ENTREPRENEURSHIP EDUCATION GOING REMOTE: A RESPONSE TO COVID-19 RESTRICTIONS

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ABSTRACT

Amid the COVID-19 crisis, universities were forced to change. Remote education became the norm and challenges appeared, such as on infrastructure, mental health, cognitive overload, and format adaptation. Beyond those changes, universities were demanded to become more entrepreneurial, developing technologies in response to COVID-19, and to train more entrepreneurial talent that could address worldwide scarcity.

Current research has already highlighted that Entrepreneurship Education is more effective when active-based. Students achieve meaningful learning through business planning, simulations, working at start-ups, leading student organizations, and building a real business. Thus, training students in practical through remote education worsens university challenges. Although the first responses are being published over entrepreneurship education in remote formats, the present literature is still limited.

This paper aims to answer the following question: "how to develop experiential learning entrepreneurship programs under the constraints of remote learning?" It is a Case Study of a Brazilian MBA program and the research method was Participatory Action-Research. The data were collected through classroom surveys (during 108 classes), in-depth interviews, and debriefing sessions. Results demonstrate effective strategies for dealing with cognitive overload at online environments, such as mixing synchronous and asynchronous formats, in-group live activities, peer-based exercises, and more. Resonating with current research on remote learning during COVID-19, challenges are related to infrastructure and personal limitations.

Keywords: COVID-19, Entrepreneurship Education, Entrepreneurial University, Entrepreneurship, MBA, Higher Education, Remote Learning, Remote Education.

INTRODUCTION

To keep up with the fast pacing changes in society, universities need constant, and sustainable, change (Clark, 2003). Sometimes, unexpected pressures appear, forcing rapid changes that universities were not prepared for, such as COVID-19 and its consequences: lockdowns, technology scarcity, and economic downturn (Sarma, 2020; Seldon, 2020).

During the COVID-19 crisis, universities are facing two demands on entrepreneurship:

(i) To produce technological advances to fight the virus and

(ii) To train entrepreneurial talent for a better-prepared society (Kawamorita, Salamzadeh, Demiryurek & Ghajarzadeh, 2020; Kirby, 2020; O'Kane, 2020). Although efforts are being held on technological advances (Meshad, 2020; Wang et al., 2020), the impacts on education are still an unsolved challenge

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(Bennett, 2006 Chandler, 2020; Crawford et al., 2020; Toquero, 2020; United Nations, 2020; Mowafy, 2020).

Therefore, entrepreneurship education must adapt. When the debate around entrepreneurship education reinforces the need for practical experiences rather than theoretical approaches (Abualbasal & Badran, 2019; Cooper et al., 2004; Corbett, 2005; Fayolle & Gailly, 2008; Mahmood et al., 2020; Rae et al., 2010; Laferriere et al., 2019), educators encounter a bigger challenge towards using remote education technologies. Questions over student engagement, simulations realism, peer-based learning, in-group collaboration, team trust-building, and more are now further acute, and discussions should be held to address them. For instance, Angwin et al., (2019) highlights that current literature on management education still doesn't cover the effects of cognitive overload on students, a common effect in online learning environments (Stiller & Köster, 2016).

This paper aims to deepen the discussions over entrepreneurship education amidst COVID-19 remote challenges. Our goal is to present a case study of an entrepreneurship and innovation MBA program that remodeled itself around COVID-19 constraints. The paper is organized as follows: the second part presents the literature review on experiential entrepreneurship education and cognitive overload; the third part presents the research methodology; the fourth part covers our results and discussions; the fifth part presents the conclusions.

LITERATURE REVIEW

To develop entrepreneurial talent, one should look beyond classroom education (Fayolle & Gailly, 2008; Rae et al., 2010; Ribeiro et al., 2018). Regarding a comprehensive entrepreneurship education, current research has already presented case studies and more, highlighting that practical, experiential, action-based learning are well-suited (Fayolle & Gailly, 2008; Mahmood et al., 2020; Rae et al., 2010). Within classroom approaches, Ruskovaara & Pihkala (2013) highlights professors using activities such as field trips to companies (as well as lectures with entrepreneurs), business simulation activities, and entrepreneurship-related games and competitions. Beyond the classroom, students can learn through business planning (Honig, 2004), entrepreneurial experience simulations (Pittaway & Cope, 2007), careers experiences - such as working at start-ups (Politis, 2005), leading/creating student organizations (Plumly, 2008), entrepreneurship programs (Rasmussen & Sørheim, 2006), besides building a real business (Ribeiro et al., 2018) or building a business around personal hobbies (Ruskovaara & Pihkala, 2013; Taatila, 2010).

