Anette Kairikko, Johanna Koskinen: Making sense of a co-innovation journey across multiple contexts: a case study of an entrepreneurship micro-credential

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Making sense of a co-innovation journey across multiple contexts: A case study of an entrepreneurship micro-credential

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ABSTRACT

The purpose of this study is to extend knowledge about the role of context in the design and delivery of entrepreneurship education courses, in particular a novel course form: micro-credentials. We review the characteristics of micro-credentials and identify building blocks for massive open online course -based micro-credentials. Through a single case study, we examine this evolving form of open education in entrepreneurship education. Our results suggest that contextual considerations should be extended beyond the design stage of an entrepreneurship education course. Educators need to monitor changing contexts during implementation since learners bring their own contextual backgrounds. Contextual richness provides a considerable platform for entrepreneurial networking among learners. Finally, educators, particularly in international teams, should be aware of the impact of their own contextual backgrounds as well.

Keywords: Entrepreneurship education, micro-credential, context, co-innovation, case study

INTRODUCTION

This paper attempts to join the emerging discussion of entrepreneurship education and context (Ramsgaard et al., 2021; Thomassen et al., 2019; Lyu, Shepherd and Lee, 2021; Larty, 2021) and contribute to the understanding of context in entrepreneurship education both in theory and in practice. The role of context has been mostly considered a setting for studies in entrepreneurship education instead of something to be designed (Thomassen et al., 2019). However, in this paper we argue that dynamism of context should be a crucial element in the design of entrepreneurship courses. The research question of this paper is:

> How can context be dynamically adapted to the course design and delivery within entrepreneurship education?

The purpose of the paper is to explore the design and delivery of an entrepreneurship education course through a case study focusing on a micro-credential, defined as 'certified, open, flexible and short-term modules of courses' (European Commission, 2020). The European Union has set a goal that 60% of adults within the European Union should attend training annually by 2030 (European Commission, 2021) and micro-credentials offer one possible solution.

The micro-credential in question connected learners from various national, organizational and professional contexts linked with entrepreneurship and innovation. The theme was co-innovation and collaboration between startups and corporates. This theme is topical due to the complexity of current global challenges and the accelerated pace of change

that force entrepreneurial individuals to cope with uncertainty and change and, consequently, create new opportunities. This complexity calls for innovative approaches that enhance openness and collaboration in entrepreneurial activities (Usman and Vanhaverbeke, 2016; Lee, Olson and Trimi, 2012).

Our aim is to identify building blocks of micro-credentials and illustrate systematically the design of an entrepreneurship micro-credential focusing on co-innovation. Thus, this paper adds to the knowledge of designing a micro-credential, a novel form of education in entrepreneurship. Furthermore, this paper explores the design and delivery of courses in entrepreneurship education through the lens of various contextual levels. Consequently, it contributes to the current discussion in entrepreneurship education that stresses dynamism of context in educational designs.

This paper proceeds as follows. We start with literature background related to the concept of micro-credential and the role of context in entrepreneurship education studies. Thereafter, we present the conceptual framework followed by methodological considerations. The findings are presented first, illuminating the overall design of the micro-credential followed by an analysis based on the conceptual framework and on the perceptions of learners during the latter half in the micro-credential. The paper finishes by discussing the contributions of this study.

LITERATURE BACKGROUND

The micro-credential concept

Micro-credential is an emerging term without a single definition, and it has not been widely used in higher education in Europe until recent years (OECD, 2021). Even though most short-term learning programmes may meet the basic requirements of being micro-credentials, they often appear by another name (e.g. continuous education). In this paper, we focus on Massive Open Online Course (MOOC)-based micro-credentials. Micro-credentials may, however, be also provided on campus (European Commission, 2021).

In their traditional meaning MOOCs are free, open, web-based online courses offered to any participant from anywhere in the world (Cornier and Siemens, 2010). The two main types are known as connectivist MOOCs (cMOOCs), which focus on social learning (Fidalgo-Blanco et al., 2016), and instructivist MOOCs (xMOOCs), which focus on behaviouristic learning. Increasingly, MOOCs are offered in a stackable format in which learners who complete a series of MOOCs receive a micro-credential for the overall outcome (Pickard, Shah and De Simone, 2018). We reviewed knowledge of MOOC-based micro-credentials and identified their main building blocks, which we summarize in Table 1.

