment. So main used method is interdisciplinary problem-based learning (iPBL) and inquiry based learning.

Interdisciplinary Problem-based Learning (IPBL) which combines two teaching methods: Problem-based Learning (PBL) and Interdisciplinary Learning is a suitable approach for innovation (Barrows 2002, O'Brien et al., 2019). IPBL enhances students understanding of complex problems regarding social sustainability and facilitates interdisciplinary thinking towards an integrative perspective and a holistic approach to scientific and practical solutions. Inquiry based learning is a form of active learning that starts by posing questions, problems or scenarios. Inquirers will identify and research issues and questions to develop knowledge or solutions and is generally used in small scale investigations and projects (like these developed by learners), as well as research. The inquiry-based instruction is principally very closely related to the development and practice of thinking and problem solving skills. Learners are engaged in effective interactive content, interactive exercises in 'accountancy', find and use information and data. Project partners and tutors in all project languages offer personalized learning.

To create a comprehensive picture of how to adapt the training to COVID-16 environment, a cross-functional response team composed of members of the German partner responsible for the project and EE representatives has been formed. Because some people with cognitive disabilities and migrants wanted to undertake the training, we invited two persons with knowledge in this context. Therefore, the COVID-19-response effort was coordinated within the project. Two e-mentors and one tutor supported the training program. The tutor particularly supported the learners with special needs, i.e. with registration, simplification of some activities and exercises,

and e-mails to communicate more often with these learners. The developed program will be adapted with more inclusive facilities and offered within different EE courses. A new module about disruptive innovation will be included.

CONCLUSIONS

During the COVID-19 pandemic, VET institutions, and other education ones, had to address new issues, Massive efforts have made in a short time to respond to the shocks to education systems and showed that a change is possible. Disruptive innovations combined with social measures are necessary because the crisis has shown that no digital inclusion without measures to minimize social distancing exists.

Due to COVID-19 pandemic, many policy implications have emerged, also for EE. This involves the need for government investment on entrepreneurship education programs in times of crisis (Shrivastava, 1993). Government policy interventions can increase the number of entrepreneurs that in turn facilitate employment growth. During the COVID-19 pandemic, massive efforts have made in a short time to respond to the shocks to education systems and showed that a change is possible. Sure the solutions were not always fitting the purpose. Many teachers, trainers have to be reskilled; marginalized and vulnerable learners have to be involved in the new learning procedures. Education institutions have to think carefully about their choices regarding learning and inclusive education technologies.

A lot of research work is also necessary to improve EE during and after COVID-19 pandemic i.e. How quickly or slowly did educators move to a digital format? What advantages/disadvantages particularly social ones were there to online teaching methods? How disruptive innovation can help to improve EE? How different is existing entrepreneurship education compared to prior to the crisis? It is clear that within EE mutual understanding of crossing different disciplinary fields is more effective and results in understanding and problem solving for interdisciplinary learning are necessary. Organization of forms of interdisciplinary EE requires additional administrative work to overcome structural barriers within predominantly discipline-based institutions, involving coordinating timetables for staff meetings across disciplines and scheduled classes for students across disciplines, financial administration and responsibilities.

Loosely structured, optional platforms for social networking and connectivity increase students' overall engagement and perseverance in their learning despite isolation and will be also a community basis that can be further developed after the COVID-19 pandemic.

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