Based on this assumption lies the experience-based theory (Kolb & Fry, 1974; Kolb, 2014). Experiential learning theory asserts that students can achieve more meaningful - and effective - learning when living concrete experiences and reflecting upon them. According to Kolb (2014), students achieve effective learning when they cross four stages:

(i) Having a concrete experience;

(ii) Reflecting on that experience;

(iii) Building abstract concepts around it, leading to conclusions to be implemented;

(iv) Implementing the conclusions on active experiments (that leads to new concrete experiences). This approach leads students through multiple "*Kolb cycles*" and can improve learning outcomes, with current literature presenting positive effects (Cooper et al., 2004; Taatila, 2010).

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Following the premise that entrepreneurial education should work through concrete experiences, scholars now are facing a new challenge: how to develop experiential learning entrepreneurship programs under the constraints of remote learning? This question, while being paramount in times of COVID-19 and its sanitary restrictions, is also important when reflecting upon creating scalable educational models for broader audiences, such as Massive Open Online Courses (Sarma, 2020). Current research on online entrepreneurship education is still underdeveloped, which reflects in recent editorials like the "*From Offline to Online: Challenges and Opportunities for Entrepreneurship Education Following the COVID-19 Pandemic*" (Liguori & Winkler, 2020), by the Entrepreneurship Education and Pedagogy journal. One of the main challenges is the cognitive overload, the phenomena in which students cannot well absorb the information due to the excess of it, or its unfit delivery format - and remote learning has faced strong limitations in this aspect (Stiller & Köster, 2016). Cognitive load theory (Sweller, 2011) has gained the attention of entrepreneurship education scholars due to its relationship with instructional design challenges (Larrefier et al., 2019; Weber & Funke, 2012).

METHODOLOGY

Grounded by Yin's (1984) work, the present paper uses the Case Study method because of its recency and uniqueness. The studied case is about an MBA program from one of the main Brazilian universities, The Federal University of São Carlos (UFSCar). The program, the Master of Business Innovation (MBI) UFSCar, is a post-graduate program focused on entrepreneurship and innovation, and it was founded based on experiential learning principles.

Data was collected through Participatory Action-Research (PAR), a relational and participatory approach that collects data through an iterative process (Reason & Bradbury, 2013). PAR is seen as a cyclical process in which research participants actively collaborate and co-create a solution to a self-determined problem, involving a direct implementation or action following the research (Benham & Daniell, 2016; Zeller-Berkman et al., 2015). It has also been reported to be a leading approach to the empowerment of the people affected by an issue (Datta et al., 2015), especially in the field of education (Morales, 2016; Ruechakul et al., 2015).

For this research, every class had data collection efforts based on open-ended questions, class evaluation, and group discussions. Being 3 classes per month and multiple cohorts, we were able to collect student perceptions 108 times using the online platform Mentimeter. Along with that, researchers, professors, and coordinators that actively participate in the program collected more data through in-depth interviews and debriefing sessions. Specific techniques were used to activate a generative conversational field and achieve a deeper understanding of students' perceptions (Scharmer, 2009; Senge et al., 2005; Wiggins et al., 2005). Researchers then analyzed data and improved the program, starting a new cycle of implementation and data collection. Thus, PAR was an adequate choice due to the need for responsiveness and creative adaptation of the model amid the COVID-19 crisis, allowing continuous improvement of our interventions while collecting more data cyclically.

RESULTS AND DISCUSSIONS

The MBI UFSCar Model

Originally, the MBI program from UFSCar was designed in three phases:

(i) Self-innovation;

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(ii) Startup innovation;

(iii) Corporate innovation. The founding premises were based on self-development before company building, and the program held diverse activities oriented to self-knowledge from U-Theory (Scharmer, 2009). Entrepreneurship-related activities were project-based, where students had group projects focused on building a startup, encompassing exercises such as customer development, idea validation, business modeling, planning exercises, and pitching. Nowadays, the MBI UFSCar has already achieved 383 students in 15 cohorts, 4 cities, and 24 companies were created by its alumni.

Digital Transformation for Entrepreneurship Education

In March 2020, a couple of weeks after classes were suspended due to sanitary restrictions, the MBI UFSCar staff invited students and professors to online sessions designed to co-create and produce contextual knowledge over the MBI program. Besides, a series of staff meetings occurred to discuss recent online experiences, and some studies were gathered to improve our understanding of remote learning, such a one from the MIT Teaching Systems Lab (Reich et al., 2020).

One of the challenges about researching, developing, and implementing the MBI UFSCar online synchronous model relied on effectively listening to everyone involved, on one hand, and quickly acting, on the other. It required fast empirical data collection and multiple repetitions of reflection and action. Insights, perspectives, and knowledge were gathered and resulted in the implementation of the first iteration of the model. The model considered the following already documented (Reich et al., 2020) challenges and opportunities for remote learning: problems with students and scholars remote infrastructure; negative effects on students from vulnerable backgrounds; soaring boredom / cognitive overload in long-format live lectures, requiring a better balance on asynchronous and synchronous learning; individual struggles during COVID-19 times, like family loss, quarantine loneliness, in-house competing needs, vulnerabilities due to economic recessions, food, and housing insecurity, and limited access to healthcare; already existing technologies for accessibility (e.g. Google Translate and Youtube content); benefits from new asynchronous elements, such as recorded media; new channels for student interactions; digital tools offering a better way of collecting student data; a rising role of teachers as curator and mentors, rather than only lecturers.