Table 1: The main building blocks of MOOC-based micro-credentials

Features	Description	Reference
Open and online	- mainly delivered online - often open, i.e. providers offer them for free or with small fees making education more affordable, accessible and inclusive	Kato et al., 2020, p.18 Kato et al., 2020; Kop and Carroll, 2011
Modularity and stackability	*Modularity:* - may be either standalone courses or consist of several units or courses - typical length is larger than a single course, but less than a full degree *Stackability:* - may be 'stacked' flexibly to build into larger units of accreditation or a larger award, such as a full degree	Milligan and Kennedy, 2017; McGreal and Olcott, 2022; Cirlan and Loukkola, 2020; Kato et al., 2020; Resei et al., 2019; European Commission, 2021
Versatile providers and content creators	- a wide range of micro-credential providers - often provided in collaboration across various types of organizations, such as higher education institutions, businesses and non-governmental organizations - may provide more possibilities for wider audiences to access global content from top universities and global companies	OECD, 2021, p. 5-6 Resei et al., 2019
Digital badging	- part of a digital credentialing/badging system in which learners are encouraged to share their badges through different digital communications technologies - offers a way to demonstrate motivation to learn new things (especially for young people early in their careers)	Casilli and Hickey, 2016; Milligan and Kennedy, 2017 Resei et al., 2019
Scalability	- may attract a wide geographically-dispersed audience of learners - may contribute to inclusiveness in lifelong learning by reaching new learners also from disadvantaged backgrounds - MOOCs suffer from low completion rates, typical average of less than 10%	Cornier and Siemens, 2010, p.32; Koskinen et al. (2021) European Commission, 2021 Cornier and Siemens, 2010; Alraimi et al., 2015
Heterogeneous learners	- mainly targeted toward students from higher education institutions and professional lifelong-learners - typical learners tend to be more educated, more skilled and already possess some	Resei et al., 2019 OECD, 2021

	knowledge related to the course topic compared to learners in traditional online courses - in entrepreneurship micro-credentials, learners are often in management positions and the vast majority come from highly developed countries	
Responsiveness to changing learning needs	- valuable for lifelong learning and may make education more aligned to fast-changing labour market requirements - may be seen as an alternative or supplement to a degree - mainly taken for upskilling or reskilling - allow learners to verify their knowledge or skills - offer a way to demonstrate specific learning not referenced in degree transcripts - build on enhancing 21st century skills in higher education[1]	Resei et al., 2019 European Commission, 2020; Kato et al., 2020, p.24 Milligan and Kennedy, 2017 Wheelahan and Moodie, 2021
Flexible, learner-driven pedagogics	- learning model: competency-based and learner-driven - typically flexible and personalized - focus more on personal, self-directed and network-based learning in which learners decide with whom they communicate and what resources and tools they use for learning - the educator's role shifts from facilitator of knowledge to facilitator of tools that frame learning and sensemaking when the learning space is no longer confined - increase in autonomy, diversity and openness potentially leads to learners suffering from lack of structure, support and moderation	Resei et al., 2019 Kop and Carroll, 2011 Thomassen et al., 2019 Mackness et al., 2010

Some of the main influential elements in relation to entrepreneurship education mentioned in Table 1 are according to Thomassen et al. (2019) the diversity of learners, the individual competence of learners and social networks.

This paper examines an entrepreneurship micro-credential by focusing in particular on its contextual dimensions. First, we discuss the role of context in entrepreneurship studies in general and, second, we focus on the emerging discussion of context in entrepreneurship education.

[1] 21st Century skills include literacy and communication skills, numeracy, scientific literacy, financial literacy, cultural civic, literacy, critical thinking, creativity, leadership, collaborative problem solving and learning skills (Wheelahan and Moodie, 2021)

The role of context in entrepreneurship education studies

Context is a central aspect when studying entrepreneurship (Chalmers and Shaw, 2017; Welter, Baker and Wirsching, 2019; Zahra, 2007; Zahra and Wright, 2011) and contextualized perspectives in entrepreneurship have increasingly gained conceptual attention (Welter, 2011; Zahra, Wright and Abdelgawad, 2014).

The literature on entrepreneurial contexts (Autio et al., 2014; Zahra and Wright, 2011; Zahra et al., 2014) refers to different classifications containing contexts such as business (industry and market), social (networks), spatial (geographical areas, industry districts and clusters), institutional (social and cultural; political and economic system) and temporal. The authors above appear to agree on the importance of incorporating context in studies of entrepreneurship and on the lack of agreement in terms of contextual classification.

According to Welter, Gartner and Wright (2016), contexts should be considered in their plurality, and the authors address the interaction of different contexts. Thus, they stress the interplay between multiple levels of contexts and consider that context is fluid, constantly changed by its actors.

However, surprisingly, context has gained only a limited amount of attention in entrepreneurship education literature even though it constitutes a central element (Thomassen et al., 2019; Neergaard and Christensen, 2017). Entrepreneurial activities, seeking opportunities and taking risks, take place in various arenas. Thus, entrepreneurship is not merely creation of businesses, but rather it encompasses what authors call developing entrepreneurial perspective or entrepreneurial spirit (Kuratko, 2005; Fayolle and Gailly, 2008; Mwasalwiba, 2010).

In a similar vein, the focus of contextual elements should not be limited only to entrepreneurial tasks related to owning and managing a venture (Cope, 2005). Our research addresses this by focusing on entrepreneurial tasks of co-innovation among various groups of learners with various contextual backgrounds. In addition to preconceptions among learners, educators bring their own preconceptions to the situations of entrepreneurial learning, which may cause gaps between learners and educators (Seikkula-Leino et al., 2010).

Referring to the earlier notion of the presence of context at multiple levels and its constant alteration by entrepreneurial actors, we may argue that a better understanding of contextual elements and the incorporation of context in educational designs in entrepreneurship is necessary. Thomassen et al. (2019) call for a shift from addressing context simply as a setting to treating it instead as a dynamic space that can be designed.

CONCEPTUAL FRAMEWORK

In entrepreneurship education, relevant questions to address are ‘what is learned’ and ‘how is learned’ and both of these questions are contextually dependent (Lave, 2009). It has been argued that the learning environment consists of following dimensions: purpose (learning goals), content (learning mode), process (course structure) and context (course setting) (Neergaard and Christensen, 2017).

When designing an entrepreneurship course, it is pertinent to define what constitutes context. Referring to the recent discussions of context in entrepreneurship, this paper refers to a framework (Thomassen et al. 2019) which analyzes an educational design across the following levels of context: macro, meso and micro. Furthermore, it operationalizes the design of entrepreneurial education through following questions: who, what, when and where. Notably, some of these elements are within the control of the educator and some are not.

In order to address the research question, we synthesize the above-mentioned frameworks (Thomassen et al., 2019; Neergaard and Christensen, 2017), and especially focus on context dimensions by acknowledging the dynamic characteristics of context.

< INSERT FIGURE 1 HERE>

APPROACH AND METHODOLOGY

In order to explore the dynamic adaptation of context during the design and delivery of an entrepreneurship education course, this paper employs a single case study (Flyvbjerg, 2006; Gummesson, 2007; Ragin, 1992). The chosen methodology can be justified by its strengths to study context, in other words, richness of the data and in-depth insights. The limitation of the single case study is, however, the low generalization of the findings.

This case study focuses on a micro-credential, which consists of two online courses: a MOOC for over 2,400 enrolled learners consisting of two stand-alone parts for independent and collaborative learning followed by a traditional online course, 'Master Class', for 42 selected learners from the MOOC. The data collection follows case study strategy (Piekkari, Welch and Paavilainen, 2009) which proposes to utilize a variety of methods.

The data consists of observations, learners´ weekly reflective notes, other documents and course materials provided to the learners through the course platform and interviews with learners. Thus, the data consists dominantly of naturally occurring data instead of manufactured data such as interviews; the strength of such data is to avoid produced settings for data gathering (Silverman, 2010). The sources of data are indicated in Table 2.

Our team of researchers was involved in the planning and implementation of the micro-credential from January 2019 until June 2021. Our roles and the intensity through which we were involved varied throughout the process from full immersion to outside observation (Spradley, 2016). We as researchers cannot de-contextualize ourselves (Welter et al., 2016) and a research context encompasses questions such as 'whose understanding of context, what aspects of context and how knowledge of context may be accessed by the researcher' (Chalmers and Shaw, 2017). As researchers, we need to be aware of the subjective view of context as we create context through our construction and interpretation of it (Akman, 2000). We strove to be reflective researchers throughout the process by following the concept of reflexivity, in other words being aware the influence of our own role on both the process and the outcome of the research, as well as being aware of the mutual influence between a researcher and their research object (Haynes, 2012).