Therefore, the first iteration of the MBI UFSCar model comprised in

(i) A shorter 3-hour synchronous classes, instead of 8-hour presential classes, according to reported needs and current contexts;

(ii) Asynchronous activities, including readings, videos, and the MBICast (a weekly recorded Podcast introducing the classes' concepts before synchronous activities), and

(iii) A series of "*mentorship*" meetings, of 1hour duration, during weekdays. After some iteration, improvements were held, such as 30 minutes of mentorship sessions right after synchronous classes. In doing so, we translated 16 monthly hours (2 presential classes of 8 hours) into 3 chunks of 5 hours and a half (one synchronous class of 3 hours, one mentorship group session of 30 minutes, one mentorship encounter of 1 hour, and 1 hour of asynchronous content).

For classroom experiences, we took advantage of two technologies: Zoom breakout rooms (a feature that allows students to divide themselves into smaller groups at different rooms) and written chat. With Zoom breakout rooms, we improved peer-based-learning by creating in-group experiences and peer-discussions of previous materials. With written chat, we were able to implement flipped classroom approaches where students are the protagonists, and the classroom (comprising other students and teachers) could give live feedback on projects being presented.

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We found that this method enabled collective intelligence, with presenters showing their projects (startups, ideas, and more) while the rest of the class offered enriched and synergic contributions through suggestions, networking opportunities (related personal contacts), and references.

Insights and Improvements from Data

Collecting data every week (different cohorts with three classes monthly) allowed us to deeply improve the model. Student feedbacks, although very positive, highlighted three pain points:

(i) students suffering from mental health problems in their professional lives as a consequence of their companies transitioning to a work-from-home approach (Farrer, 2019), impacting in longer work journeys (Bloom et al., 2015) and zoom-fatigue (Sklar, 2020);

(ii) different engagement levels in course projects;

(iii) Student loneliness and personal anxieties due to economic and health crisis. This feedback reinforced the need for a diversified and multimedia format to reduce the cognitive overload of remote learning.

Addressing those feedbacks, the following strategies were implemented. On overwork problems, we understood that the main impact was increased boredom and digital saturation. Thus, theoretical activities were split into small chunks during the weekdays - podcasts and long reads, asynchronous formats, convey the theoretical foundations and in-class, synchronous activities became mostly focused on group projects with practical experiences. For different engagement levels, we increased the time for mentorship sessions (from one-hour weekly to one hour and a half), which enabled more engaged students to receive individual support and delve into discussions. Finally, loneliness and personal anxieties were addressed by independent adventures and group creation. We empowered students towards creating new pedagogical experiences for the MBI, and they answered by creating extension groups (instant messaging groups around personal passions, such as photography, music, movies, philosophy, and more), personal side-projects, and student-led webinar where students could teach other students any topic that they want (geography, astronomy, and even barbecue cooking). The webinar, for instance, was much acclaimed and considered one of the most memorable experiences of their quarantine.

During the first 6 months of adapting the model, the program had 9 students dropping out, 5 by infrastructure or personal limitations. Those numbers resonate with Reich et al., (2020) findings: dropouts were affected by personal or infrastructure problems. On the other hand, one student that would drop out on the non-remote model due to geographic changes (going abroad) stepped back and remained at the remote model. In parallel, 93 new students entered in 2020 cohorts, showing a positive impression regarding the program and its response. Furthermore, feedbacks at the end of each class were positive and not showing cognitive overload problems.

One remaining challenge was student engagement on practical projects: we experienced the lack of engagement from some students that don't saw so much potential in their projects. Henceforth, heading their projects to personal and professional passions was an effective strategy to improve morale, and it reinforces the discoveries from Taatila (2010) and Ruskovaara & Pihkala (2013) on using hobbies to create meaningful experience-based projects.

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CONCLUSION

To reach broader audiences, entrepreneurship educators should learn to create remote learning formats. The COVID-19 crisis came up with dozens of challenges, but also accelerated the way we benefit from new technologies towards remote education. In this study, we presented the first results of adapting an experience-based entrepreneurship program for a fully remote approach, showing opportunities, such as different media structures, technology levers, and better responsiveness, as well as challenges, such as boredom and engagement problems. This work contributes to the literature by presenting new approaches to remote entrepreneurship education - while contributing to practitioners by offering concrete online strategies. The findings resonate with the works of Angwin et al., (2019) and Akhter (2017), showing promising results when using multimedia formats to reduce cognitive overload, and, thus, advances the discussions around remote learning strategies and pedagogical effectiveness for entrepreneurship education, a current research challenge (Liguori & Winkler, 2020).

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