Table 2: Sources of data and their use in the analysis

Type of data	Time span	Role of researcher(s)	Data used in the analysis for
14 expert interviews	2019	Interviewers	Purpose, Context (who, what)
Documents and observations from regular meetings (1–2/month) with the consortium	2019–2021	Participatory observations	Purpose, Content, Process, Context
Observations on participants´ comments in discussion forums during the MOOC and the Master Class	2020–2021	Participatory observations	Process, Context
Posts in a learning community (LinkedIn group)	2020–2021	Ranging from non-participatory to participatory observations	Content, Context
Focus group interview with six MOOC participants	2021	Interviewers	Purpose
Coaching notes from weekly coaching sessions with the learners	2021	Participatory observations	Process, Context
Webinars (kick-off, expert speeches, midterm seminar and final pitching event) during the Master Class	2021	Ranging from non-participatory to participatory observations	Content, Process, Context
Participants´ weekly reflections during the cMOOC part and during the Master Class	2020–2021	Non-participatory	Purpose, Content, Process, Context

The approach in this research is abductive and guided by constant iteration between data and theory. The boundaries of a case are set through conducting the research while the researcher turns the object of study into an object of interpretation (Eriksson and Kovalainen, 2008; Timmermans and Tavory, 2012). The analysis was completed in several iterative rounds by comparing and contrasting data from different sources and between different types of learners during the different phases of the micro-credential. The data was analyzed both thematically and chronologically. We analyzed the data independently from each other and then compared their findings.

EMPIRICAL ANALYSIS AND FINDINGS

This paper is based on data collected from a micro-credential, which was jointly designed, created and implemented during the years 2019–2021 with an international consortium, called Corship (Corporate Edupreneurship), consisting of seven European organizations representing higher education institutions, startup associations, corporates and innovation networks from Austria, Belgium, Finland, Germany, Poland and Portugal. The course focused on entrepreneurship and, more specifically, on startup and corporate collaboration and consisted of three different elements: xMOOC (instructivist), cMOOC (connectivist) and a typical online course called the Master Class. The composition of its different elements with respective numbers of learners is shown in Figure 2. In this paper the participants of the course are called learners and the designers and facilitators are called educators.

< INSERT FIGURE 2 HERE>

Next, we present the overall design of the micro-credential at different stages of the course and process and analyze the entire micro-credential through the lenses of purpose, content, process and context (Neergaard and Christensen, 2009; Thomassen et al., 2019). Thereafter, we focus on analyzing the latter part of the micro-credential, the Master Class, and make sense of the interplay of different contexts from the participants´ point of view.

Design of the micro-credential

Referring to the framework in Figure 1, the design of the micro-credential is analyzed by the dimensions purpose, content and process (Table 2) and secondly by context, which is addressed through the questions who, what, when and where at the macro, meso and micro level (Table 3).

The learning varied from individual learning to collaborative learning in teams. The collaborative parts (cMOOC and Master Class) were designed to enhance competences that stimulate entrepreneurial activities regardless of the background of learners. These competences encompass opportunity recognition, resource mobilization, coping with uncertainty and complexity, creative and collaborative idea generation, solution finding and opportunity exploitation.

Table 3: The design of an entrepreneurship micro-credential

	Week 1–4 xMOOC design	Week 5–6 cMOOC design	Week 1–8 Master Class design
PURPOSE	Building a common understanding of co-innovation and startup/corporate collaboration through theory	Applying the theory in a simulated case study and learning through experience, application and reflection	Applying the theory in a real-life case study and learning through experience, application and reflection
CONTENT	Structured, scalable, individual learning	Semi-structured and collaborative learning in teams, educators as moderators	Semi-structured and learner-driven, collaborative learning in teams, educators as moderators and coaches
PROCESS	Task-oriented and procedural Videos, articles, quizzes, exam Automatic grading	Learner-driven Videos, simulated cases, group work Peer assessment	Mix of pre-given tasks and learner-driven case solving Videos, webinars with experts from the field, real-life co-innovation cases, weekly coaching and weekly assignments Group, peer, field experts' assessments

The micro-credential was targeted for higher education students, corporate representatives and startup entrepreneurs. Thus, learners from these groups represented the majority of learners.

Digital context appeared to play a more significant role than in the initial design of the micro-credential. The outbreak of the COVID-19 pandemic initiated a sudden transformation of long-predicted trends related to work and study online. For the micro-credential, this shift resulted in the planned context of physical interaction in the Master Class being implemented completely online. Learning took place through various digital platforms instead of physical interaction with immediate responses, and learners did not necessarily communicate with other learners or educators synchronously. This digital context requires explicit messages to avoid misunderstandings and false interpretations.

Table 4: The contextual levels of entrepreneurship micro-credential

	Micro-credential		
Context	Micro	Meso	Macro
Who	Educators: lecturers, innovation experts and e-learning specialists Learners: Open for anybody, targeted for corporate representatives, startup entrepreneurs, students, consultants and external co-innovation experts	Higher education institutions, startup and innovation networks and corporates	EU funded project: partners from six European countries
What	Innovative form of training within open education	Establishment and improvement of collaboration between startups, corporates and universities	Enhancement of co-innovation across Europe
When	Planning 2019–2020 Implementation 2020–2021; durations as highlighted in Table 2 Synchronous and asynchronous	Work packages within the project	Proposal, interim and final report
Where	MOOC platform Social media tools Messaging apps	Digital education mainly during the COVID-19 pandemic	Transition to digital learning

The role of multiple contexts during the micro-credential

During the second stage of the analysis, we took a deeper look into the latter part of the micro-credential, the Master Class. In comparison to the MOOC part of the micro-credential, which had clear global coverage, an overview of the learners that took part in the Master Class shows that the European context was dominant, with 87.5 % of learners originating from the European Union[2]. The main target groups for the co-innovation task were represented as follows: corporate managers and employees (42.5%), startups and entrepreneurs (32.5%), students (17.5%) and other participants (7.5%).

The Master Class was designed to provide learners with a hands-on challenge to experience co-innovation. The task of the learners was to address, in heterogeneous teams, the challenge of making European cities more liveable. An analysis of the weekly flow of the Master Class follows its weekly progress from the kick-off workshop to the final pitching. During the co-innovation journey, which lasted eight weeks, learners attended webinars with expert guest

[2] Participants by country: Germany 18, Austria 5, Finland 2, Portugal 2, Belgium 2, Switzerland 2, Netherlands 1, Czech Republic 1, Canada 1, Chile 1, Slovakia 1, India 1, UAE 1, Georgia 1

speakers and were coached by dedicated team coaches on a weekly basis. The analysis sheds light on the perceived learning context from the learners´ point of view.

Eager to embrace new experiences – week 1

At the start of the course, learners were eager to embrace new learning experiences in teams. They realized the opportunities to learn and network through other team members´ different professional and cultural backgrounds. Learners started to organize work proactively and they participated in team discussions. Everyone was integrated into teams and a fertile learning context at the team level started to emerge.

Learners familiarized themselves with multiple digital communication tools; however, some learners worried whether they had been able to learn to use all of them. Some commented that team building was more difficult in a digital learning environment compared with a physical environment due to lack of personal connections. It is apparent that the completely digital context influenced communication and for some learners it was more difficult than for others.

The first team task was to define a problem to be solved. The number of different tasks required each week appeared to take a large amount of time. Despite the learners´ profiles (coming from startups, corporates and universities), they struggled to define the roles of a corporate and a startup required in the task instructions. Eventually, teams began to experience slightly mixed feelings. As one learner expressed:

> I finish the weekend feeling a bit confused, but mostly excited what is to come and eager to embrace new experiences.

Co-innovation confusion – week 2

As learners started to perform the required team tasks, they compared their expectations to their experiences about the course objectives, contents and learning methods. Learners were confused about the overall course learning goal, which focused on developing their co-innovation skills. Instead of learning co-innovation, the given team tasks appeared not to be relevant for developing those skills. As one learner stated:

> I was hoping to work on case studies directly for the co-innovation builder [a canvas tool for developing co-innovation skills]. We are creating personas not knowing who are the companies involved and their respective goals. I was hoping for those 8 weeks to be really focused on the co-innovation builder.

The educators and coaches were given critical feedback in terms of the role of co-innovation in the course. During the design of the course it had seemed clear for the organizers that learners represent different profiles and find their positions accordingly in the co-innovation task. However, this result did not occur as planned, which showed that educators cannot steer how the learning context finally develops. Active listening, reflections and encountering learners are needed throughout the journey in order to be sensitive about the gaps between expectations and reality.

Diversity in teams: an opportunity or challenge? – week 3

Learners came from different professional and cultural contexts, increasing available resources (skills, abilities and experiences) for teams to work with tasks. Learners appreciated this diversity as they learnt new ideas and perspectives from each other. One learner described their team in this way:

> We have a great team with very different people and personalities- diversity is ensured- all very inspiring and engaged. We are pragmatic and funny.

Cultural differences, on the other hand, challenged learners' abilities to understand one another and often took more time to integrate diverse perspectives into team decisions. As the majority of teams worked under time pressure, teams could not always take full advantage of resources available to them.

Time was currency for most learners. Learners' contexts varied; however, the majority of them were well-educated, busy professionals in demanding work positions. Their abilities to balance time between other social contexts such as work, family life and studies were a recurring theme during the course. Learners were willing to sacrifice their free time in the course if it contributed to their expectations develop themselves professionally.

Mixed emotions – week 4

One learner characterized this emotional week as: 'Up and down, up and down. That was the fourth week.' The pitfalls of the overall course design started to surface at this time, creating mixed emotional responses among learners.

Many learners wondered whether they were able to learn co-innovation skills. A tool called the Co-innovation builder was created by the organizers to support their collaborative innovation process. However, its use did not always fit for given tasks. As one learner commented:

> Unfortunately, I still don't get the benefit of using a CIB [a co-innovation tool] at this moment in the process, and I'm really starting to wonder whether I will ever get it. My impression is that it is not the best tool to use in a Design Thinking process — but again, I'll be happy to learn something different.

Too many tasks and too little time to do them was not the only issue which created confusion and negative emotions among learners. In particular, task instructions not only were confusing but also contained conflicting information.

The course contained six webinars with expert speakers. The webinars attracted a relatively high percentage of learners to participate even though learners were busy in their daily jobs. The expert speakers addressed various aspects of the given challenge, specifically that of making European cities more liveable. Furthermore, they enabled the learners to actively engage in the discussions and expand their networks.

Increasing frustration and sinking motivation – week 5

Learners appreciated the weekly coaching meetings, in which they were able to clarify instructions, ask questions and get feedback. It appears that learning was well supported at the team level in the meetings with coaches whereas there was more confusion and unclear issues at the course level.

The lowest point of the course occurred following pitch presentations that were organized in the midterm seminar. Learners felt disrespected after receiving feedback from the jury. To make matters worse, learners did not clearly understand what was expected from them in the presentations. On the other hand, the jury members were not necessarily briefed sufficiently about the overall aims of the course, and to them the context might have appeared as a typical startup competition, which was not the case.

Again, at the micro level, a team meeting with the coaches was important for learners to reflect their negative experiences and to receive advice and encouragement to continue the course.

Giving up is not an option: ways to cope with the situation – week 6

Only two learners had withdrawn from the course. For many it was not an option even though they experienced challenges in the course. Teams developed different tactics to cope with these situations and to work more effectively, relying more on one another's strengths to do specific tasks and dividing work to get tasks done faster. As one learner said:

> We are now used to work as a chain. A sub-team does one part, the second builds on it and the third ends the job.

Another way to cope with the situation was sarcasm. As one learner put it:

> It is only two more weeks we will keep going. Maybe the big enlightenment is right out there and so we do not want to miss it.

Some learners wished to provide advice on how to improve the course. Despite the challenges, many learners continued to be happy to work with their team members and they felt they learnt a lot through the diverse backgrounds of their team members.

Expectations mismatch – week 7

Learners started to make final improvements to the task. For some learners, the course had provided a clear structure for collaboration whereas others felt that the course did not fully meet their expectations for co-innovation. The weekly tasks were criticized in particular for having too many canvas tools, which did not always support co-innovation. One learner stated:

> My expectation was to learn about and engage in co-innovation. Still I cannot see where and when this is supposed to happen. We are not co-innovating, we are being half-heartedly incubated to build a start up?? And the incubation is achieved by us filling out what feels like every single canvas that was ever invented.

Despite the challenges of meeting diverse expectations, the majority of learners were excited about the possibility to network with others, which was considered a valuable outcome from the course.

The finish line in sight – week 8

During the final week, team members reflected their co-innovation journey, which was not always a straight path. One team described the journey in this way:

> We took some detours but they helped us to understand the "real problem," the path was muddy but wicked problems are not supposed to be easy, and our vision was blurred but focusing on the problem provided clarity.

Learners did not reach all pre-planned learning outcomes; however, the co-innovation journey described above was an important outcome. Most teams had good team spirit, which was supported and strengthened by the coaches. In the micro context, the awareness and willingness of both learners and coaches to listen and understand each other were success factors to tackle continuously evolving learning context in the course. Because the course educators came from differing backgrounds and occupational contexts more time would have been required for discussion and planning the course contents in order to reach a more coherent design in the meso level.

DISCUSSION AND CONCLUSIONS

The contributions of this research paper are threefold. First, we propose to include contextual considerations beyond the design stage of an entrepreneurship education course. This notion includes the awareness of the interplay of different contexts constructed by the educators and learners. Second, we contribute to topical discussions of micro-credentials by identifying the building blocks of MOOC-based micro-credentials as a result of reviewing the fragmented knowledge of this novel form of open education. Third, through a single case study, we illustrate the design and delivery of this course format – micro-credentials – and how it is applied in entrepreneurship courses and training.

This paper joins the emerging discussion of context in entrepreneurship education (Ramsgaard et al., 2021; Thomassen et al., 2019; Lyu et al., 2021; Larty, 2021). In line with Thomassen et al. (2019) our results confirm that acknowledging the dynamism of context is important in entrepreneurship education designs. Instead of one context, it is important to refer to contexts in plurality (Welter et al., 2016). Moreover, context is not only a setting but a dynamic factor consisting of multiple levels: micro, meso and macro.

During the implementation stage, learners and educators create a unique one-time experience and a new context of learning. According to the analysis, misunderstandings and frustration among the learners, which in the worst scenario may lead to the withdrawal from the course, are partly linked with false expectations of the learning context. Therefore, educators should be aware of potentially emerging gaps during course implementation, monitor changing contexts and act accordingly.

Contextual richness provides a considerable platform for entrepreneurial networking among learners. In terms of course educators and learners, this study focused on the European context of startups, corporates, innovation networks and higher education institutions. However, the MOOC part of the micro-credential attracted global learners as well. The diverse team of educators experienced a similar experience to the learners. Educators bring in their own contexts and need to be aware of their own preconceptions (Seikkula-Leino et al., 2010). Therefore, discussion of context should be part of the planning. We cannot de-contextualize ourselves. Thus, sharing subjective understanding and construction of context is a step forward.

In terms of practical implications, the constantly changing context does not mean educators should or could change their plans during implementation. However, they should acknowledge and be aware of the contextual reality, which may differ from their understanding of the context during the planning stage. Encountering learners respectfully and communicating openly with them may be helpful. The positive coaching experiences of this study demonstrate this strongly.

We focused on a novel form of education, and the digital context played a significant role in the micro-credential in question. There is clear criticism stemming from low completion rates of MOOCs (Cornier and Siemens, 2010; Alraimi et al., 2015) and learners potentially lacking sufficient structure, support and moderation (Mackness et al., 2010). However, MOOCs and micro-credentials have significant benefits in attracting and bringing together diverse, experienced (Resei et al., 2019; OECD, 2021) and globally-dispersed learners (Cornier and Siemens, 2010, p.32; Koskinen et al., 2021) through open (Kato et al., 2020; Kop and Carroll, 2011), flexible and personalized learning (Resei et al., 2019). Furthermore, they have an important role in life-long learning and making education more aligned to fast-changing labour market requirements (Resei et al., 2019; European Commission, 2021).

Finally, the post-pandemic world is likely to witness more online businesses, including more online courses (Zahra, 2021), which require novel approaches for designing entrepreneurial courses. Because this study examines only a single case, a suggestion for further research would be to conduct a comparative study focusing on the impact of traditional and novel forms of entrepreneurship education.

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